

**SURFACE MOUNT GLASS PASSIVATED
SUPER FAST SILICON RECTIFIER**
VOLTAGE RANGE 50 to 600 Volts CURRENT 1.0 Ampere

FEATURES

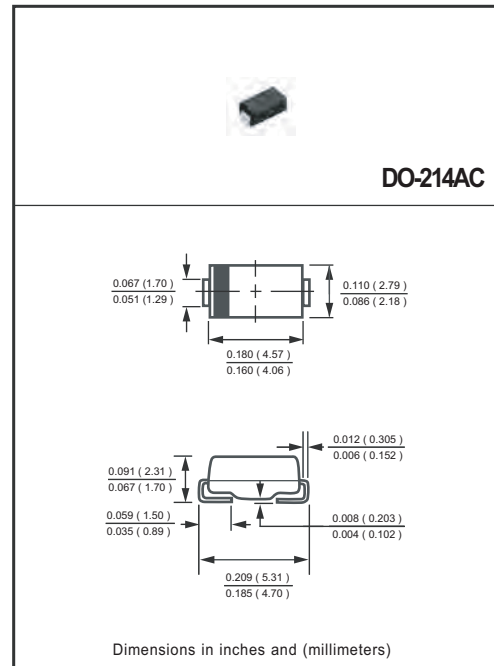
- * Glass passivated device
- * Ideal for surface mounted applications
- * Low leakage current
- * Metallurgically bonded construction
- * Halogen-free

MECHANICAL DATA

- * Epoxy : Device has UL flammability classification 94V-0
- * Mounting position: Any
- * Weight: 0.057 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.
Resistive or inductive load.



MAXIMUM RATINGS (@ TA=25 °C unless otherwise noted)

| RATINGS | SYMBOL | ES1A | ES1B | ES1C | ES1D | ES1E | ES1G | ES1J | UNITS |
|---|-----------------------------------|--------------|------|------|------|------|------|------|------------------|
| Maximum Recurrent Peak Reverse Voltage | V _{RRM} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | Volts |
| Maximum RMS Voltage | V _{RMS} | 35 | 70 | 105 | 140 | 210 | 280 | 420 | Volts |
| Maximum DC Blocking Voltage | V _{DC} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | Volts |
| Maximum Average Forward Rectified Current at T _A = 55°C | I _o | 1.0 | | | | | | | Amps |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | I _{FSM} | 30 | | | | | | | Amps |
| Typical Current Square Time | I ² T | 3.7 | | | | | | | A ² S |
| Typical Thermal Resistance (Note 4) | R _{θJA} | 85 | | | | | | | °C/W |
| | R _{θJL} | 35 | | | | | | | |
| Typical Junction Capacitance (Note 2) | C _J | 15 | | | | | 10 | | pF |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to + 150 | | | | | | | °C |

ELECTRICAL CHARACTERISTICS (@TA=25 °C unless otherwise noted)

| CHARACTERISTICS | SYMBOL | ES1A | ES1B | ES1C | ES1D | ES1E | ES1G | ES1J | UNITS | |
|---|-----------------|-------------------------|------|------|------|------|------|------|-------|-------|
| Maximum Instantaneous Forward Voltage at 1.0ADC | V _F | 0.95 | | | 1.25 | | 1.70 | | Volts | |
| Maximum DC Reverse Current at Rated DC Blocking Voltage | I _R | @T _A = 25°C | | | | | | | 0.5 | μAmps |
| | | @T _A = 150°C | | | | | | | 2.0 | mAmps |
| Maximum Reverse Recovery Time (Note 1) | t _{rr} | 35 | | | | | | | nSec | |

- NOTES : 1. Reverse Recovery Test Conditions: I_F = 0.5A, I_R = -1.0A, I_{RR} = -0.25A
 2. Measured at 1 MHz and applied reverse voltage of 4.0 volts
 3. Thermal Resistance : Mounted on PCB.

RATING AND CHARACTERISTICS CURVES (ES1A THRU ES1J)

