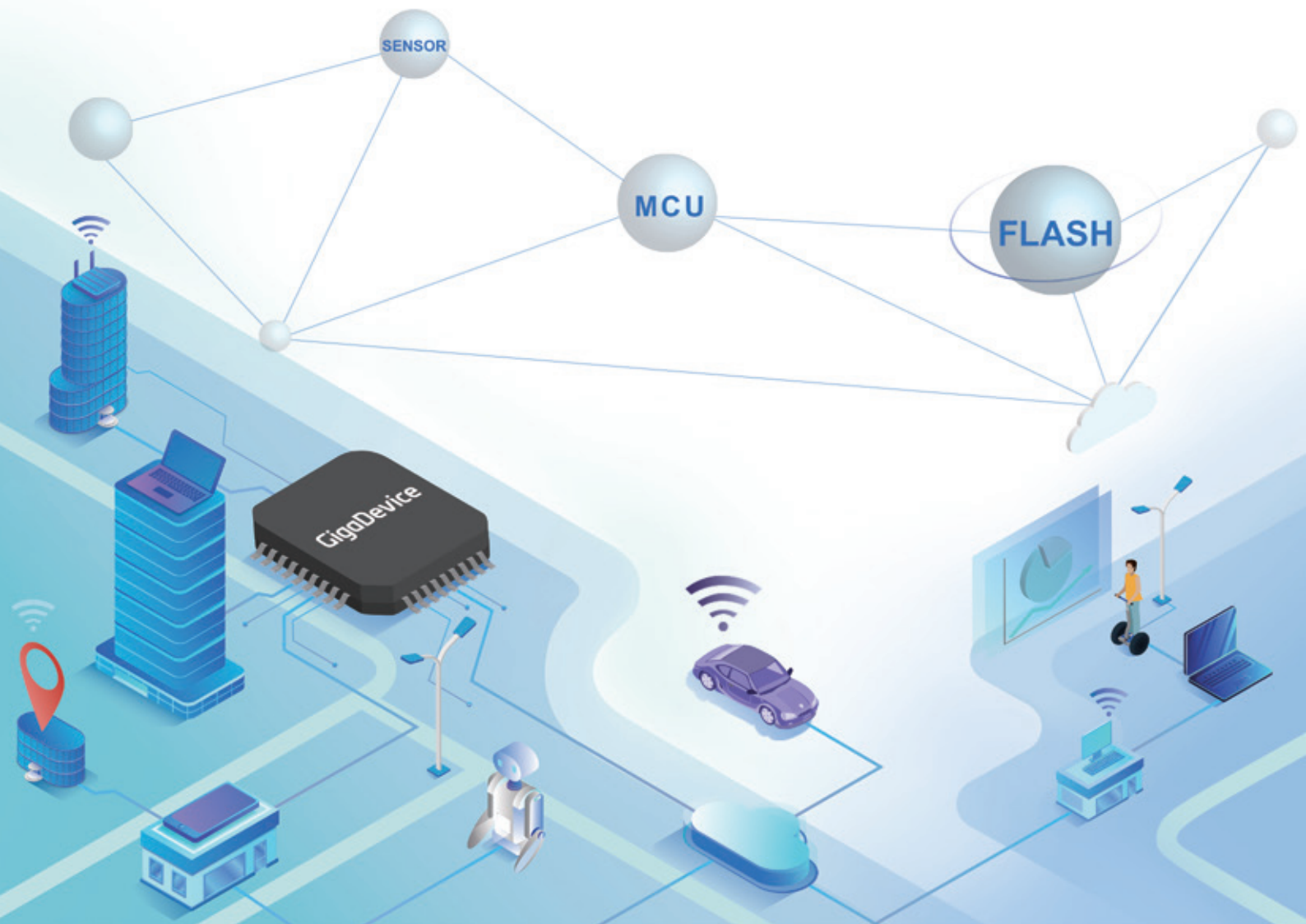


# PRODUCT SELECTION GUIDE



# About Us

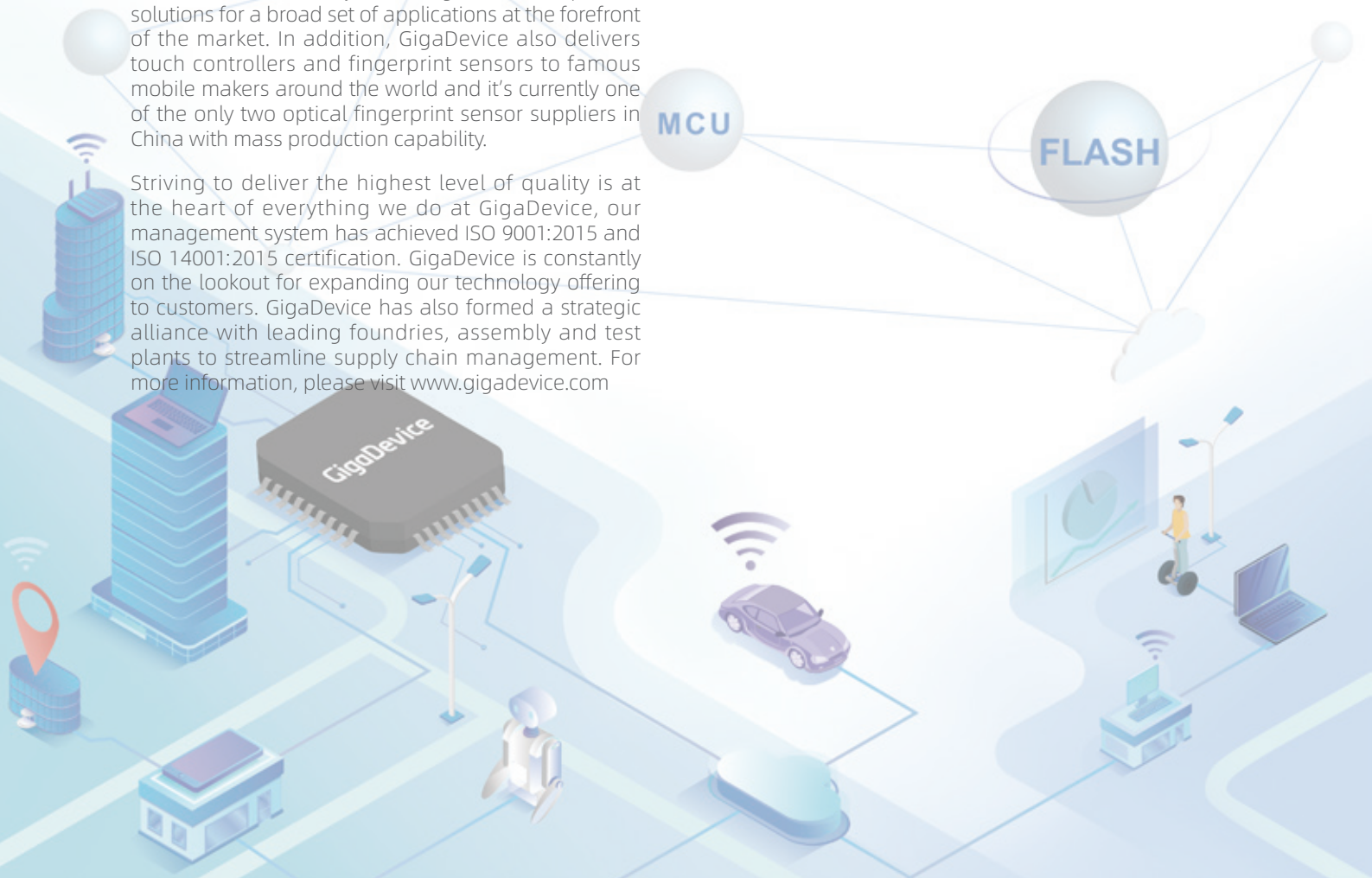
Founded in 2005 and headquartered in Beijing, GigaDevice Semiconductor (Beijing) Inc. was successfully listed on the Shanghai Stock Exchange in August 2016. With more than 800 employees, GigaDevice is a leading fabless semiconductor company dedicated to developing advanced memory technologies, MCU and sensor solutions. It is a global company with branch offices located in Beijing, Shanghai, Shenzhen, Hefei, Xi'an, Chengdu, Suzhou, Taiwan, the United States, South Korea, Japan, the United Kingdom, and Singapore, providing local support at customers' fingertips.

GigaDevice has three major product lines: FLASH memory, 32-bit general-purpose MCU and intelligent Human-Machine Interface (HMI) sensor chips. Having dedicated to high performance, low power products, GigaDevice offers turnkey solutions for market segments ranging from industrial, automotive, computing, consumer, IoT, mobile application to network/telecommunications. GigaDevice is currently ranked as the No. 1 SPI NOR FLASH supplier in China and No. 3 in the worldwide with an annual shipment of over 2 billion units and accumulated shipments over 10 billion since its inception. GigaDevice GD32 MCU is a leader in China's high performance 32-bit general-purpose microcontroller market. With a total of more than 300 million units shipped and over 350 products for selection in 24 family series, GigaDevice can provide solutions for a broad set of applications at the forefront of the market. In addition, GigaDevice also delivers touch controllers and fingerprint sensors to famous mobile makers around the world and it's currently one of the only two optical fingerprint sensor suppliers in China with mass production capability.

Striving to deliver the highest level of quality is at the heart of everything we do at GigaDevice, our management system has achieved ISO 9001:2015 and ISO 14001:2015 certification. GigaDevice is constantly on the lookout for expanding our technology offering to customers. GigaDevice has also formed a strategic alliance with leading foundries, assembly and test plants to streamline supply chain management. For more information, please visit [www.gigadevice.com](http://www.gigadevice.com)

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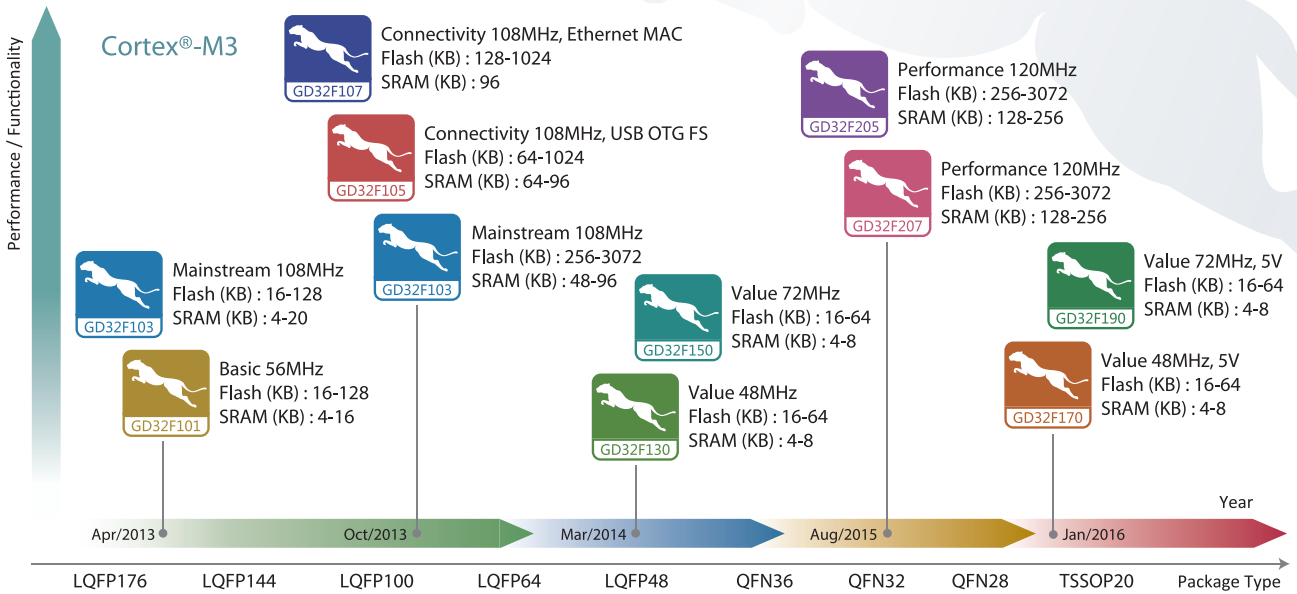
ARM CORTEX  
Processor Technology

ARM University  
Worldwide Education Program

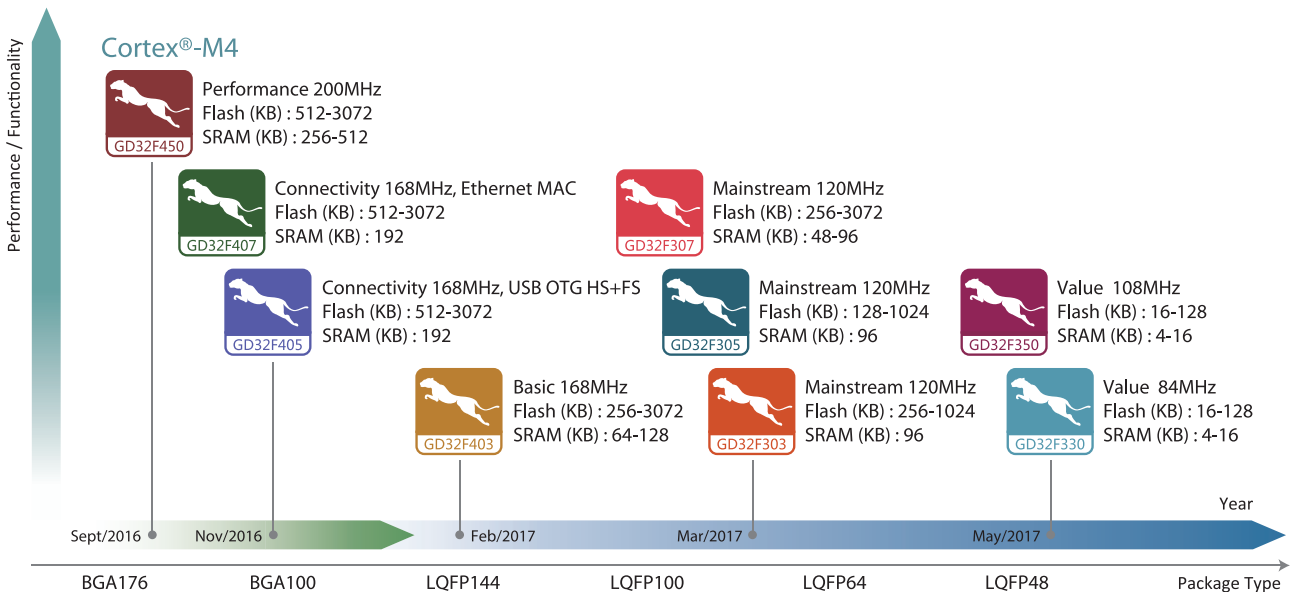
ARM Connected Community

# GD32 MCU

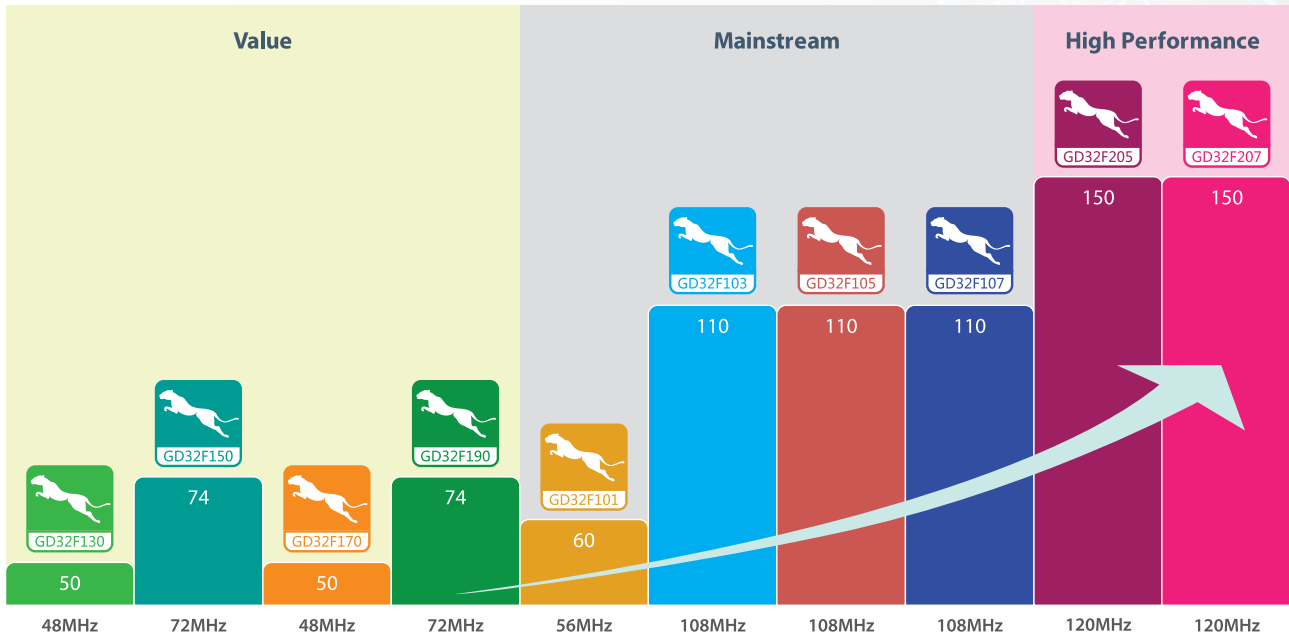
## GD32 Cortex®-M3 MCU Portfolios



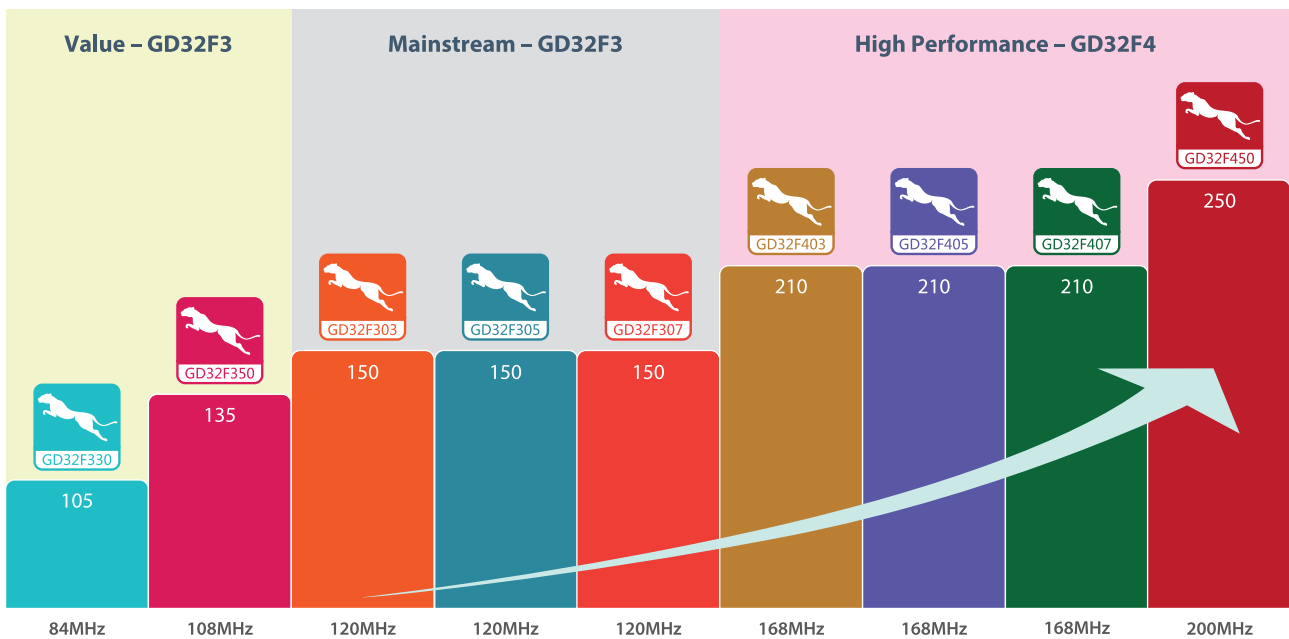
## GD32 Cortex®-M4 MCU Portfolios



## GD32 Cortex®-M3 MCU 200+ Part numbers



## GD32 Cortex®-M4 MCU 100+ Part numbers





## GD32 Cortex®-M23 MCU 20+ Part numbers



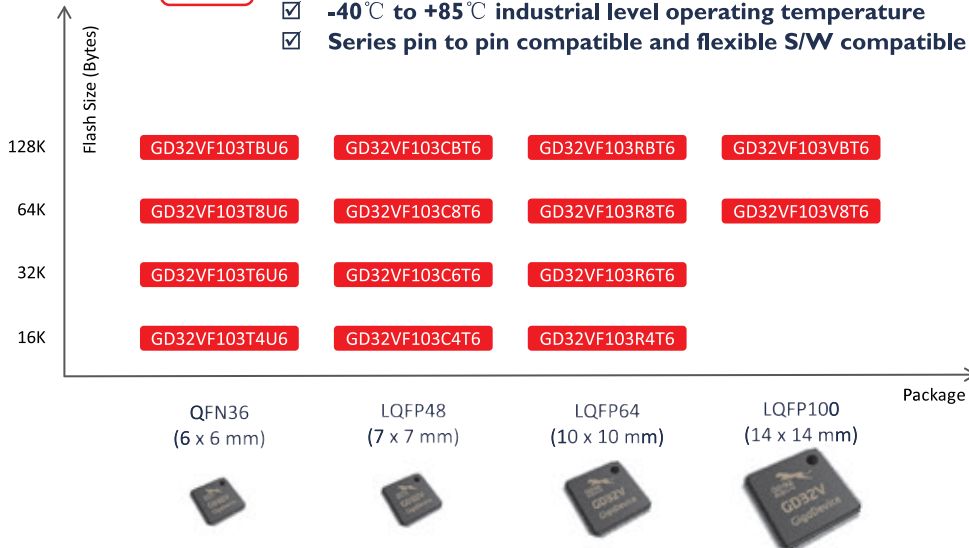
- ☑ **GD32E230 & GD32E231 & GD32E232 Arm Cortex®-M23 value line @ 72MHz**
- ☑ **16K-64K Flash, 4K-8K SRAM**
- ☑ **1.8-3.6V supply; 5V tolerance I/Os**
- ☑ **-40°C to +85°C industrial level operating temperature**
- ☑ **Series pin to pin compatible and flexible S/W compatible**



## GD32VF103 RISC-V MCU 14 Part numbers


















- ☑ **GD32VF103 RISC-V Bumblebee Core Mainstream Line**
- ☑ **Max F<sub>cpu</sub> 108MHz, 16K-128K Flash, 6K-32K SRAM**
- ☑ **2.6-3.6V supply; 5V tolerance I/Os; all support USB OTG & CAN 2.0B**
- ☑ **-40°C to +85°C industrial level operating temperature**
- ☑ **Series pin to pin compatible and flexible S/W compatible**



# GD32 Arm® MCU Product Family

| Performance     |                  | Arm® Cortex®-M 32-bit MCUs           |  |  |  |   |  |
|-----------------|------------------|--------------------------------------|--|--|--|---|--|
|                 |                  | Cortex®-M23                          | Cortex®-M3                             |  | Cortex®-M4                             |   |  |
| GD32 MCU Family | High-Performance |                                      |  |  | GD32F450<br>200MHz, 3M Flash, 512K RAM | GD32F407<br>168MHz, 3M Flash, 192K RAM  |  |
|                 |                  |                                      | GD32F205<br>120MHz, 3M Flash, 256K RAM | GD32F207<br>120MHz, 3M Flash, 256K RAM | GD32F405<br>168MHz, 3M Flash, 192K RAM | GD32F403<br>168MHz, 3M Flash, 128K RAM  |  |
|                 | Mainstream       |                                      | GD32F105<br>108MHz, 1M Flash, 96K RAM  | GD32F107<br>108MHz, 1M Flash, 96K RAM  | GD32F305<br>120MHz, 1M Flash, 96K RAM  | GD32F307<br>120MHz, 1M Flash, 96K RAM   |  |
|                 |                  |                                      | GD32F103<br>108MHz, 3M Flash, 96K RAM  | GD32F101<br>56MHz, 3M Flash, 80K RAM   | GD32F303<br>120MHz, 3M Flash, 96K RAM  | GD32E103<br>120MHz, 128K Flash, 32K RAM |  |
|                 | Entry-Level      |                                      | GD32E232<br>72MHz, 64K Flash, 8K RAM   |  |  |   |  |
|                 |                  | GD32E231<br>72MHz, 64K Flash, 8K RAM | GD32F170<br>48MHz, 64K Flash, 8K RAM   | GD32F190<br>72MHz, 64K Flash, 8K RAM   |  |   |  |
|                 |                  | GD32E230<br>72MHz, 64K Flash, 8K RAM | GD32F130<br>48MHz, 64K Flash, 8K RAM   | GD32F150<br>72MHz, 64K Flash, 8K RAM   | GD32F330<br>84MHz, 128K Flash, 16K RAM | GD32F350<br>108MHz, 128K Flash, 16K RAM |  |
| Specific        |                  |                                      |  | GD32FFPR<br>168MHz, 1M Flash, 128K RAM |  |   |  |

## MCU Package Types

|   |   |   |  |   |   |   |   |   |
|---|---|---|--|---|---|---|---|---|
| LQFP176<br>(24*24mm)  | LQFP144<br>(20*20mm)  | LQFP100<br>(14*14mm)  | LQFP64<br>(10*10mm)  | LQFP48<br>(7*7mm)   | LQFP32<br>(7*7mm)   |   |   |   |
|  |  |  |  |  |  |   |   |   |
| BGA176<br>(10*10mm)   | BGA100<br>(7*7mm)   | QFN36<br>(6*6mm)  | QFN32<br>(5*5mm)   | QFN32<br>(4*4mm)  | QFN28<br>(4*4mm)  | QFN24<br>(3*3mm)  | TSSOP20<br>(6.5*4.4mm)  | LGA20<br>(3*3mm)  |
|  |  |  |   |    |    |  |  |  |

# GD32 Development Ecosystem



# GD32V series of 32-bit RISC-V MCUs Selection Guide



| Series        | Part No.      | Max Speed (MHz) | Memory (Bytes) |          | I/O      | Timer        |                     |                  |                 |     |     | Connectivity |                  |     |          |            |                  |      | EXMC | Analog Interface |                       | Package |                 |
|---------------|---------------|-----------------|----------------|----------|----------|--------------|---------------------|------------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|------|------------------|-----------------------|---------|-----------------|
|               |               |                 | Flash          | SRAM     |          | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART+UART   | I <sup>2</sup> C | SPI | CAN 2.0B | USB 2.0 FS | I <sup>2</sup> S | SDIO |      | Ether-net        | 12bit ADC Units (CHs) |         | 12bit DAC Units |
| GD32VF103     | GD32VF103T4U6 | 108             | 16K            | 6K       | up to 26 | 2            | 1                   | 2                | 1               | 2   | 1   | 2+0          | 1                | 1   | 2        | OTG        |                  |      |      |                  | 2(10)                 | 2       | QFN36           |
|               | GD32VF103T6U6 | 108             | 32K            | 10K      | up to 26 | 2            | 1                   | 2                | 1               | 2   | 1   | 2+0          | 1                | 1   | 2        | OTG        |                  |      |      |                  | 2(10)                 | 2       | QFN36           |
|               | GD32VF103T8U6 | 108             | 64K            | 20K      | up to 26 | 4            | 1                   | 2                | 1               | 2   | 1   | 2+0          | 1                | 1   | 2        | OTG        |                  |      |      |                  | 2(10)                 | 2       | QFN36           |
|               | GD32VF103TBU6 | 108             | 128K           | 32K      | up to 26 | 4            | 1                   | 2                | 1               | 2   | 1   | 2+0          | 1                | 1   | 2        | OTG        |                  |      |      |                  | 2(10)                 | 2       | QFN36           |
|               | GD32VF103C4T6 | 108             | 16K            | 6K       | up to 37 | 2            | 1                   | 2                | 1               | 2   | 1   | 2+0          | 1                | 1   | 2        | OTG        |                  |      |      |                  | 2(10)                 | 2       | LQFP48          |
|               | GD32VF103C6T6 | 108             | 32K            | 10K      | up to 37 | 2            | 1                   | 2                | 1               | 2   | 1   | 2+0          | 1                | 1   | 2        | OTG        |                  |      |      |                  | 2(10)                 | 2       | LQFP48          |
|               | GD32VF103C8T6 | 108             | 64K            | 20K      | up to 37 | 4            | 1                   | 2                | 1               | 2   | 1   | 3+0          | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(10)                 | 2       | LQFP48          |
|               | GD32VF103CBT6 | 108             | 128K           | 32K      | up to 37 | 4            | 1                   | 2                | 1               | 2   | 1   | 3+0          | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(10)                 | 2       | LQFP48          |
|               | GD32VF103R4T6 | 108             | 16K            | 6K       | up to 51 | 2            | 1                   | 2                | 1               | 2   | 1   | 2+0          | 1                | 1   | 2        | OTG        |                  |      |      |                  | 2(16)                 | 2       | LQFP64          |
|               | GD32VF103R6T6 | 108             | 32K            | 10K      | up to 51 | 2            | 1                   | 2                | 1               | 2   | 1   | 2+0          | 1                | 1   | 2        | OTG        |                  |      |      |                  | 2(16)                 | 2       | LQFP64          |
|               | GD32VF103R8T6 | 108             | 64K            | 20K      | up to 51 | 4            | 1                   | 2                | 1               | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|               | GD32VF103RBT6 | 108             | 128K           | 32K      | up to 51 | 4            | 1                   | 2                | 1               | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|               | GD32VF103V8T6 | 108             | 64K            | 20K      | up to 80 | 4            | 1                   | 2                | 1               | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
| GD32VF103VBT6 | 108           | 128K            | 32K            | up to 80 | 4        | 1            | 2                   | 1                | 2               | 1   | 3+2 | 2            | 3                | 2   | OTG      | 2          |                  |      | •    | 2(16)            | 2                     | LQFP100 |                 |

# GD32E23x series of 32-bit ARM® Cortex®-M23 MCUs Selection Guide

| Series   | Part No.     | Max Speed (MHz) | Memory (Bytes) |      | I/O      | Timer        |              |                     |                  |                 |     | Connectivity |       |                  |     |            |                  |      | Analog Interface |                       | Package |                 |         |
|----------|--------------|-----------------|----------------|------|----------|--------------|--------------|---------------------|------------------|-----------------|-----|--------------|-------|------------------|-----|------------|------------------|------|------------------|-----------------------|---------|-----------------|---------|
|          |              |                 | Flash          | SRAM |          | GPTM (32bit) | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC          | USART | I <sup>2</sup> C | SPI | USB 2.0 FS | I <sup>2</sup> S | Comp | OP-AMP           | 12bit ADC Units (CHs) |         | 12bit DAC Units |         |
| GD32E230 | GD32E230F4P6 | 72              | 16K            | 4K   | up to 15 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 1     | 1                | 1   |            | 1                | 1    |                  |                       | 1(9)    |                 | TSSOP20 |
|          | GD32E230F6P6 | 72              | 32K            | 6K   | up to 15 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 2     | 1                | 1   |            | 1                | 1    |                  |                       | 1(9)    |                 | TSSOP20 |
|          | GD32E230F8P6 | 72              | 64K            | 8K   | up to 15 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 2     | 2                | 2   |            | 1                | 1    |                  |                       | 1(9)    |                 | TSSOP20 |
|          | GD32E230F4V6 | 72              | 16K            | 4K   | up to 15 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 1     | 1                | 1   |            | 1                | 1    |                  |                       | 1(9)    |                 | LGA20   |
|          | GD32E230F6V6 | 72              | 32K            | 6K   | up to 15 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 2     | 1                | 1   |            | 1                | 1    |                  |                       | 1(9)    |                 | LGA20   |
|          | GD32E230F8V6 | 72              | 64K            | 8K   | up to 15 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 2     | 2                | 2   |            | 1                | 1    |                  |                       | 1(9)    |                 | LGA20   |
|          | GD32E230G4U6 | 72              | 16K            | 4K   | up to 23 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 1     | 1                | 1   |            | 1                | 1    |                  |                       | 1(10)   |                 | QFN28   |
|          | GD32E230G6U6 | 72              | 32K            | 6K   | up to 23 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 2     | 1                | 1   |            | 1                | 1    |                  |                       | 1(10)   |                 | QFN28   |
|          | GD32E230G8U6 | 72              | 64K            | 8K   | up to 23 |              | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 2                | 2   |            | 1                | 1    |                  |                       | 1(10)   |                 | QFN28   |
|          | GD32E230K4U6 | 72              | 16K            | 4K   | up to 27 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 1     | 1                | 1   |            | 1                | 1    |                  |                       | 1(10)   |                 | QFN32   |
|          | GD32E230K6U6 | 72              | 32K            | 6K   | up to 27 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 2     | 1                | 1   |            | 1                | 1    |                  |                       | 1(10)   |                 | QFN32   |
|          | GD32E230K8U6 | 72              | 64K            | 8K   | up to 27 |              | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 2                | 2   |            | 1                | 1    |                  |                       | 1(10)   |                 | QFN32   |
|          | GD32E230K4T6 | 72              | 16K            | 4K   | up to 25 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 1     | 1                | 1   |            | 1                | 1    |                  |                       | 1(10)   |                 | LQFP32  |