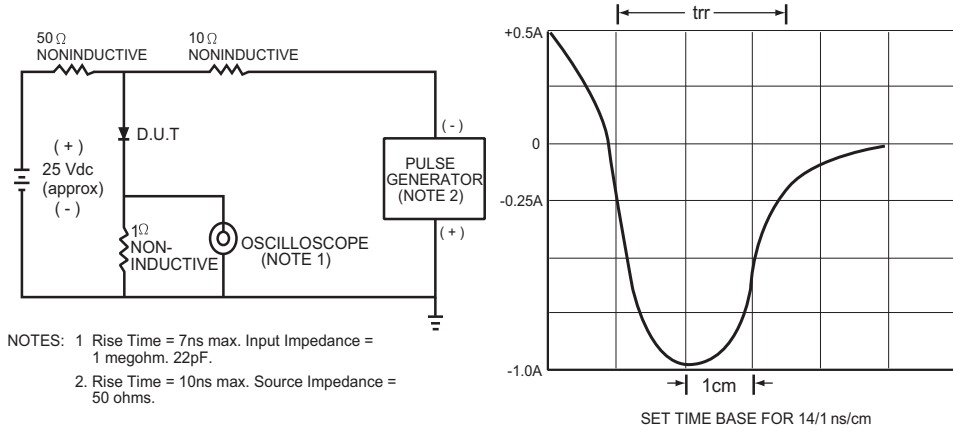


FIG.1 TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

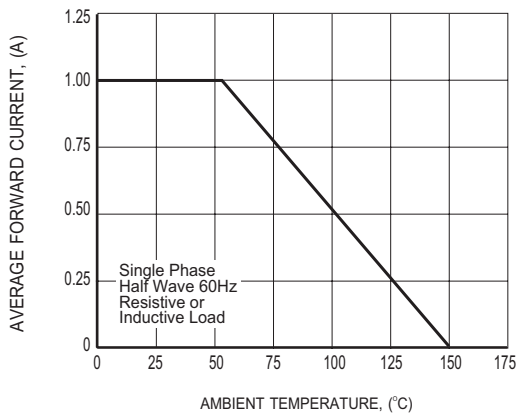


FIG.2 TYPICAL FORWARD CURRENT DERATING CURVE

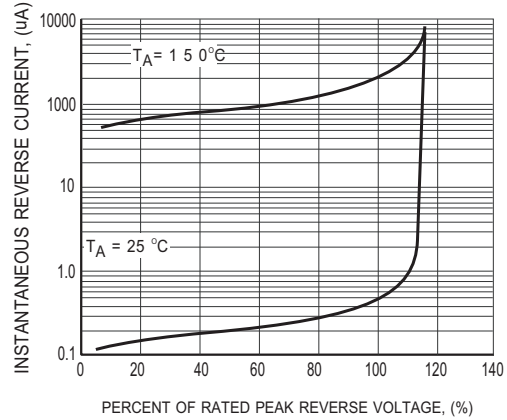


FIG.3 MAXIMUM REVERSE CHARACTERISTICS

RATING AND CHARACTERISTICS CURVES (ES1A THRU ES1J)