| Series   | Part No.     | Max Speed (MHz) | Memory (Bytes) |      | I/O      | Timer        |              |                     |                  |                 |     | Connectivity |       |                  |     |            |                  | Analog Interface |        | Package |                       |                 |
|----------|--------------|-----------------|----------------|------|----------|--------------|--------------|---------------------|------------------|-----------------|-----|--------------|-------|------------------|-----|------------|------------------|------------------|--------|---------|-----------------------|-----------------|
|          |              |                 | Flash          | SRAM |          | GPTM (32bit) | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC          | USART | I <sup>2</sup> C | SPI | USB 2.0 FS | I <sup>2</sup> S | Comp             | OP-AMP |         | 12bit ADC Units (CHs) | 12bit DAC Units |
| GD32E230 | GD32E230K6T6 | 72              | 32K            | 6K   | up to 25 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 2     | 1                | 1   |            | 1                | 1                |        | 1(10)   |                       | LQFP32          |
|          | GD32E230K8T6 | 72              | 64K            | 8K   | up to 25 |              | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 2                | 2   |            | 1                | 1                |        | 1(10)   |                       | LQFP32          |
|          | GD32E230C4T6 | 72              | 16K            | 4K   | up to 39 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 1     | 1                | 1   |            | 1                | 1                |        | 1(10)   |                       | LQFP48          |
|          | GD32E230C6T6 | 72              | 32K            | 6K   | up to 39 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 2     | 1                | 1   |            | 1                | 1                |        | 1(10)   |                       | LQFP48          |
|          | GD32E230C8T6 | 72              | 64K            | 8K   | up to 39 |              | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 2                | 2   |            | 1                | 1                |        | 1(10)   |                       | LQFP48          |
| GD32E231 | GD32E231C4T6 | 72              | 16K            | 4K   | up to 39 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 1     | 1                | 1   |            | 1                | 1                | 2      | 1(10)   |                       | LQFP48          |
|          | GD32E231C6T6 | 72              | 32K            | 6K   | up to 39 |              | 4            | 1                   | 1                | 1               | 2   | 1            | 2     | 1                | 1   |            | 1                | 1                | 2      | 1(10)   |                       | LQFP48          |
|          | GD32E231C8T6 | 72              | 64K            | 8K   | up to 39 |              | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 2                | 2   |            | 1                | 1                | 2      | 1(10)   |                       | LQFP48          |
| GD32E232 | GD32E232E4U7 | 72              | 16K            | 4K   | up to 23 | 1            | 4            | 1                   | 2                | 1               | 2   | 1            | 2     | 2                | 1   |            | 1                |                  |        | 1(13)   | 4                     | QFN24           |
|          | GD32E232E6U7 | 72              | 32K            | 6K   | up to 23 | 1            | 4            | 1                   | 2                | 1               | 2   | 1            | 2     | 2                | 1   |            | 1                |                  |        | 1(13)   | 4                     | QFN24           |
|          | GD32E232E8U7 | 72              | 64K            | 8K   | up to 23 | 1            | 5            | 1                   | 2                | 1               | 2   | 1            | 2     | 2                | 2   |            | 1                |                  |        | 1(13)   | 4                     | QFN24           |
|          | GD32E232K4Q7 | 72              | 16K            | 4K   | up to 28 | 1            | 4            | 1                   | 2                | 1               | 2   | 1            | 2     | 2                | 1   |            | 1                |                  |        | 1(16)   | 4                     | QFN32           |
|          | GD32E232K6Q7 | 72              | 32K            | 6K   | up to 28 | 1            | 4            | 1                   | 2                | 1               | 2   | 1            | 2     | 2                | 1   |            | 1                |                  |        | 1(16)   | 4                     | QFN32           |
|          | GD32E232K8Q7 | 72              | 64K            | 8K   | up to 28 | 1            | 5            | 1                   | 2                | 1               | 2   | 1            | 2     | 2                | 2   |            | 1                |                  |        | 1(16)   | 4                     | QFN32           |

## GD32E1 series of 32-bit ARM® Cortex®-M4F MCUs Selection Guide



| Series   | Part No.     | Max Speed (MHz) | Memory (Bytes) |      | I/O      | Timer        |                |                |                 |     |     | Connectivity |                  |     |          |            |                  | EXMC | Analog Interface |           | Package |                       |                 |
|----------|--------------|-----------------|----------------|------|----------|--------------|----------------|----------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|------------------|-----------|---------|-----------------------|-----------------|
|          |              |                 | Flash          | SRAM |          | GPTM (16bit) | Adv TM (16bit) | Bsc TM (16bit) | SysTick (24bit) | WDG | RTC | USART +UART  | I <sup>2</sup> C | SPI | CAN 2.0B | USB 2.0 FS | I <sup>2</sup> S |      | SDIO             | Ether-net |         | 12bit ADC Units (CHs) | 12bit DAC Units |
| GD32E103 | GD32E103T8U6 | 120             | 64K            | 20K  | up to 26 | 4            | 1              | 2              | 1               | 2   | 1   | 2+0          | 1                | 1   | 2 x FD   | OTG        |                  |      |                  |           | 2(10)   | 2                     | QFN36           |
|          | GD32E103TBU6 | 120             | 128K           | 32K  | up to 26 | 4            | 1              | 2              | 1               | 2   | 1   | 2+0          | 1                | 1   | 2 x FD   | OTG        |                  |      |                  |           | 2(10)   | 2                     | QFN36           |
|          | GD32E103C8T6 | 120             | 64K            | 20K  | up to 37 | 10           | 1              | 2              | 1               | 2   | 1   | 3+0          | 2                | 3   | 2 x FD   | OTG        | 2                |      |                  |           | 2(10)   | 2                     | LQFP48          |
|          | GD32E103CBT6 | 120             | 128K           | 32K  | up to 37 | 10           | 1              | 2              | 1               | 2   | 1   | 3+0          | 2                | 3   | 2 x FD   | OTG        | 2                |      |                  |           | 2(10)   | 2                     | LQFP48          |
|          | GD32E103R8T6 | 120             | 64K            | 20K  | up to 51 | 10           | 2              | 2              | 1               | 2   | 1   | 3+2          | 2                | 3   | 2 x FD   | OTG        | 2                |      |                  |           | 2(16)   | 2                     | LQFP64          |
|          | GD32E103RBT6 | 120             | 128K           | 32K  | up to 51 | 10           | 2              | 2              | 1               | 2   | 1   | 3+2          | 2                | 3   | 2 x FD   | OTG        | 2                |      |                  |           | 2(16)   | 2                     | LQFP64          |
|          | GD32E103V8T6 | 120             | 64K            | 20K  | up to 80 | 10           | 2              | 2              | 1               | 2   | 1   | 3+2          | 2                | 3   | 2 x FD   | OTG        | 2                |      |                  | •         | 2(16)   | 2                     | LQFP100         |
|          | GD32E103VBT6 | 120             | 128K           | 32K  | up to 80 | 10           | 2              | 2              | 1               | 2   | 1   | 3+2          | 2                | 3   | 2 x FD   | OTG        | 2                |      |                  | •         | 2(16)   | 2                     | LQFP100         |

# GD32F4 series of 32-bit ARM® Cortex®-M4F MCUs Selection Guide



| Series       | Part No.     | Max Speed (MHz) | Memory (Bytes) |           | I/O       | Timer        |                |              |                |     |     | Connectivity |                  |     |          |         |                  |      |         |        |         | EXMC/SDRAM | Analog Interface |                       | Package |                 |
|--------------|--------------|-----------------|----------------|-----------|-----------|--------------|----------------|--------------|----------------|-----|-----|--------------|------------------|-----|----------|---------|------------------|------|---------|--------|---------|------------|------------------|-----------------------|---------|-----------------|
|              |              |                 | Flash          | SRAM      |           | GPTM (16bit) | Adv TM (16bit) | GPTM (32bit) | Bsc TM (16bit) | WDG | RTC | USART+UART   | I <sup>2</sup> C | SPI | CAN 2.0B | USB OTG | I <sup>2</sup> S | SDIO | LCD-TFT | Camera | ETH MAC |            | IPA              | 12bit ADC Units (CHs) |         | 12bit DAC Units |
| GD32F450     | GD32F450VET6 | 200             | 512K           | 256K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+4          | 3                | 5   | 2        | FS+HS   | 2                | 1    | 1       | 1      | 1       | 1          | 1/0              | 3(16)                 | 2       | LQFP100         |
|              | GD32F450VGT6 | 200             | 1024K          | 256K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+4          | 3                | 5   | 2        | FS+HS   | 2                | 1    | 1       | 1      | 1       | 1          | 1/0              | 3(16)                 | 2       | LQFP100         |
|              | GD32F450VIT6 | 200             | 2048K          | 512K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+4          | 3                | 5   | 2        | FS+HS   | 2                | 1    | 1       | 1      | 1       | 1          | 1/0              | 3(16)                 | 2       | LQFP100         |
|              | GD32F450VKT6 | 200             | 3072K          | 256K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+4          | 3                | 5   | 2        | FS+HS   | 2                | 1    | 1       | 1      | 1       | 1          | 1/0              | 3(16)                 | 2       | LQFP100         |
|              | GD32F450ZET6 | 200             | 512K           | 256K      | up to 114 | 8            | 2              | 2            | 2              | 2   | 1   | 4+4          | 3                | 6   | 2        | FS+HS   | 2                | 1    | 1       | 1      | 1       | 1          | 1/1              | 3(24)                 | 2       | LQFP144         |
|              | GD32F450ZGT6 | 200             | 1024K          | 256K      | up to 114 | 8            | 2              | 2            | 2              | 2   | 1   | 4+4          | 3                | 6   | 2        | FS+HS   | 2                | 1    | 1       | 1      | 1       | 1          | 1/1              | 3(24)                 | 2       | LQFP144         |
|              | GD32F450ZIT6 | 200             | 2048K          | 512K      | up to 114 | 8            | 2              | 2            | 2              | 2   | 1   | 4+4          | 3                | 6   | 2        | FS+HS   | 2                | 1    | 1       | 1      | 1       | 1          | 1/1              | 3(24)                 | 2       | LQFP144         |
|              | GD32F450ZKT6 | 200             | 3072K          | 256K      | up to 114 | 8            | 2              | 2            | 2              | 2   | 1   | 4+4          | 3                | 6   | 2        | FS+HS   | 2                | 1    | 1       | 1      | 1       | 1          | 1/1              | 3(24)                 | 2       | LQFP144         |
|              | GD32F450IGH6 | 200             | 1024K          | 256K      | up to 140 | 8            | 2              | 2            | 2              | 2   | 1   | 4+4          | 3                | 6   | 2        | FS+HS   | 2                | 1    | 1       | 1      | 1       | 1          | 1/1              | 3(24)                 | 2       | BGA176          |
|              | GD32F450IHH6 | 200             | 2048K          | 512K      | up to 140 | 8            | 2              | 2            | 2              | 2   | 1   | 4+4          | 3                | 6   | 2        | FS+HS   | 2                | 1    | 1       | 1      | 1       | 1          | 1/1              | 3(24)                 | 2       | BGA176          |
| GD32F450IKH6 | 200          | 3072K           | 256K           | up to 140 | 8         | 2            | 2              | 2            | 2              | 1   | 4+4 | 3            | 6                | 2   | FS+HS    | 2       | 1                | 1    | 1       | 1      | 1       | 1/1        | 3(24)            | 2                     | BGA176  |                 |
| GD32F405     | GD32F405RET6 | 168             | 512K           | 192K      | up to 51  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      |         |            |                  | 3(16)                 | 2       | LQFP64          |
|              | GD32F405RGT6 | 168             | 1024K          | 192K      | up to 51  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      |         |            |                  | 3(16)                 | 2       | LQFP64          |
|              | GD32F405RKT6 | 168             | 3072K          | 192K      | up to 51  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      |         |            |                  | 3(16)                 | 2       | LQFP64          |
|              | GD32F405VGT6 | 168             | 1024K          | 192K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      |         |            |                  | 3(16)                 | 2       | LQFP100         |
|              | GD32F405VKT6 | 168             | 3072K          | 192K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      |         |            |                  | 3(16)                 | 2       | LQFP100         |
|              | GD32F405VGH6 | 168             | 1024K          | 192K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      |         |            |                  | 3(16)                 | 2       | BGA100          |
|              | GD32F405VKH6 | 168             | 3072K          | 192K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      |         |            |                  | 3(16)                 | 2       | BGA100          |
|              | GD32F405ZGT6 | 168             | 1024K          | 192K      | up to 114 | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      |         |            |                  | 3(24)                 | 2       | LQFP144         |
|              | GD32F405ZKT6 | 168             | 3072K          | 192K      | up to 114 | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      |         |            |                  | 3(24)                 | 2       | LQFP144         |
| GD32F407     | GD32F407RET6 | 168             | 512K           | 192K      | up to 51  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            |                  | 3(16)                 | 2       | LQFP64          |
|              | GD32F407RGT6 | 168             | 1024K          | 192K      | up to 51  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            |                  | 3(16)                 | 2       | LQFP64          |
|              | GD32F407RKT6 | 168             | 3072K          | 192K      | up to 51  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            |                  | 3(16)                 | 2       | LQFP64          |
|              | GD32F407VET6 | 168             | 512K           | 192K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            | 1/0              | 3(16)                 | 2       | LQFP100         |
|              | GD32F407VGT6 | 168             | 1024K          | 192K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            | 1/0              | 3(16)                 | 2       | LQFP100         |
|              | GD32F407VKT6 | 168             | 3072K          | 192K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            | 1/0              | 3(16)                 | 2       | LQFP100         |
|              | GD32F407VEH6 | 168             | 512K           | 192K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            | 1/0              | 3(16)                 | 2       | BGA100          |
|              | GD32F407VGH6 | 168             | 1024K          | 192K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            | 1/0              | 3(16)                 | 2       | BGA100          |
|              | GD32F407VKH6 | 168             | 3072K          | 192K      | up to 82  | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            | 1/0              | 3(16)                 | 2       | BGA100          |
|              | GD32F407ZET6 | 168             | 512K           | 192K      | up to 114 | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            | 1/1              | 3(24)                 | 2       | LQFP144         |
|              | GD32F407ZGT6 | 168             | 1024K          | 192K      | up to 114 | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            | 1/1              | 3(24)                 | 2       | LQFP144         |
|              | GD32F407ZKT6 | 168             | 3072K          | 192K      | up to 114 | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            | 1/1              | 3(24)                 | 2       | LQFP144         |
|              | GD32F407IEH6 | 168             | 512K           | 192K      | up to 140 | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            | 1/1              | 3(24)                 | 2       | BGA176          |
|              | GD32F407IGH6 | 168             | 1024K          | 192K      | up to 140 | 8            | 2              | 2            | 2              | 2   | 1   | 4+2          | 3                | 3   | 2        | FS+HS   | 2                | 1    |         | 1      | 1       |            | 1/1              | 3(24)                 | 2       | BGA176          |
| GD32F407IKH6 | 168          | 3072K           | 192K           | up to 140 | 8         | 2            | 2              | 2            | 2              | 1   | 4+2 | 3            | 3                | 2   | FS+HS    | 2       | 1                |      | 1       | 1      |         | 1/1        | 3(24)            | 2                     | BGA176  |                 |

| Series   | Part No.     | Max Speed (MHz) | Memory (Bytes) |      | I/O       | Timer        |                |              |                |     |     | Connectivity |                  |     |          |         |                  |      |         |         |         | EXMC/SDRAM | Analog Interface |                       | Package |                 |         |
|----------|--------------|-----------------|----------------|------|-----------|--------------|----------------|--------------|----------------|-----|-----|--------------|------------------|-----|----------|---------|------------------|------|---------|---------|---------|------------|------------------|-----------------------|---------|-----------------|---------|
|          |              |                 | Flash          | SRAM |           | GPTM (16bit) | Adv TM (16bit) | GPTM (32bit) | Bsc TM (16bit) | WDG | RTC | USART +UART  | I <sup>2</sup> C | SPI | CAN 2.0B | USB OTG | I <sup>2</sup> S | SDIO | LCD-TFT | Cam era | ETH MAC |            | IPA              | 12bit ADC Units (Chs) |         | 12bit DAC Units |         |
| GD32F403 | GD32F403RCT6 | 168             | 256K           | 64K  | up to 51  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 0/0                   | 3(16)   | 2               | LQFP64  |
|          | GD32F403RET6 | 168             | 512K           | 96K  | up to 51  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 0/0                   | 3(16)   | 2               | LQFP64  |
|          | GD32F403RGT6 | 168             | 1024K          | 128K | up to 51  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 0/0                   | 3(16)   | 2               | LQFP64  |
|          | GD32F403RIT6 | 168             | 2048K          | 128K | up to 51  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 0/0                   | 3(16)   | 2               | LQFP64  |
|          | GD32F403RKT6 | 168             | 3072K          | 128K | up to 51  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 0/0                   | 3(16)   | 2               | LQFP64  |
|          | GD32F403VCT6 | 168             | 256K           | 64K  | up to 80  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(16)   | 2               | LQFP100 |
|          | GD32F403VET6 | 168             | 512K           | 96K  | up to 80  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(16)   | 2               | LQFP100 |
|          | GD32F403VGT6 | 168             | 1024K          | 128K | up to 80  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(16)   | 2               | LQFP100 |
|          | GD32F403VIT6 | 168             | 2048K          | 128K | up to 80  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(16)   | 2               | LQFP100 |
|          | GD32F403VKT6 | 168             | 3072K          | 128K | up to 80  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(16)   | 2               | LQFP100 |
|          | GD32F403VCH6 | 168             | 256K           | 64K  | up to 80  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(16)   | 2               | BGA100  |
|          | GD32F403VEH6 | 168             | 512K           | 96K  | up to 80  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(16)   | 2               | BGA100  |
|          | GD32F403VGH6 | 168             | 1024K          | 128K | up to 80  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(16)   | 2               | BGA100  |
|          | GD32F403VIH6 | 168             | 2048K          | 128K | up to 80  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(16)   | 2               | BGA100  |
|          | GD32F403VKH6 | 168             | 3072K          | 128K | up to 80  | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(16)   | 2               | BGA100  |
|          | GD32F403ZCT6 | 168             | 256K           | 64K  | up to 112 | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(21)   | 2               | LQFP144 |
|          | GD32F403ZET6 | 168             | 512K           | 96K  | up to 112 | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(21)   | 2               | LQFP144 |
|          | GD32F403ZGT6 | 168             | 1024K          | 128K | up to 112 | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(21)   | 2               | LQFP144 |
|          | GD32F403ZIT6 | 168             | 2048K          | 128K | up to 112 | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(21)   | 2               | LQFP144 |
|          | GD32F403ZKT6 | 168             | 3072K          | 128K | up to 112 | 8            | 2              |              | 2              | 2   | 1   | 3+2          | 2                | 3   | 2        | OTG     | 2                | 1    |         |         |         |            |                  | 1/0                   | 3(21)   | 2               | LQFP144 |

## GD32F3 series of 32-bit ARM® Cortex®-M4 MCUs Selection Guide



| Series   | Part No.     | Max Speed (MHz) | Memory (Bytes) |      | I/O       | Timer        |                     |                  |                 |     |     | Connectivity |                  |     |          |            |                  |      |           | EXMC | Analog Interface      |                 | Package |       |   |         |
|----------|--------------|-----------------|----------------|------|-----------|--------------|---------------------|------------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|-----------|------|-----------------------|-----------------|---------|-------|---|---------|
|          |              |                 | Flash          | SRAM |           | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART +UART  | I <sup>2</sup> C | SPI | CAN 2.0B | USB 2.0 FS | I <sup>2</sup> S | SDIO | Ether-net |      | 12bit ADC Units (Chs) | 12bit DAC Units |         |       |   |         |
| GD32F303 | GD32F303CCT6 | 120             | 256K           | 48K  | up to 37  | 4            | 1                   | 2                | 1               | 2   | 1   | 3            | 2                | 3   | 1        | 1          | 2                |      |           |      |                       |                 |         | 3(10) | 2 | LQFP48  |
|          | GD32F303CET6 | 120             | 512K           | 64K  | up to 37  | 4            | 1                   | 2                | 1               | 2   | 1   | 3            | 2                | 3   | 1        | 1          | 2                |      |           |      |                       |                 |         | 3(10) | 2 | LQFP48  |
|          | GD32F303CGT6 | 120             | 1024K          | 96K  | up to 37  | 10           | 1                   | 2                | 1               | 2   | 1   | 3            | 2                | 3   | 1        | 1          | 2                |      |           |      |                       |                 |         | 3(10) | 2 | LQFP48  |
|          | GD32F303RCT6 | 120             | 256K           | 48K  | up to 51  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(16) | 2 | LQFP64  |
|          | GD32F303RET6 | 120             | 512K           | 64K  | up to 51  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(16) | 2 | LQFP64  |
|          | GD32F303RGT6 | 120             | 1024K          | 96K  | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(16) | 2 | LQFP64  |
|          | GD32F303RIT6 | 120             | 2048K          | 96K  | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(16) | 2 | LQFP64  |
|          | GD32F303RKT6 | 120             | 3072K          | 96K  | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(16) | 2 | LQFP64  |
|          | GD32F303VCT6 | 120             | 256K           | 48K  | up to 80  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(16) | 2 | LQFP100 |
|          | GD32F303VET6 | 120             | 512K           | 64K  | up to 80  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(16) | 2 | LQFP100 |
|          | GD32F303VGT6 | 120             | 1024K          | 96K  | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(16) | 2 | LQFP100 |
|          | GD32F303VIT6 | 120             | 2048K          | 96K  | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(16) | 2 | LQFP100 |
|          | GD32F303VKT6 | 120             | 3072K          | 96K  | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(16) | 2 | LQFP100 |
|          | GD32F303ZCT6 | 120             | 256K           | 48K  | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(21) | 2 | LQFP144 |
|          | GD32F303ZET6 | 120             | 512K           | 64K  | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(21) | 2 | LQFP144 |
|          | GD32F303ZGT6 | 120             | 1024K          | 96K  | up to 112 | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(21) | 2 | LQFP144 |
|          | GD32F303ZIT6 | 120             | 2048K          | 96K  | up to 112 | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(21) | 2 | LQFP144 |
|          | GD32F303ZKT6 | 120             | 3072K          | 96K  | up to 112 | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |           |      |                       |                 |         | 3(21) | 2 | LQFP144 |

# GD32F3 series of 32-bit ARM® Cortex®-M4 MCUs Selection Guide



| Series       | Part No.     | Max Speed (MHz) | Memory (Bytes) |           | I/O       | Timer        |                     |                  |                 |     |     | Connectivity |                  |     |          |            |                  |      | EXMC | Analog Interface |                       | Package |                 |
|--------------|--------------|-----------------|----------------|-----------|-----------|--------------|---------------------|------------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|------|------------------|-----------------------|---------|-----------------|
|              |              |                 | Flash          | SRAM      |           | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART +UART  | I <sup>2</sup> C | SPI | CAN 2.0B | USB 2.0 FS | I <sup>2</sup> S | SDIO |      | Ether-net        | 12bit ADC Units (CHs) |         | 12bit DAC Units |
| GD32F305     | GD32F305RBT6 | 120             | 128K           | 64K       | up to 51  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F305RCT6 | 120             | 256K           | 96K       | up to 51  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F305RET6 | 120             | 512K           | 96K       | up to 51  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F305RGT6 | 120             | 1024K          | 96K       | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F305VCT6 | 120             | 256K           | 96K       | up to 80  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F305VET6 | 120             | 512K           | 96K       | up to 80  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F305VGT6 | 120             | 1024K          | 96K       | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F305ZCT6 | 120             | 256K           | 96K       | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP144         |
|              | GD32F305ZET6 | 120             | 512K           | 96K       | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP144         |
| GD32F307     | GD32F307ZGT6 | 120             | 1024K          | 96K       | up to 112 | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP144         |
|              | GD32F307RCT6 | 120             | 256K           | 96K       | up to 51  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP64          |
|              | GD32F307RET6 | 120             | 512K           | 96K       | up to 51  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP64          |
|              | GD32F307RGT6 | 120             | 1024K          | 96K       | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP64          |
|              | GD32F307VCT6 | 120             | 256K           | 96K       | up to 80  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F307VET6 | 120             | 512K           | 96K       | up to 80  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F307VGT6 | 120             | 1024K          | 96K       | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F307ZCT6 | 120             | 256K           | 96K       | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP144         |
|              | GD32F307ZET6 | 120             | 512K           | 96K       | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP144         |
| GD32F307ZGT6 | 120          | 1024K           | 96K            | up to 112 | 10        | 2            | 2                   | 1                | 2               | 1   | 5   | 2            | 3                | 2   | OTG      | 2          |                  |      | •    | 2(16)            | 2                     | LQFP144 |                 |

| Series   | Part No.     | Max Speed (MHz) | Memory (Bytes) |      | I/O      | Timer        |              |                     |                  |                 |     | Connectivity |       |                  |     |            |                  |     | Analog Interface |                       | Package |                 |         |
|----------|--------------|-----------------|----------------|------|----------|--------------|--------------|---------------------|------------------|-----------------|-----|--------------|-------|------------------|-----|------------|------------------|-----|------------------|-----------------------|---------|-----------------|---------|
|          |              |                 | Flash          | SRAM |          | GPTM (32bit) | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC          | USART | I <sup>2</sup> C | SPI | USB 2.0 FS | I <sup>2</sup> S | CEC | Comp             | 12bit ADC Units (CHs) |         | 12bit DAC Units |         |
| GD32F330 | GD32F330F4P6 | 84              | 16K            | 4K   | up to 15 | 1            | 4            | 1                   |                  |                 | 1   | 2            | 1     | 1                | 1   | 1          |                  |     |                  |                       | 1(9)    |                 | TSSOP20 |
|          | GD32F330F6P6 | 84              | 32K            | 4K   | up to 15 | 1            | 4            | 1                   |                  |                 | 1   | 2            | 1     | 2                | 1   | 1          |                  |     |                  |                       | 1(9)    |                 | TSSOP20 |
|          | GD32F330F8P6 | 84              | 64K            | 8K   | up to 15 | 1            | 4            | 1                   |                  |                 | 1   | 2            | 1     | 2                | 2   | 2          |                  |     |                  |                       | 1(9)    |                 | TSSOP20 |
|          | GD32F330G4U6 | 84              | 16K            | 4K   | up to 23 | 1            | 4            | 1                   |                  |                 | 1   | 2            | 1     | 1                | 1   | 1          |                  |     |                  |                       | 1(10)   |                 | QFN28   |
|          | GD32F330G6U6 | 84              | 32K            | 4K   | up to 23 | 1            | 4            | 1                   |                  |                 | 1   | 2            | 1     | 2                | 1   | 1          |                  |     |                  |                       | 1(10)   |                 | QFN28   |
|          | GD32F330G8U6 | 84              | 64K            | 8K   | up to 23 | 1            | 5            | 1                   |                  |                 | 1   | 2            | 1     | 2                | 2   | 2          |                  |     |                  |                       | 1(10)   |                 | QFN28   |
|          | GD32F330K4U6 | 84              | 16K            | 4K   | up to 27 | 1            | 4            | 1                   |                  |                 | 1   | 2            | 1     | 1                | 1   | 1          |                  |     |                  |                       | 1(10)   |                 | QFN32   |
|          | GD32F330K6U6 | 84              | 32K            | 4K   | up to 27 | 1            | 4            | 1                   |                  |                 | 1   | 2            | 1     | 2                | 1   | 1          |                  |     |                  |                       | 1(10)   |                 | QFN32   |
|          | GD32F330K8U6 | 84              | 64K            | 8K   | up to 27 | 1            | 5            | 1                   |                  |                 | 1   | 2            | 1     | 2                | 2   | 2          |                  |     |                  |                       | 1(10)   |                 | QFN32   |
|          | GD32F330C4T6 | 84              | 16K            | 4K   | up to 39 | 1            | 4            | 1                   |                  |                 | 1   | 2            | 1     | 1                | 1   | 1          |                  |     |                  |                       | 1(10)   |                 | LQFP48  |
|          | GD32F330C6T6 | 84              | 32K            | 4K   | up to 39 | 1            | 4            | 1                   |                  |                 | 1   | 2            | 1     | 2                | 1   | 1          |                  |     |                  |                       | 1(10)   |                 | LQFP48  |
|          | GD32F330C8T6 | 84              | 64K            | 8K   | up to 39 | 1            | 5            | 1                   |                  |                 | 1   | 2            | 1     | 2                | 2   | 2          |                  |     |                  |                       | 1(10)   |                 | LQFP48  |
|          | GD32F330CBT6 | 84              | 128K           | 16K  | up to 39 | 1            | 5            | 1                   |                  |                 | 1   | 2            | 1     | 2                | 2   | 2          |                  |     |                  |                       | 1(10)   |                 | LQFP48  |
|          | GD32F330R8T6 | 84              | 64K            | 16K  | up to 55 | 1            | 5            | 1                   |                  |                 | 1   | 2            | 1     | 2                | 2   | 2          |                  |     |                  |                       | 1(16)   |                 | LQFP64  |
|          | GD32F330RBT6 | 84              | 128K           | 16K  | up to 55 | 1            | 5            | 1                   |                  |                 | 1   | 2            | 1     | 2                | 2   | 2          |                  |     |                  |                       | 1(16)   |                 | LQFP64  |





# GD32F1 series of 32-bit ARM® Cortex®-M3 MCUs Selection Guide



| Series       | Part No.     | Max Speed (MHz) | Memory (Bytes) |          | I/O      | Timer        |              |                     |                  |                 |     | Connectivity |       |     |     |            |     | Analog Interface |                       | Package |                 |       |        |         |
|--------------|--------------|-----------------|----------------|----------|----------|--------------|--------------|---------------------|------------------|-----------------|-----|--------------|-------|-----|-----|------------|-----|------------------|-----------------------|---------|-----------------|-------|--------|---------|
|              |              |                 | Flash          | SRAM     |          | GPTM (32bit) | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC          | USART | I²C | SPI | USB 2.0 FS | I²S | CEC              | 12bit ADC Units (CHs) |         | 12bit DAC Units |       |        |         |
| GD32F130     | GD32F130F4P6 | 48              | 16K            | 4K       | up to 15 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 1     | 1   | 1   |            |     |                  |                       |         |                 | 1(9)  |        | TSSOP20 |
|              | GD32F130F6P6 | 48              | 32K            | 4K       | up to 15 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 2     | 1   | 1   |            |     |                  |                       |         |                 | 1(9)  |        | TSSOP20 |
|              | GD32F130F8P6 | 48              | 64K            | 8K       | up to 15 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 2     | 2   | 2   |            |     |                  |                       |         |                 | 1(9)  |        | TSSOP20 |
|              | GD32F130G4U6 | 48              | 16K            | 4K       | up to 23 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 1     | 1   | 1   |            |     |                  |                       |         |                 | 1(10) |        | QFN28   |
|              | GD32F130G6U6 | 48              | 32K            | 4K       | up to 23 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 2     | 1   | 1   |            |     |                  |                       |         |                 | 1(10) |        | QFN28   |
|              | GD32F130G8U6 | 48              | 64K            | 8K       | up to 23 | 1            | 5            | 1                   |                  | 1               | 2   | 1            | 2     | 2   | 2   |            |     |                  |                       |         |                 | 1(10) |        | QFN28   |
|              | GD32F130K4T6 | 48              | 16K            | 4K       | up to 27 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 1     | 1   | 1   |            |     |                  |                       |         |                 | 1(10) |        | QFN32   |
|              | GD32F130K6T6 | 48              | 32K            | 4K       | up to 27 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 2     | 1   | 1   |            |     |                  |                       |         |                 | 1(10) |        | QFN32   |
|              | GD32F130K8T6 | 48              | 64K            | 8K       | up to 27 | 1            | 5            | 1                   |                  | 1               | 2   | 1            | 2     | 2   | 2   |            |     |                  |                       |         |                 | 1(10) |        | QFN32   |
|              | GD32F130K4U6 | 48              | 16K            | 4K       | up to 27 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 1     | 1   | 1   |            |     |                  |                       |         |                 | 1(10) |        | QFN32   |
|              | GD32F130K6U6 | 48              | 32K            | 4K       | up to 27 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 2     | 1   | 1   |            |     |                  |                       |         |                 | 1(10) |        | QFN32   |
|              | GD32F130K8U6 | 48              | 64K            | 8K       | up to 27 | 1            | 5            | 1                   |                  | 1               | 2   | 1            | 2     | 2   | 2   |            |     |                  |                       |         |                 | 1(10) |        | QFN32   |
|              | GD32F130C4T6 | 48              | 16K            | 4K       | up to 39 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 1     | 1   | 1   |            |     |                  |                       |         |                 | 1(10) |        | LQFP48  |
|              | GD32F130C6T6 | 48              | 32K            | 4K       | up to 39 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 2     | 1   | 1   |            |     |                  |                       |         |                 | 1(10) |        | LQFP48  |
| GD32F130C8T6 | 48           | 64K             | 8K             | up to 39 | 1        | 5            | 1            |                     | 1                | 2               | 1   | 2            | 2     | 2   |     |            |     |                  |                       |         | 1(10)           |       | LQFP48 |         |
| GD32F130R8T6 | 48           | 64K             | 8K             | up to 55 | 1        | 5            | 1            |                     | 1                | 2               | 1   | 2            | 2     | 2   |     |            |     |                  |                       |         | 1(16)           |       | LQFP64 |         |
| GD32F150     | GD32F150G4U6 | 72              | 16K            | 4K       | up to 24 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 1     | 1   | 1   | 1          | 1   | 1                | 1                     | 1       | 1               | 1(10) | 1      | QFN28   |
|              | GD32F150G6U6 | 72              | 32K            | 6K       | up to 24 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 1   | 1   | 1          | 1   | 1                | 1                     | 1       | 1               | 1(10) | 1      | QFN28   |
|              | GD32F150G8U6 | 72              | 64K            | 8K       | up to 24 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 2   | 2   | 1          | 1   | 1                | 1                     | 1       | 1               | 1(10) | 1      | QFN28   |
|              | GD32F150K4U6 | 72              | 16K            | 4K       | up to 27 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 1     | 1   | 1   | 1          | 1   | 1                | 1                     | 1       | 1               | 1(10) | 1      | QFN32   |
|              | GD32F150K6U6 | 72              | 32K            | 6K       | up to 27 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 1   | 1   | 1          | 1   | 1                | 1                     | 1       | 1               | 1(10) | 1      | QFN32   |
|              | GD32F150K8U6 | 72              | 64K            | 8K       | up to 27 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 2   | 2   | 1          | 1   | 1                | 1                     | 1       | 1               | 1(10) | 1      | QFN32   |
|              | GD32F150C4T6 | 72              | 16K            | 4K       | up to 39 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 1     | 1   | 1   | 1          | 1   | 1                | 1                     | 1       | 1               | 1(10) | 1      | LQFP48  |
|              | GD32F150C6T6 | 72              | 32K            | 6K       | up to 39 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 1   | 1   | 1          | 1   | 1                | 1                     | 1       | 1               | 1(10) | 1      | LQFP48  |
|              | GD32F150C8T6 | 72              | 64K            | 8K       | up to 39 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 2   | 2   | 1          | 1   | 1                | 1                     | 1       | 1               | 1(10) | 1      | LQFP48  |
|              | GD32F150R4T6 | 72              | 16K            | 4K       | up to 55 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 1     | 1   | 1   | 1          | 1   | 1                | 1                     | 1       | 1               | 1(16) | 1      | LQFP64  |
|              | GD32F150R6T6 | 72              | 32K            | 6K       | up to 55 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 1   | 1   | 1          | 1   | 1                | 1                     | 1       | 1               | 1(16) | 1      | LQFP64  |
|              | GD32F150R8T6 | 72              | 64K            | 8K       | up to 55 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 2     | 2   | 2   | 1          | 1   | 1                | 1                     | 1       | 1               | 1(16) | 1      | LQFP64  |

| Series       | Part No.     | Max Speed (MHz) | Memory (Bytes) |          | I/O      | Timer        |              |                     |                  |                 |     | Connectivity |       |     |     |          |      |     | Analog Interface |      | Package |                       |                 |       |        |        |
|--------------|--------------|-----------------|----------------|----------|----------|--------------|--------------|---------------------|------------------|-----------------|-----|--------------|-------|-----|-----|----------|------|-----|------------------|------|---------|-----------------------|-----------------|-------|--------|--------|
|              |              |                 | Flash          | SRAM     |          | GPTM (32bit) | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC          | USART | I²C | SPI | CAN 2.0B | I²S  | LCD | OP-amp           | Comp |         | 12bit ADC Units (CHs) | 12bit DAC Units |       |        |        |
| GD32F170     | GD32F170T4U6 | 48              | 16K            | 4K       | up to 28 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 1     | 1   | 1   | 2        |      |     |                  |      |         |                       |                 | 1(10) |        | QFN36  |
|              | GD32F170T6U6 | 48              | 32K            | 4K       | up to 28 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 2     | 1   | 2   |          |      |     |                  |      |         |                       |                 | 1(10) |        | QFN36  |
|              | GD32F170T8U6 | 48              | 64K            | 8K       | up to 28 | 1            | 5            | 1                   |                  | 1               | 2   | 1            | 2     | 3   | 3   | 2        |      |     |                  |      |         |                       |                 | 1(10) |        | QFN36  |
|              | GD32F170C4T6 | 48              | 16K            | 4K       | up to 39 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 1     | 1   | 1   | 2        |      |     |                  |      |         |                       |                 | 1(10) |        | LQFP48 |
|              | GD32F170C6T6 | 48              | 32K            | 4K       | up to 39 | 1            | 4            | 1                   |                  | 1               | 2   | 1            | 2     | 1   | 1   | 2        |      |     |                  |      |         |                       |                 | 1(10) |        | LQFP48 |
|              | GD32F170C8T6 | 48              | 64K            | 8K       | up to 39 | 1            | 5            | 1                   |                  | 1               | 2   | 1            | 2     | 3   | 3   | 2        |      |     |                  |      |         |                       |                 | 1(10) |        | LQFP48 |
|              | GD32F170R8T6 | 48              | 64K            | 8K       | up to 55 | 1            | 5            | 1                   |                  | 1               | 2   | 1            | 2     | 3   | 3   | 2        |      |     |                  |      |         |                       |                 | 1(16) |        | LQFP64 |
|              | GD32F190T4U6 | 72              | 16K            | 4K       | up to 28 | 1            | 5            | 1                   | 1                | 1               | 2   | 1            | 1     | 1   | 1   | 2        | 1    |     |                  | 2    | 2       |                       |                 | 1(10) | 2      | QFN36  |
| GD32F190T6U6 | 72           | 32K             | 6K             | up to 28 | 1        | 5            | 1            | 1                   | 1                | 2               | 1   | 2            | 1     | 1   | 2   | 1        |      |     | 2                | 2    |         |                       | 1(10)           | 2     | QFN36  |        |
| GD32F190T8U6 | 72           | 64K             | 8K             | up to 28 | 1        | 5            | 1            | 1                   | 1                | 2               | 1   | 2            | 3     | 3   | 2   | 2        |      |     | 2                | 2    |         |                       | 1(10)           | 2     | QFN36  |        |
| GD32F190C4T6 | 72           | 16K             | 4K             | up to 39 | 1        | 5            | 1            | 1                   | 1                | 2               | 1   | 1            | 1     | 1   | 2   | 1        | 4x18 |     | 2                | 2    |         |                       | 1(10)           | 2     | LQFP48 |        |
| GD32F190C6T6 | 72           | 32K             | 6K             | up to 39 | 1        | 5            | 1            | 1                   | 1                | 2               | 1   | 2            | 1     | 1   | 2   | 1        | 4x18 |     | 2                | 2    |         |                       | 1(10)           | 2     | LQFP48 |        |
| GD32F190C8T6 | 72           | 64K             | 8K             | up to 39 | 1        | 5            | 1            | 1                   | 1                | 2               | 1   | 2            | 3     | 3   | 2   | 2        | 4x18 |     | 2                | 2    |         |                       | 1(10)           | 2     | LQFP48 |        |
| GD32F190R4T6 | 72           | 16K             | 4K             | up to 55 | 1        | 5            | 1            | 1                   | 1                | 2               | 1   | 1            | 1     | 1   | 2   | 1        | 8x32 |     | 3                | 2    |         |                       | 1(16)           | 2     | LQFP64 |        |
| GD32F190R6T6 | 72           | 32K             | 6K             | up to 55 | 1        | 5            | 1            | 1                   | 1                | 2               | 1   | 2            | 1     | 1   | 2   | 1        | 8x32 |     | 3                | 2    |         |                       | 1(16)           | 2     | LQFP64 |        |
| GD32F190R8T6 | 72           | 64K             | 8K             | up to 55 | 1        | 5            | 1            | 1                   | 1                | 2               | 1   | 2            | 3     | 3   | 2   | 2        | 8x32 |     | 3                | 2    |         |                       | 1(16)           | 2     | LQFP64 |        |

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| Series       | Part No.     | Max Speed (MHz) | Memory (Bytes) |           | I/O       | Timer        |                     |                  |                 |     |     | Connectivity |                  |     |          |            |                  | EXMC | Analog Interface |           | Package |                       |                 |
|--------------|--------------|-----------------|----------------|-----------|-----------|--------------|---------------------|------------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|------------------|-----------|---------|-----------------------|-----------------|
|              |              |                 | Flash          | SRAM      |           | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART (UART) | I <sup>2</sup> C | SPI | CAN 2.0B | USB 2.0 FS | I <sup>2</sup> S |      | SDIO             | Ether-net |         | 12bit ADC Units (CHs) | 12bit DAC Units |
| GD32F103     | GD32F103T4U6 | 108             | 16K            | 6K        | up to 26  | 2            | 1                   |                  | 1               | 2   | 1   | 2            | 1                | 1   | 1        | 1          |                  |      |                  |           | 2(10)   |                       | QFN36           |
|              | GD32F103T6U6 | 108             | 32K            | 10K       | up to 26  | 2            | 1                   |                  | 1               | 2   | 1   | 2            | 1                | 1   | 1        | 1          |                  |      |                  |           | 2(10)   |                       | QFN36           |
|              | GD32F103T8U6 | 108             | 64K            | 20K       | up to 26  | 3            | 1                   |                  | 1               | 2   | 1   | 2            | 1                | 1   | 1        | 1          |                  |      |                  |           | 2(10)   |                       | QFN36           |
|              | GD32F103TBU6 | 108             | 128K           | 20K       | up to 26  | 3            | 1                   |                  | 1               | 2   | 1   | 2            | 1                | 1   | 1        | 1          |                  |      |                  |           | 2(10)   |                       | QFN36           |
|              | GD32F103C4T6 | 108             | 16K            | 6K        | up to 37  | 2            | 1                   |                  | 1               | 2   | 1   | 2            | 1                | 1   | 1        | 1          |                  |      |                  |           | 2(10)   |                       | LQFP48          |
|              | GD32F103C6T6 | 108             | 32K            | 10K       | up to 37  | 2            | 1                   |                  | 1               | 2   | 1   | 2            | 1                | 1   | 1        | 1          |                  |      |                  |           | 2(10)   |                       | LQFP48          |
|              | GD32F103C8T6 | 108             | 64K            | 20K       | up to 37  | 3            | 1                   |                  | 1               | 2   | 1   | 3            | 2                | 2   | 1        | 1          |                  |      |                  |           | 2(10)   |                       | LQFP48          |
|              | GD32F103CBT6 | 108             | 128K           | 20K       | up to 37  | 3            | 1                   |                  | 1               | 2   | 1   | 3            | 2                | 2   | 1        | 1          |                  |      |                  |           | 2(10)   |                       | LQFP48          |
|              | GD32F103R4T6 | 108             | 16K            | 6K        | up to 51  | 2            | 1                   |                  | 1               | 2   | 1   | 2            | 1                | 1   | 1        | 1          |                  |      |                  |           | 2(16)   |                       | LQFP64          |
|              | GD32F103R6T6 | 108             | 32K            | 10K       | up to 51  | 2            | 1                   |                  | 1               | 2   | 1   | 2            | 1                | 1   | 1        | 1          |                  |      |                  |           | 2(16)   |                       | LQFP64          |
|              | GD32F103R8T6 | 108             | 64K            | 20K       | up to 51  | 3            | 1                   |                  | 1               | 2   | 1   | 3            | 2                | 2   | 1        | 1          |                  |      |                  |           | 2(16)   |                       | LQFP64          |
|              | GD32F103RBT6 | 108             | 128K           | 20K       | up to 51  | 3            | 1                   |                  | 1               | 2   | 1   | 3            | 2                | 2   | 1        | 1          |                  |      |                  |           | 2(16)   |                       | LQFP64          |
|              | GD32F103RCT6 | 108             | 256K           | 48K       | up to 51  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  |           | 3(16)   | 2                     | LQFP64          |
|              | GD32F103RDT6 | 108             | 384K           | 64K       | up to 51  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  |           | 3(16)   | 2                     | LQFP64          |
|              | GD32F103RET6 | 108             | 512K           | 64K       | up to 51  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  |           | 3(16)   | 2                     | LQFP64          |
|              | GD32F103RFT6 | 108             | 768K           | 96K       | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  |           | 3(16)   | 2                     | LQFP64          |
|              | GD32F103RGT6 | 108             | 1024K          | 96K       | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  |           | 3(16)   | 2                     | LQFP64          |
|              | GD32F103RIT6 | 108             | 2048K          | 96K       | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  |           | 3(16)   | 2                     | LQFP64          |
|              | GD32F103RKT6 | 108             | 3072K          | 96K       | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  |           | 3(16)   | 2                     | LQFP64          |
|              | GD32F103V8T6 | 108             | 64K            | 20K       | up to 80  | 3            | 1                   |                  | 1               | 2   | 1   | 3            | 2                | 2   | 1        | 1          |                  |      |                  | •         | 2(16)   |                       | LQFP100         |
|              | GD32F103VBT6 | 108             | 128K           | 20K       | up to 80  | 3            | 1                   |                  | 1               | 2   | 1   | 3            | 2                | 2   | 1        | 1          |                  |      |                  | •         | 2(16)   |                       | LQFP100         |
|              | GD32F103VCT6 | 108             | 256K           | 48K       | up to 80  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  | •         | 3(16)   | 2                     | LQFP100         |
|              | GD32F103VDT6 | 108             | 384K           | 64K       | up to 80  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  | •         | 3(16)   | 2                     | LQFP100         |
|              | GD32F103VET6 | 108             | 512K           | 64K       | up to 80  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  | •         | 3(16)   | 2                     | LQFP100         |
|              | GD32F103VFT6 | 108             | 768K           | 96K       | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  | •         | 3(16)   | 2                     | LQFP100         |
|              | GD32F103VGT6 | 108             | 1024K          | 96K       | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  | •         | 3(16)   | 2                     | LQFP100         |
|              | GD32F103VIT6 | 108             | 2048K          | 96K       | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  | •         | 3(16)   | 2                     | LQFP100         |
|              | GD32F103VKT6 | 108             | 3072K          | 96K       | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  | •         | 3(16)   | 2                     | LQFP100         |
|              | GD32F103ZCT6 | 108             | 256K           | 48K       | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  | •         | 3(21)   | 2                     | LQFP144         |
|              | GD32F103ZDT6 | 108             | 384K           | 64K       | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  | •         | 3(21)   | 2                     | LQFP144         |
|              | GD32F103ZET6 | 108             | 512K           | 64K       | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  | •         | 3(21)   | 2                     | LQFP144         |
|              | GD32F103ZFT6 | 108             | 768K           | 96K       | up to 112 | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 1        | 1          | 2                | 1    |                  | •         | 3(21)   | 2                     | LQFP144         |
| GD32F103ZGT6 | 108          | 1024K           | 96K            | up to 112 | 10        | 2            | 2                   | 1                | 2               | 1   | 5   | 2            | 3                | 1   | 1        | 2          | 1                |      | •                | 3(21)     | 2       | LQFP144               |                 |
| GD32F103ZIT6 | 108          | 2048K           | 96K            | up to 112 | 10        | 2            | 2                   | 1                | 2               | 1   | 5   | 2            | 3                | 1   | 1        | 2          | 1                |      | •                | 3(21)     | 2       | LQFP144               |                 |
| GD32F103ZKT6 | 108          | 3072K           | 96K            | up to 112 | 10        | 2            | 2                   | 1                | 2               | 1   | 5   | 2            | 3                | 1   | 1        | 2          | 1                |      | •                | 3(21)     | 2       | LQFP144               |                 |

# GD32F1 series of 32-bit ARM® Cortex®-M3 MCUs Selection Guide



| Series       | Part No.     | Max Speed (MHz) | Memory (Bytes) |           | I/O       | Timer        |                     |                  |                 |     |     | Connectivity |                  |     |          |            |                  |      | EXMC | Analog Interface |                       | Package |                 |
|--------------|--------------|-----------------|----------------|-----------|-----------|--------------|---------------------|------------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|------|------------------|-----------------------|---------|-----------------|
|              |              |                 | Flash          | SRAM      |           | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART (UART) | I <sup>2</sup> C | SPI | CAN 2.0B | USB 2.0 FS | I <sup>2</sup> S | SDIO |      | Ether-net        | 12bit ADC Units (CHs) |         | 12bit DAC Units |
| GD32F105     | GD32F105R8T6 | 108             | 64K            | 64K       | up to 51  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F105RBT6 | 108             | 128K           | 64K       | up to 51  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F105RCT6 | 108             | 256K           | 96K       | up to 51  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F105RDT6 | 108             | 384K           | 96K       | up to 51  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F105RET6 | 108             | 512K           | 96K       | up to 51  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F105RFT6 | 108             | 768K           | 96K       | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F105RGT6 | 108             | 1024K          | 96K       | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F105V8T6 | 108             | 64K            | 64K       | up to 80  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F105VBT6 | 108             | 128K           | 64K       | up to 80  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F105VCT6 | 108             | 256K           | 96K       | up to 80  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F105VDT6 | 108             | 384K           | 96K       | up to 80  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F105VET6 | 108             | 512K           | 96K       | up to 80  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F105VFT6 | 108             | 768K           | 96K       | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F105VGT6 | 108             | 1024K          | 96K       | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F105ZCT6 | 108             | 256K           | 96K       | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP144         |
|              | GD32F105ZDT6 | 108             | 384K           | 96K       | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      |      | •                | 2(16)                 | 2       | LQFP144         |
| GD32F105ZET6 | 108          | 512K            | 96K            | up to 112 | 4         | 2            | 2                   | 1                | 2               | 1   | 5   | 2            | 3                | 2   | OTG      | 2          |                  |      | •    | 2(16)            | 2                     | LQFP144 |                 |
| GD32F105ZFT6 | 108          | 768K            | 96K            | up to 112 | 10        | 2            | 2                   | 1                | 2               | 1   | 5   | 2            | 3                | 2   | OTG      | 2          |                  |      | •    | 2(16)            | 2                     | LQFP144 |                 |
| GD32F105ZGT6 | 108          | 1024K           | 96K            | up to 112 | 10        | 2            | 2                   | 1                | 2               | 1   | 5   | 2            | 3                | 2   | OTG      | 2          |                  |      | •    | 2(16)            | 2                     | LQFP144 |                 |
| GD32F107     | GD32F107RBT6 | 108             | 128K           | 96K       | up to 51  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 1                | 3   | 2        | OTG        | 2                |      | •    |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F107RCT6 | 108             | 256K           | 96K       | up to 51  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 1                | 3   | 2        | OTG        | 2                |      | •    |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F107RDT6 | 108             | 384K           | 96K       | up to 51  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      | •    |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F107RET6 | 108             | 512K           | 96K       | up to 51  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      | •    |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F107RFT6 | 108             | 768K           | 96K       | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      | •    |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F107RGT6 | 108             | 1024K          | 96K       | up to 51  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      | •    |                  | 2(16)                 | 2       | LQFP64          |
|              | GD32F107VBT6 | 108             | 128K           | 96K       | up to 80  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 1                | 3   | 2        | OTG        | 2                |      | •    | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F107VCT6 | 108             | 256K           | 96K       | up to 80  | 4            | 1                   | 2                | 1               | 2   | 1   | 5            | 1                | 3   | 2        | OTG        | 2                |      | •    | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F107VDT6 | 108             | 384K           | 96K       | up to 80  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      | •    | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F107VET6 | 108             | 512K           | 96K       | up to 80  | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      | •    | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F107VFT6 | 108             | 768K           | 96K       | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      | •    | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F107VGT6 | 108             | 1024K          | 96K       | up to 80  | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      | •    | •                | 2(16)                 | 2       | LQFP100         |
|              | GD32F107ZCT6 | 108             | 256K           | 96K       | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      | •    | •                | 2(16)                 | 2       | LQFP144         |
|              | GD32F107ZDT6 | 108             | 384K           | 96K       | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      | •    | •                | 2(16)                 | 2       | LQFP144         |
|              | GD32F107ZET6 | 108             | 512K           | 96K       | up to 112 | 4            | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      | •    | •                | 2(16)                 | 2       | LQFP144         |
|              | GD32F107ZFT6 | 108             | 768K           | 96K       | up to 112 | 10           | 2                   | 2                | 1               | 2   | 1   | 5            | 2                | 3   | 2        | OTG        | 2                |      | •    | •                | 2(16)                 | 2       | LQFP144         |
| GD32F107ZGT6 | 108          | 1024K           | 96K            | up to 112 | 10        | 2            | 2                   | 1                | 2               | 1   | 5   | 2            | 3                | 2   | OTG      | 2          |                  | •    | •    | 2(16)            | 2                     | LQFP144 |                 |





# SPI NOR Flash

## GD SPI NOR Flash Features



- ◆ **Single Power Supply Voltage**  
- Voltage range: 2.7V~3.6V
- ◆ **High Speed Clock Frequency**  
- Maximum 166MHz for fast read with 30pF load\*  
- Dual I/O Data transfer up to 332Mbits/s  
- Quad I/O Data transfer up to 664Mbits/s  
- Continuous Read With 8/16/32/64-Byte Wrap
- ◆ **Flexible Memory Architecture**  
- Sector Size: 4K Bytes  
- Block Size: 32/64K Bytes

- ◆ **Single Power Supply Voltage**  
- Voltage range: 2.3V~3.6V
- ◆ **High Speed Clock Frequency**  
- Maximum 104MHz for fast read with 30pF load\*  
- Dual I/O Data transfer up to 208Mbits/s  
- Quad I/O Data transfer up to 416Mbits/s  
- Continuous Read With 8/16/32/64-Byte Wrap
- ◆ **Flexible Memory Architecture**  
- Sector Size: 4K Bytes  
- Block Size: 32/64K Bytes

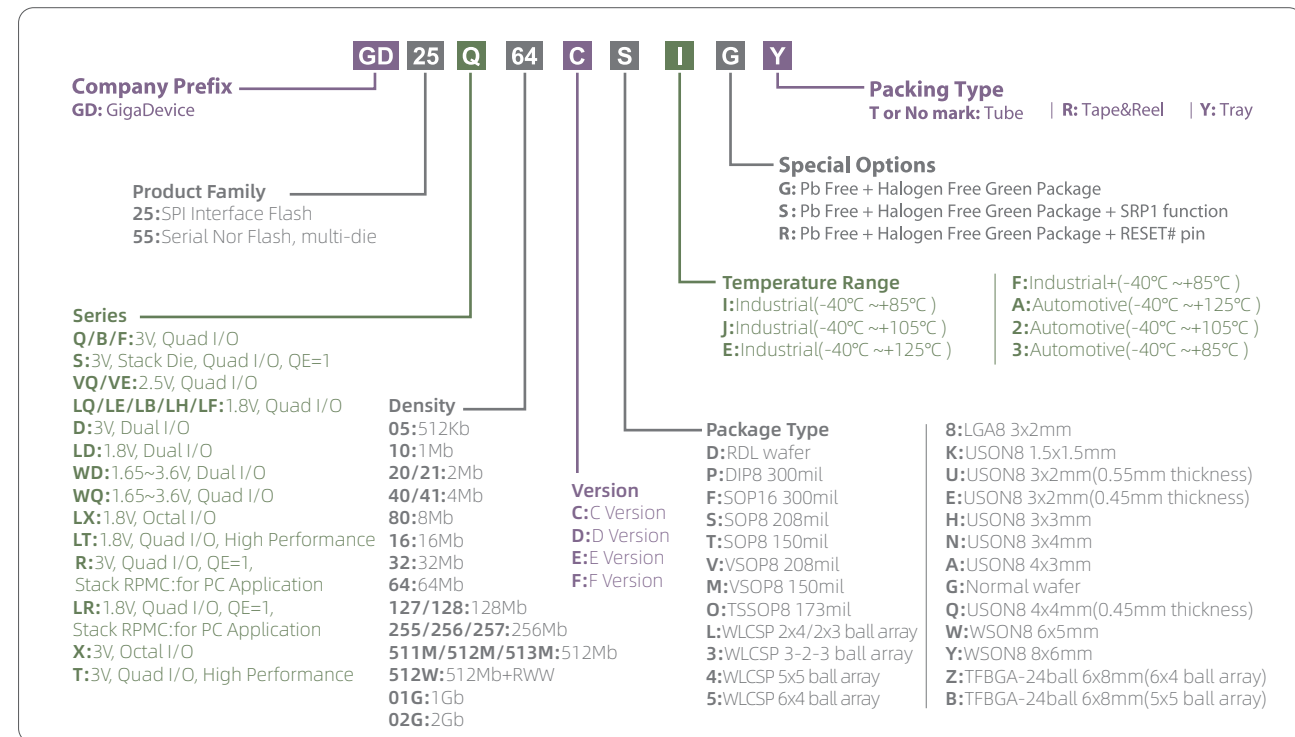
- ◆ **Single Power Supply Voltage**  
- Voltage range: 1.65V~2.0V
- ◆ **High Speed Clock Frequency**  
- Maximum 166MHz for fast read with 30pF load\*  
- Dual I/O Data transfer up to 332Mbits/s  
- Quad I/O Data transfer up to 664Mbits/s  
- QPI Data transfer up to 664Mbits/s  
- Continuous Read With 8/16/32/64-Byte Wrap
- ◆ **Flexible Memory Architecture**  
- Sector Size: 4K Bytes  
- Block Size: 32/64K Bytes

- ◆ **Single Power Supply Voltage**  
- Voltage range: 1.65V~3.6V
- ◆ **High Speed Clock Frequency**  
- Maximum 104MHz for fast read with 30pF load\*  
- Dual I/O Data transfer up to 208Mbits/s  
- Quad I/O Data transfer up to 416Mbits/s  
- Continuous Read With 8/16/32/64-Byte Wrap
- ◆ **Flexible Memory Architecture**  
- Sector Size: 4K Bytes  
- Block Size: 32/64K Bytes

\* This feature is available on most of devices. Please refer to page 16-19.



## GD SPI NOR Flash Part Number Definition



## GD SPI NOR Flash Feature List

| Flash Type                                  | 3.0V       |        |                   |                   |                   |        | 2.5V   |         | 1.8V    |         |         |                   |         |                   |                   |                   | 1.65V-3.6V        |         |         |         |   |
|---|------------|--------|-------------------|-------------------|-------------------|--------|--------|---------|---------|---------|---------|-------------------|---------|-------------------|-------------------|-------------------|-------------------|---------|---------|---------|---|
|   | GD25 F     | GD25 X | GD25 Q            | GD25 B            | GD25 R            | GD25 S | GD25 D | GD25 VQ | GD25 VE | GD25 LX | GD25 LT | GD25 LR           | GD25 LF | GD25 LQ           | GD25 LB           | GD25 LH           | GD25 LE           | GD25 LD | GD25 WQ | GD25 WD |   |
| Part No.                                    | xxE<br>xxF | xxE    | xxC<br>xxD<br>xxE | xxC<br>xxD<br>xxE | xxC<br>xxD<br>xxE | xxD    | xxD    | xxC     | xxC     | xxE     | xxE     | xxC<br>xxD<br>xxE | xxE     | xxC<br>xxD<br>xxE | xxC<br>xxD<br>xxE | xxC<br>xxD<br>xxE | xxC<br>xxD<br>xxE | xxC     | xxE     | xxC     |   |
| Single I/O (1-1-1)                          | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| Dual Output (1-1-2)                         | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| Dual I/O (1-2-2)                            | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| Quad Output (1-1-4)                         | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| Quad I/O (1-4-4)                            | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| Octal Output (1-1-8)                        | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| Octal I/O (1-8-8)                           | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| QPI (4-4-4)                                 | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| OPI (8-8-8)                                 | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| HOLD# Pin                                   | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| H/W Reset (RESET# Pin)                      | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| S/W Reset                                   | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| H/W Write Protection (WP# Pin)              | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| S/W Write Protection                        | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| Enhanced Block Protection                   | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| Volatile & Non-volatile Status Register Bit | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| Output Driver Strength                      | *          | .      | *                 | *                 | *                 | *      | .      | *       | *       | .       | .       | *                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | * |
| Security Registers with OTP Locks           | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| SFDP Register                               | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |
| DTR   | .          | .      | .                 | .                 | .                 | .      | .      | .       | .       | .       | .       | .                 | .       | .                 | .                 | .                 | .                 | .       | .       | .       | . |

\* This feature is supported by part of family







| Part No.   | Density | Voltage    | Organization      | I/O Bus              | Frequency (MHz)                | Packages   |
|------------|---------|------------|-------------------|----------------------|--------------------------------|--|
| GD25LE16E  | 16Mb    | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4) 66MHz(DTR)  | SOP8 208mil USON8 3x2mm (0.45mm) WLCSP (3-2-3 ball array)  |
| GD25LQ16E  | 16Mb    | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm) USON8 3x4mm WSON8 6x5mm WLCSP (3-2-3 ball array)  |
| GD25LH16E  | 16Mb    | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm) USON8 3x4mm WSON8 6x5mm   |
| GD25LB16E  | 16Mb    | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm) USON8 3x4mm WSON8 6x5mm   |
| GD25LB16C  | 16Mb    | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) LGA8 3x2mm WSON8 6x5mm  |
| GD25LE16C  | 16Mb    | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) LGA8 3x2mm WSON8 6x5mm WLCSP (4-4 or 3-3 ball array)                    |
| GD25LH16C  | 16Mb    | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) LGA8 3x2mm WSON8 6x5mm  |
| GD25LQ16C  | 16Mb    | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) LGA8 3x2mm WSON8 6x5mm WLCSP (4-4 or 3-3 ball array)                    |
| GD25LF80E  | 8Mb     | 1.65V-2.0V | 4KB / 32KB / 64KB | Single / Dual / Quad | 166MHz(x1, x2, x4) 104MHz(DTR) | SOP8 208mil USON8 3x2mm (0.45mm) USON8 3x4mm   |
| GD25LE80E  | 8Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4) 66MHz(DTR)  | SOP8 208mil USON8 3x2mm (0.45mm) WLCSP (4-4 or 3-3 ball array)   |
| GD25LQ80E  | 8Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm)   |
| GD25LH80E  | 8Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil USON8 3x2mm (0.45mm)  |
| GD25LD80C  | 8Mb     | 1.65V-2.0V | 4KB / 32KB / 64KB | Single / Dual Output | 50MHz(x1) 40MHz(x2)            | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm)   |
| GD25LE80C  | 8Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm WLCSP (4-4 or 3-3 ball array)                      |
| GD25LH80C  | 8Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x2mm (0.55mm) USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm WLCSP (4-4 or 3-3 ball array) |
| GD25LQ80C  | 8Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x2mm (0.55mm) USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm WLCSP (4-4 or 3-3 ball array) |
| GD25LQ40E  | 4Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) USON8 3x4mm   |
| GD25LD40C  | 4Mb     | 1.65V-2.0V | 4KB / 32KB / 64KB | Single / Dual Output | 50MHz(x1) 40MHz(x2)            | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) USON8 4x4mm (0.45mm) WSON8 6x5mm  |
| GD25LE40C  | 4Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm  |
| GD25LH40C  | 4Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x2mm (0.55mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm                   |
| GD25LQ40C  | 4Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm                          |
| GD25LQ20E  | 2Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) USON8 3x4mm   |
| GD25LD20C  | 2Mb     | 1.65V-2.0V | 4KB / 32KB / 64KB | Single / Dual Output | 50MHz(x1) 40MHz(x2)            | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) USON8 4x4mm (0.45mm) WSON8 6x5mm  |
| GD25LE20C  | 2Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm  |
| GD25LH20C  | 2Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x2mm (0.55mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm                   |
| GD25LQ20C  | 2Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm                          |
| GD25LD10C  | 1Mb     | 1.65V-2.0V | 4KB / 32KB / 64KB | Single / Dual Output | 50MHz(x1) 40MHz(x2)            | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm)   |
| GD25LE10C  | 1Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm  |
| GD25LH10C  | 1Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x2mm (0.55mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm                   |
| GD25LQ10C  | 1Mb     | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm                          |
| GD25LD05C  | 512Kb   | 1.65V-2.0V | 4KB / 32KB / 64KB | Single / Dual Output | 50MHz(x1) 40MHz(x2)            | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm)   |
| GD25LE05C  | 512Kb   | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm  |
| GD25LH05C  | 512Kb   | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x2mm (0.55mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm                   |
| GD25LQ05C  | 512Kb   | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm                          |
| GD25WQ256E | 256Mb   | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP16 300mil WSON8 6x5mm WSON8 8x6mm TFBGA24 8x6mm (5x5 ball array)  |
| GD25WQ128E | 128Mb   | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 208mil SOP16 300mil USON8 4x4mm (0.45mm) WSON8 6x5mm WSON8 8x6mm TFBGA24 8x6mm (5x5 ball array)   |
| GD25WQ64E  | 64Mb    | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 208mil USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm TFBGA24 8x6mm (5x5 ball array) WLCSP (3-2-3 ball array)   |
| GD25WQ32E  | 32Mb    | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm) USON8 3x4mm   |
| GD25WQ16E  | 16Mb    | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm)   |
| GD25WQ80E  | 8Mb     | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4)             | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm)   |
| GD25WD80C  | 8Mb     | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual Output | 100MHz(x1) 80MHz(x2)           | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm)   |
| GD25WD40C  | 4Mb     | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual Output | 100MHz(x1) 80MHz(x2)           | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm)   |
| GD25WD20C  | 2Mb     | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual Output | 100MHz(x1) 80MHz(x2)           | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm)   |
| GD25WD10C  | 1Mb     | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual Output | 100MHz(x1) 80MHz(x2)           | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm)   |
| GD25WD05C  | 512Kb   | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual Output | 100MHz(x1) 80MHz(x2)           | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm)   |

Product Series

3V

Q: Quad I/O, General  
 B: Quad I/O, QE=1  
 F: Quad I/O, DTR, QE=1  
 X: Octal I/O  
 D: Dual Output  
 R: Quad I/O, QE=1, Stack RPMC  
 S: Quad I/O, Stack Die, QE=1  
 T: Quad I/O, High Performance

2.5V

VQ: Quad I/O, General  
 VE: Quad I/O, Low Power

1.8V

LT: Quad I/O, High Performance  
 LR: Quad I/O, QE=1, Stack RPMC  
 LX: Octal I/O  
 LQ: Quad I/O, General  
 LB: Quad I/O, QE=1  
 LF: Quad I/O, DTR, QE=1

LH: Quad I/O, Faster tpp  
 LD: Dual Output  
 LE: Quad I/O, Low Power

1.65V~3.6V

WQ: Quad I/O  
 WD: Dual Output



# SPI NAND Flash



## GD SPI NAND Flash Features

### 3.3V

- ◆ Power Supply Voltage: 2.7V~3.6V
- ◆ High Speed Clock Frequency:
  - Up to 120MHz for fast read with 30pF load
  - Quad I/O Data transfer up to 480Mbit/s
- ◆ Flexible Memory Architecture:
  - 2048Byte page for read and program
  - 128KByte per block for erase
- ◆ Enhanced Access Performance:
  - 2KByte cache for fast random read
  - Cache Read and Cache Program
- ◆ Advanced Feature for SPI NAND:
  - Internal ECC algorithm
  - Internal data move by page with ECC
  - Promised good block-0 with ECC

### 1.8V

- ◆ Power Supply Voltage: 1.7V~2.0V
- ◆ High Speed Clock Frequency:
  - Up to 120MHz for fast read with 30pF load
  - Quad I/O Data transfer up to 480Mbit/s
- ◆ Flexible Memory Architecture:
  - 2048Byte page for read and program
  - 128KByte per block for erase
- ◆ Enhanced Access Performance:
  - 2KByte cache for fast random read
  - Cache Read and Cache Program
- ◆ Advanced Feature for SPI NAND:
  - Internal ECC algorithm
  - Internal data move by page with ECC
  - Promised good block-0 with ECC

## GD SPI NAND Flash Product List

### 3.3V

| Part No.      | Density | Frequency | I/O Bus  | Page Size | Package                 |
|---------------|---------|-----------|----------|-----------|-------------------------|
| GD5F1GQ4UxxxG | 1Gb     | 120MHZ    | x1/x2/x4 | 2KB+128B  | WS0N8 8*6mm/WS0N8 6*5mm |
| GD5F1GQ4UxxxH | 1Gb     | 120MHZ    | x1/x2/x4 | 2KB+64B   | WS0N8 8*6mm/WS0N8 6*5mm |
| GD5F1GQ5UxxxG | 1Gb     | 133MHZ    | x1/x2/x4 | 2KB+128B  | WS0N8 8*6mm             |
| GD5F1GQ5UxxxH | 1Gb     | 133MHZ    | x1/x2/x4 | 2KB+64B   | WS0N8 8*6mm             |
| GD5F2GQ5UxxxG | 2Gb     | 104MHZ    | x1/x2/x4 | 2KB+128B  | WS0N8 8*6mm             |
| GD5F2GQ5UxxxH | 2Gb     | 104MHZ    | x1/x2/x4 | 2KB+64B   | WS0N8 8*6mm             |
| GD5F4GQ6UxxxG | 4Gb     | 104MHZ    | x1/x2/x4 | 2KB+128B  | WS0N8 8*6mm             |
| GD5F4GQ6UxxxH | 4Gb     | 104MHZ    | x1/x2/x4 | 2KB+64B   | WS0N8 8*6mm             |

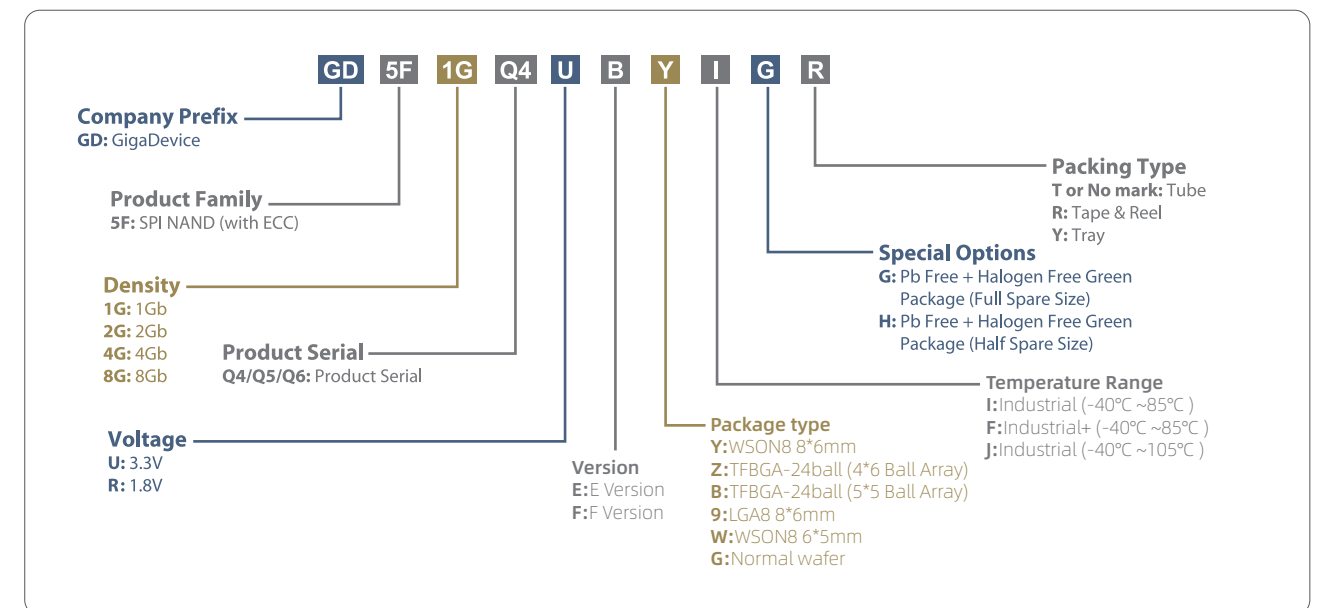
Note: For other Part Number options, please contact GigaDevice sales.

### 1.8V

| Part No.      | Density | Frequency | I/O Bus  | Page Size | Package                 |
|---------------|---------|-----------|----------|-----------|-------------------------|
| GD5F1GQ4RxxxG | 1Gb     | 120MHZ    | x1/x2/x4 | 2KB+128B  | WS0N8 8*6mm/WS0N8 6*5mm |
| GD5F1GQ4RxxxH | 1Gb     | 120MHZ    | x1/x2/x4 | 2KB+64B   | WS0N8 8*6mm/WS0N8 6*5mm |
| GD5F1GQ5RxxxG | 1Gb     | 104MHZ    | x1/x2/x4 | 2KB+128B  | WS0N8 8*6mm             |
| GD5F1GQ5RxxxH | 1Gb     | 104MHZ    | x1/x2/x4 | 2KB+64B   | WS0N8 8*6mm             |
| GD5F2GQ5RxxxG | 2Gb     | 80MHZ     | x1/x2/x4 | 2KB+128B  | WS0N8 8*6mm             |
| GD5F2GQ5RxxxH | 2Gb     | 80MHZ     | x1/x2/x4 | 2KB+64B   | WS0N8 8*6mm             |
| GD5F4GQ6RxxxG | 4Gb     | 80MHZ     | x1/x2/x4 | 2KB+128B  | WS0N8 8*6mm             |
| GD5F4GQ6RxxxH | 4Gb     | 80MHZ     | x1/x2/x4 | 2KB+64B   | WS0N8 8*6mm             |

Note: For other Part Number options, please contact GigaDevice sales.

## GD SPI NAND Flash Part Number Definition



# Parallel NAND Flash

## GD Parallel NAND Flash Features



- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>◆ Power Supply: 2.7V ~ 3.6V</li> <li>◆ Density: 1Gb / 2Gb / 4G / 8G / 16G</li> <li>◆ Page Size: 2048Byte + 128Byte / 2048Byte + 64Byte</li> <li>◆ Flash Array to Register Time: 25us</li> <li>◆ IO Read Performance: 20ns / 25ns</li> <li>◆ Bus Width: x8 or x16 options</li> <li>◆ Temperature Range: -40° C to 85° C / -40° C to 105° C</li> <li>◆ ONFI 1.0 Compatible</li> </ul> | <ul style="list-style-type: none"> <li>◆ Power Supply: 1.7V ~ 1.95V</li> <li>◆ Density: 1Gb / 2Gb / 4G / 8G / 16G</li> <li>◆ Page Size: 2048Byte + 128Byte / 2048Byte + 64Byte</li> <li>◆ Flash Array to Register Time: 25us</li> <li>◆ IO Read Performance: 25ns / 45ns</li> <li>◆ Bus Width: x8 or x16 options</li> <li>◆ Temperature Range: -40° C to 85° C / -40° C to 105° C</li> <li>◆ ONFI 1.0 Compatible</li> </ul> |
|--|---|

## GD Parallel NAND Flash Product List

### 3.3V

| Part No.     | Density | Sequential Access Time | I/O Bus | Page Size | ECC Requirement    | Package                         |
|--------------|---------|------------------------|---------|-----------|--------------------|---------------------------------|
| GD9FU1GxF2A  | 1Gb     | 25ns                   | x8/x16  | 2KB+128B  | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FU1GxF3A  | 1Gb     | 25ns                   | x8/x16  | 2KB+64B   | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FU2GxF2A  | 2Gb     | 20ns                   | x8/x16  | 2KB+128B  | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FU2GxF3A  | 2Gb     | 20ns                   | x8/x16  | 2KB+64B   | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FU4GxF2A  | 4Gb     | 20ns                   | x8/x16  | 2KB+128B  | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FU4GxF3A  | 4Gb     | 20ns                   | x8/x16  | 2KB+64B   | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FU8GxE2A  | 8Gb     | 20ns                   | x8/x16  | 2KB+128B  | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FU8GxE3A  | 8Gb     | 20ns                   | x8/x16  | 2KB+64B   | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FUAGxD2A  | 16Gb    | 20ns                   | x8/x16  | 2KB+128B  | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FUAGxD3A  | 16Gb    | 20ns                   | x8/x16  | 2KB+64B   | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9AU2GxF3A* | 2Gb     | 20ns                   | x8/x16  | 2KB+64B   | Internal 4bit/512B | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9AU4GxF3A* | 4Gb     | 20ns                   | x8/x16  | 2KB+64B   | Internal 4bit/512B | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9AU8GxE3A* | 8Gb     | 20ns                   | x8/x16  | 2KB+64B   | Internal 4bit/512B | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9AUAGxD3A* | 16Gb    | 20ns                   | x8/x16  | 2KB+64B   | Internal 4bit/512B | TSOP48 20*12mm/<br>BGA63 9*11mm |

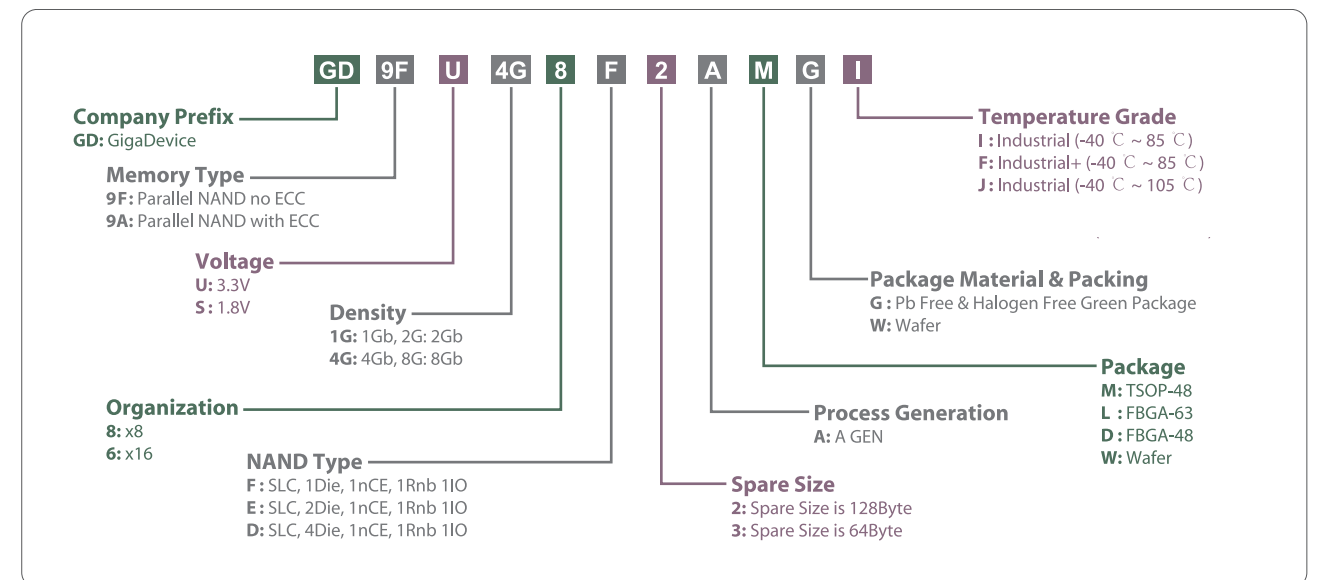
Note: The device has internal 4bit/512B ECC, doesn't need host ECC\*.

### 1.8V

| Part No.     | Density | Sequential Access Time | I/O Bus | Page Size | ECC Requirement    | Package                         |
|--------------|---------|------------------------|---------|-----------|--------------------|---------------------------------|
| GD9FS1GxF2A  | 1Gb     | 45ns                   | x8/x16  | 2KB+128B  | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FS1GxF3A  | 1Gb     | 45ns                   | x8/x16  | 2KB+64B   | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FS2GxF2A  | 2Gb     | 25ns                   | x8/x16  | 2KB+128B  | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FS2GxF3A  | 2Gb     | 25ns                   | x8/x16  | 2KB+64B   | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FS4GxF2A  | 4Gb     | 25ns                   | x8/x16  | 2KB+128B  | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FS4GxF3A  | 4Gb     | 25ns                   | x8/x16  | 2KB+64B   | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FS8GxE2A  | 8Gb     | 25ns                   | x8/x16  | 2KB+128B  | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FS8GxE3A  | 8Gb     | 25ns                   | x8/x16  | 2KB+64B   | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FSAGxD2A  | 16Gb    | 25ns                   | x8/x16  | 2KB+128B  | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9FSAGxD3A  | 16Gb    | 25ns                   | x8/x16  | 2KB+64B   | 4bit/512B          | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9AS2GxF3A* | 2Gb     | 25ns                   | x8/x16  | 2KB+64B   | Internal 4bit/512B | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9AS4GxF3A* | 4Gb     | 25ns                   | x8/x16  | 2KB+64B   | Internal 4bit/512B | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9AS8GxE3A* | 8Gb     | 25ns                   | x8/x16  | 2KB+64B   | Internal 4bit/512B | TSOP48 20*12mm/<br>BGA63 9*11mm |
| GD9ASAGxD3A* | 16Gb    | 25ns                   | x8/x16  | 2KB+64B   | Internal 4bit/512B | TSOP48 20*12mm/<br>BGA63 9*11mm |

Note: The device has internal 4bit/512B ECC, doesn't need host ECC\*.

## GD Parallel NAND Flash Part Number Definition







# Flash Package Options


Note:


1. The values provided are the normal values for length, width and pitch, as well as the max values for thickness.
2. The pictures are for reference only. Please always verify your selection with the product data sheet.

| T |  | SOP8 150mil    |      |
|---|---|----------------|------|
|   |   | Length(Normal) | 4.90 |
|   |   | Width(Normal)  | 6.00 |
|   |   | Thickness(Max) | 1.75 |
|   |   | Pitch(Normal)  | 1.27 |
|   |   | mm             |      |

| P |  | DIP8 300mil    |      |
|---|--|----------------|------|
|   |  | Length(Normal) | 9.32 |
|   |  | Width(Normal)  | 7.94 |
|   |  | Thickness(Max) | 3.50 |
|   |  | Pitch(Normal)  | 2.54 |
|   |  | mm             |      |


| U |  | USON8 3*2mm (0.55mm) |      |
|---|---|----------------------|------|
|   |   | Length(Normal)       | 3.00 |
|   |   | Width(Normal)        | 2.00 |
|   |   | Thickness(Max)       | 0.60 |
|   |   | Pitch(Normal)        | 0.50 |
|   |   | mm                   |      |

| Q |  | USON8 4*4mm (0.45mm) |      |
|---|---|----------------------|------|
|   |   | Length(Normal)       | 4.00 |
|   |   | Width(Normal)        | 4.00 |
|   |   | Thickness(Max)       | 0.50 |
|   |   | Pitch(Normal)        | 0.80 |
|   |   | mm                   |      |

| S |  | SOP8 208mil    |      |
|---|---|----------------|------|
|   |   | Length(Normal) | 5.23 |
|   |   | Width(Normal)  | 7.90 |
|   |   | Thickness(Max) | 2.16 |
|   |   | Pitch(Normal)  | 1.27 |
|   |   | mm             |      |


| Z |  | TFBGA-24ball 6*8mm (4*6ball array) |      |
|---|--|------------------------------------|------|
|   |  | Length(Normal)                     | 6.00 |
|   |  | Width(Normal)                      | 8.00 |
|   |  | Thickness(Max)                     | 1.20 |
|   |  | Pitch(Normal)                      | 1.00 |
|   |  | mm                                 |      |


| E |  | USON8 3*2mm (0.45mm) |      |
|---|---|----------------------|------|
|   |   | Length(Normal)       | 3.00 |
|   |   | Width(Normal)        | 2.00 |
|   |   | Thickness(Max)       | 0.50 |
|   |   | Pitch(Normal)        | 0.50 |
|   |   | mm                   |      |

| W |  | WSON8 6*5mm    |      |
|---|---|----------------|------|
|   |   | Length(Normal) | 6.00 |
|   |   | Width(Normal)  | 5.00 |
|   |   | Thickness(Max) | 0.80 |
|   |   | Pitch(Normal)  | 1.27 |
|   |   | mm             |      |


| M |  | VSOP8 150mil   |      |
|---|---|----------------|------|
|   |   | Length(Normal) | 4.90 |
|   |   | Width(Normal)  | 6.00 |
|   |   | Thickness(Max) | 0.90 |
|   |   | Pitch(Normal)  | 1.27 |
|   |   | mm             |      |


| B |  | TFBGA-24ball 6*8mm (5*5ball array) |      |
|---|--|------------------------------------|------|
|   |  | Length(Normal)                     | 6.00 |
|   |  | Width(Normal)                      | 8.00 |
|   |  | Thickness(Max)                     | 1.20 |
|   |  | Pitch(Normal)                      | 1.00 |
|   |  | mm                                 |      |


| H |  | USON8 3*3mm    |      |
|---|---|----------------|------|
|   |   | Length(Normal) | 3.00 |
|   |   | Width(Normal)  | 3.00 |
|   |   | Thickness(Max) | 0.60 |
|   |   | Pitch(Normal)  | 0.50 |
|   |   | mm             |      |


| Y |  | WSON8 8*6mm    |      |
|---|---|----------------|------|
|   |   | Length(Normal) | 8.00 |
|   |   | Width(Normal)  | 6.00 |
|   |   | Thickness(Max) | 0.80 |
|   |   | Pitch(Normal)  | 1.27 |
|   |   | mm             |      |


| M |  | TSOP48         |      |
|---|---|----------------|------|
|   |   | Length(Normal) | 12.0 |
|   |   | Width(Normal)  | 20.0 |
|   |   | Thickness(Max) | 1.20 |
|   |   | Pitch(Normal)  | 0.50 |
|   |   | mm             |      |

| 8 |  | LGA8 3*2mm     |      |
|---|--|----------------|------|
|   |  | Length(Normal) | 3.00 |
|   |  | Width(Normal)  | 2.00 |
|   |  | Thickness(Max) | 0.50 |
|   |  | Pitch(Normal)  | 0.50 |
|   |  | mm             |      |


| N |  | USON8 3*4mm    |      |
|---|---|----------------|------|
|   |   | Length(Normal) | 3.00 |
|   |   | Width(Normal)  | 4.00 |
|   |   | Thickness(Max) | 0.60 |
|   |   | Pitch(Normal)  | 0.80 |
|   |   | mm             |      |


| L |  | WLCSP                       |  |
|---|---|-----------------------------|--|
|   |   | Depends on specific product |  |


| V |  | VSOP8 208mil   |      |
|---|---|----------------|------|
|   |   | Length(Normal) | 5.28 |
|   |   | Width(Normal)  | 7.90 |
|   |   | Thickness(Max) | 1.00 |
|   |   | Pitch(Normal)  | 1.27 |
|   |   | mm             |      |

| 9 |  | LGA8 8*6mm     |      |
|---|--|----------------|------|
|   |  | Length(Normal) | 8.00 |
|   |  | Width(Normal)  | 6.00 |
|   |  | Thickness(Max) | 0.80 |
|   |  | Pitch(Normal)  | 1.27 |
|   |  | mm             |      |

| J |  | USON8 4*4mm (0.55mm) |      |
|---|---|----------------------|------|
|   |   | Length(Normal)       | 4.00 |
|   |   | Width(Normal)        | 4.00 |
|   |   | Thickness(Max)       | 0.60 |
|   |   | Pitch(Normal)        | 0.80 |
|   |   | mm                   |      |

| L |  | FBGA63         |      |
|---|---|----------------|------|
|   |   | Length(Normal) | 9.00 |
|   |   | Width(Normal)  | 11.0 |
|   |   | Thickness(Max) | 1.00 |
|   |   | Pitch(Normal)  | 0.80 |
|   |   | mm             |      |

| F |  | SOP16 300mil   |       |
|---|---|----------------|-------|
|   |   | Length(Normal) | 10.30 |
|   |   | Width(Normal)  | 10.35 |
|   |   | Thickness(Max) | 2.75  |
|   |   | Pitch(Normal)  | 1.27  |
|   |   | mm             |       |

| K |  | USON8 1.5*1.5mm |      |
|---|--|-----------------|------|
|   |  | Length(Normal)  | 1.50 |
|   |  | Width(Normal)   | 1.50 |
|   |  | Thickness(Max)  | 0.50 |
|   |  | Pitch(Normal)   | 0.40 |
|   |  | mm              |      |



# Capacitive Fingerprint Sensor



## Overview

- ◆ Diverse shapes: round, square, rectangular etc
- ◆ All kinds of typical sizes: different diameters, different side lengths, especially ultra-narrow
- ◆ Front/Back/Edge-Mounted package sensor type supported
- ◆ Supports different surface materials: matte / glossy coating, ceramic / glass cover
- ◆ High Sensitivity, High SNR, High quality image.
- ◆ 256 true gray scale values, 8 bits per pixel.
- ◆ Support Standard SPI Bus Interface.
- ◆ Resolution:508 DPI

## Fingerprint Identification

- ◆ Adaptive Calibration: automatically adjusts the sensor configuration according to the different types of fingerprint
- ◆ Adaptive for many kinds of algorithm includes finger pattern and feature points
- ◆ Getting the high definition fingerprint image without a metal ring module.
- ◆ Smart wake-up feature

## Electrical Properties

- ◆ Supply Voltage: 2.6V~3.6V
- ◆ VDDIO Voltage: 1.8V~AVDD;
- ◆ Power Consumption:
  - Image scan Mode (Frame Rate>20F/s or custom):8.5mA (configurable)
  - Sleep Mode (Before awaken):100µA (Typically)
  - Deep sleep Mode: 30~100µA

## Reliability

- ◆ Sensor ESD Performance
  - Air discharge : ±25.0 kV
  - Direct discharge : ±8.0 kV
- ◆ Sensor Latch-up Performance: ±400.00mA

## Capacitive Fingerprint

| Part No. | Type    | Position            | LGA Square Size |              | LGA Round size |          | Sensing Area | Pixel Array |
|----------|---------|---------------------|-----------------|--------------|----------------|----------|--------------|-------------|
| GSL6157N | Coating | Side (super narrow) | 14.3*2.4        |              |                |          | 8 x 1.8mm    | 160 x 36    |
| GSL6150N | Coating | Postposition        | Max:12x12       | Min:7.5x7.5  | Max:φ12        | Min:φ8.5 | 4.0 x 3.2 mm | 80 x 64     |
| GSL6156E | Coating | Side                | Max:16.4x6.9    | Min:12x2.9   | ————           | ————     | 6.8 x 2.4mm  | 192 x 68    |
| GSL6182E | Coating | Smart door lock /PC | Max:16x16       | Min:13x13    | Max:φ16        | Min:φ13  | 8 x 8mm      | 160 x 160   |
| GSL6185E | Coating | Smart door lock /PC | Max:16x16       | Min:13x13    | Max:φ16        | Min:φ13  | 5.7 x 6.6mm  | 114 x 132   |
| GSL6275E | Cover   | Preposition         | Max:16.4x6.9    | Min:12.5x4.0 | ————           | ————     | 8.8 x 3.2 mm | 176 x 64    |
| GSL6250N | Cover   | Postposition        | Max:12x12       | Min:7.5x7.5  | Max:φ12        | Min:φ8.5 | 4.0 x 3.2 mm | 80 x 64     |
| GSL6257N | Cover   | Side (super narrow) | 14.3*2.4        |              |                |          | 8 x 1.8mm    | 160 x 36    |

# Optical Fingerprint Sensor



## Overview

- ◆ Different types of optical sensors under the display: CCM (CSM), ultra-thin, TFT large area
- ◆ All kinds of OLED type supported(both rigid and flexible OLED)
- ◆ FRR ≤ 1.5%@FAR ≤ 1/50,000
- ◆ Enroll times ≤ 12 times
- ◆ All 360 degrees can be identified

## CCM Sensor

- ◆ Large size pixel design for low-light under display fingerprint application
- ◆ Advanced Single-chip architecture
- ◆ Optimized lens design matching pixel array
- ◆ No flash supported
- ◆ Firstly introduce Chip-Scale Package in under-display fingerprint application

## Ultrathin Sensor

- ◆ Ultrathin module thickness
- ◆ Optimized collimator design
- ◆ No lamination with OLED for high-yield manufacture
- ◆ High sensitivity and resolution for better fingerprint recognition

## TFT Large Area Sensor

- ◆ System Optimized Design ( ROIC/GateIC self-designed matching TFT sensor)
- ◆ Low TFT sensor leakage <math>10^{-14}</math> ( Ion/Ioff 1E8, better than normal 1E6)
- ◆ High-speed Scanning Supported(small size sensing with fast-read-out data)
- ◆ Both glass and PI substrate type supported
- ◆ High QE with optimized TFT sensor design

## Optical Fingerprint Under OLED

| Part No. | Position       | Finger Sensing Area | Chip Sensing Area | Pixel Array | Supported Under Screen Height |
|----------|----------------|---------------------|-------------------|-------------|-------------------------------|
| GSL7000A | CCM            | 6.0 x 6.0 mm        | 2.0 x 2.0 mm      | 320 x 320   | 3.5~3.9mm                     |
| GSL7001A | CCM            | 6.0 x 6.0 mm        | 2.0 x 2.0 mm      | 320 x 320   | 3.5~3.9mm                     |
| GSL7301A | Ultrathin      | 6.0 x 6.0 mm        | 6.0 x 6.0 mm      | 88 x 86     | 0.5~1.0mm                     |
| GSL7303A | Ultrathin      | 6.0 x 9.0 mm        | 6.0 x 9.0 mm      | 180 x 280   | 0.3~0.8mm                     |
| GSL7305A | Ultrathin      | 6.0 x 6.0 mm        | 6.0 x 6.0 mm      | 180 x 180   | 0.3~0.8mm                     |
| GSL7253  | TFT large area | 30 x 20 mm          | 30 x 20 mm        | 300 x 200   | 0.3~0.6mm                     |
| GSL7001F | CSM            | 6.0 x 6.0 mm        | 2.0 x 2.0 mm      | 320 x 320   | 3.5~3.9mm                     |

# MEMS Ultrasonic Sensor



## Fingerprint Identification

- ◆ High resolution 3D fingerprint image with epidermal and dermal skin
- ◆ Advanced ultrasonic sensor design in fingerprint application
- ◆ Creative CMOS and MEMS monolithic chip design
- ◆ Pulse echo and Beam-forming supported for higher sensitivity
- ◆ Better identification with water, cream, lotion fingerprint
- ◆ Capacitive smart wake-up supported
- ◆ Ultrathin thickness design (0.3mm supported)
- ◆ Under Flexible OLED supported
- ◆ Under different materials like cover-glass/metal/plastic etc

## Ultrasonic FP Under OLED

| Part No. | Position             | Finger Sensing Area | Chip Sensing Area | Pixel Array | Supported Under Screen Height | Transmission Thickness   |
|----------|----------------------|---------------------|-------------------|-------------|-------------------------------|--------------------------|
| GSL8165A | Ultrathin            | 4.8 x 4.8 mm        | 4.8 x 4.8 mm      | 80 x 80     | 0.3~1mm                       | 1mm glass/metal/OLED/etc |
| GSL8252  | Ultrathin large area |                     | 30 x 20 mm        | 428 x 285   | 0.3~0.6mm                     | 1mm glass/metal/OLED/etc |

## Ultrasonic-TOF

| Part No. | Dimensions         | Operating Range | Accuracy    | Interface | Power @1 sample/sec @ max range | Power @30 sample/sec@ max range | Samlpe Rate                   | FOV              | Application   |
|----------|--------------------|-----------------|-------------|-----------|---------------------------------|---------------------------------|-------------------------------|------------------|---|
| GSL8300  | 3.5 x 3.5 x 1.25mm | Up to 60cm      | <1.3 mm RMS | I2C       | 20 u A                          | 230 u A                         | Up to 100 samples /sec @ 60cm | Up to 180 degree | Touchless gesture UI; VR/AR, Range & presense detection |

## Ultrasonic- Blood Pressure Monitoring

| Part No. | Position | Dimensions        | Operating Range | Accuracy | Samlpe Rate            |
|----------|----------|-------------------|-----------------|----------|------------------------|
| GSL8011  | wrist    | 6.4 x 6.4 x 0.5mm | Up to 1cm       | <5 mmHg  | Up to 1000 samples/sec |



# Capacitive Touchscreen Controller



## Overview:

- ◆ Outstanding anti RF, LCD and power supply interference
- ◆ Detect up to 10 fingers
- ◆ Panel Thickness: glass up to 2.5mm, plastic up to 1.2mm
- ◆ I2C compatible slave mode 400KHz.
- ◆ I/O Interface: 1.8V /3.3V compatible

## Recommended Capacitive Touch IC for Mobile Phone

| Part No. | TP Type Supported  | Channel Number | Recommended Dimensions |
|----------|--|----------------|------------------------|
| GSL1688F | Single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, single-layer bridge building process           | 16 x 10        | <4 inch                |
| GSL1691F | Single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, full ITO, sito                                 | 18 x 12        | 5 ~ 6 inch             |
| GSL2682C | Single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, single-layer bridge building process           | 23 x 12        | <5 inch                |
| GSL915   | Single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, single-layer bridge building process           | 26 x 14        | <5 inch                |
| GSL968   | Single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, single-layer bridge building process           | 17 x 10        | 4 inch                 |
| GSL2688  | Single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, single-layer bridge building process           | 26 x 16        | 5 ~ 6 inch             |
| GSL2691  | S+D37:D46 single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, single-layer bridge building process | 29 x 14        | 5 ~ 6 inch             |
| GSL2038  | Two points of single-layer partition (with silver paste, all ITO)  | 25             | <3 inch                |
| GSL2232  | Two points of single-layer partition (with silver paste, all ITO)  | 32             | 3.5 ~ 4.5 inch         |
| GSL2336  | Two points of single-layer partition (with silver paste, all ITO)  | 36             | 4 ~ 5 inch             |
| GSL2338  | Two points of single-layer partition (with silver paste, all ITO)  | 40             | 4 ~ 6 inch             |

## Recommended Capacitive Touch IC for Flat Panel

| Part No. | TP Type Supported   | Channel Number | Recommended Dimensions |
|----------|---|----------------|------------------------|
| GSL1680F | Traditional DITO (including dual-mode GFF), silver-free DITO, single-layer bridge   | 16 x 10        | 7 inch                 |
| GSL1686F | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 16 x 10        | 7 inch                 |
| GSL1681F | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 18 x 12        | 7 inch                 |
| GSL2681C | Traditional DITO (including dual-mode GFF), silver-free DITO, single-layer bridge   | 23 x 12        | 7 ~ 7.85 inch          |
| GSL3670D | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 26 x 14        | 7.85 ~ 9 inch          |
| GSL3676  | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 28 x 18        | 9 ~ 10.1 inch          |
| GSL3680  | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 31 x 20        | 9 ~ 10.1 inch          |
| GSL3692  | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 32 x 24        | 9.7 ~ 12 inch          |
| GSL5680  | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 42 x 30        | 9.7 ~ 15 inch          |
| GSL5690  | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 72 x 40        | <21.6 inch             |