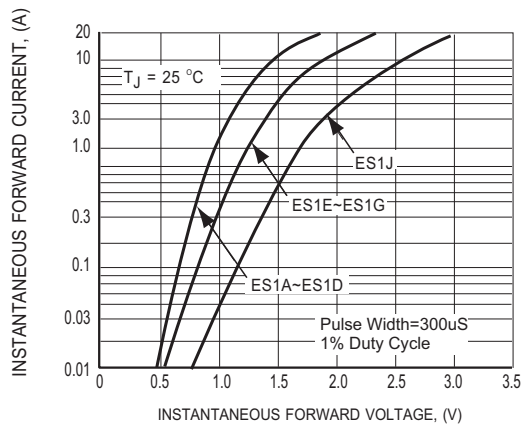


FIG.4 MAXIMUM INSTANTANEOUS FORWARD CHARACTERISTICS

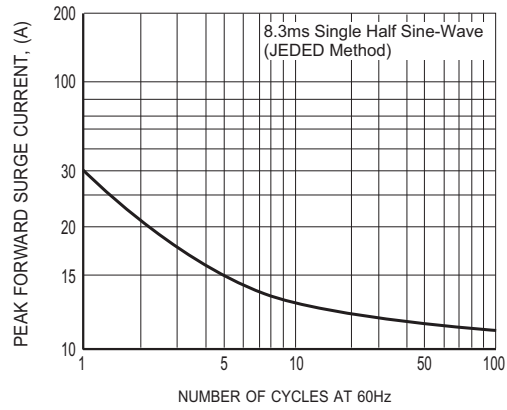


FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

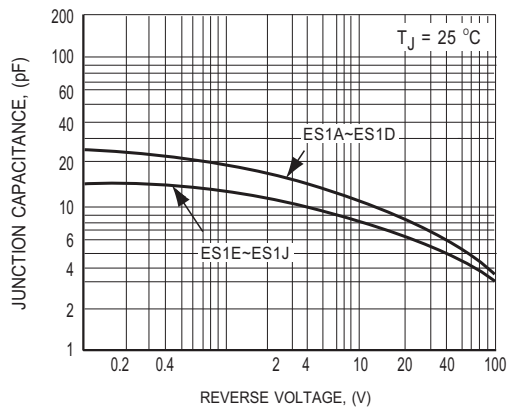
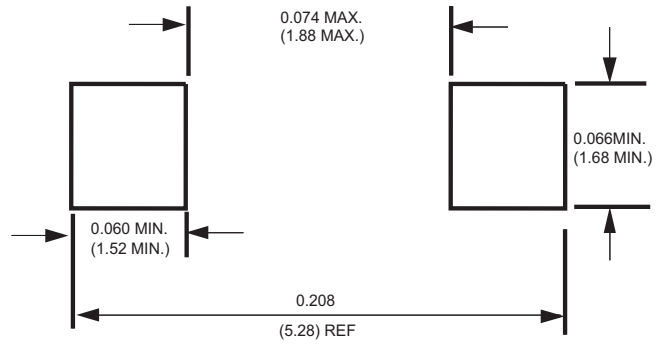


FIG.6 TYPICAL JUNCTION CAPACITANCE

Mounting Pad Layout



Dimensions in inches and (millimeters)

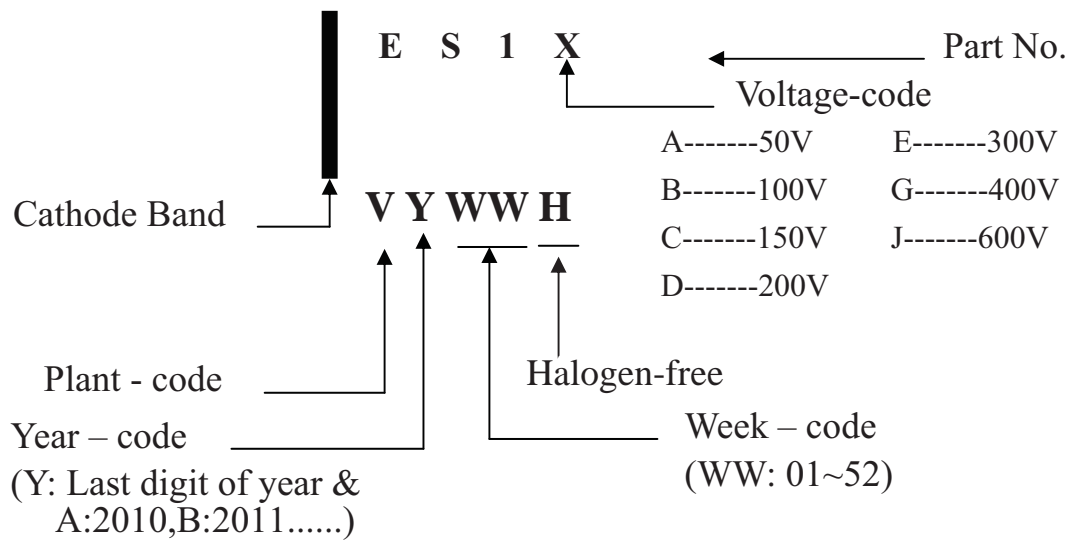


Attachment information about ES1X

1. Internal Circuit



2. Marking on the body





Attachment information about ES1X

3. Items marked on the reel box and carton

3.1 On the reel (for -T & -W)

CUSTOMER

TYPE

QUANTITY

LOT NO.

Q.A.

REMARK

3.2 On the box (for -T & -W)

TYPE

QUANTITY

LOT NO.

Q.A.

3.3 On the carton

CUSTOMER

TYPE

QUANTITY

LOT NO.

REMARK

PACKAGING OF DIODE AND BRIDGE RECTIFIERS

REEL PACK

| PACKAGE | PACKING CODE | EA PER REEL | EA PER INNER BOX | COMPONENT SPACE (mm) | TAPE SPACE (mm) | REEL DIA (mm) | CARTON SIZE (mm) | EA PER CARTON | GROSS WEIGHT(Kg) |
|---------|--------------|-------------|------------------|----------------------|-----------------|---------------|------------------|---------------|------------------|
| SMA | -W | 7,500 | 15,000 | --- | --- | 330 | 360*355*360 | 120,000 | 15.2 |

| PACKAGE | PACKING CODE | EA PER REEL | EA PER INNER BOX | COMPONENT SPACE (mm) | TAPE SPACE (mm) | REEL DIA (mm) | CARTON SIZE (mm) | EA PER CARTON | GROSS WEIGHT(Kg) |
|---------|--------------|-------------|------------------|----------------------|-----------------|---------------|------------------|---------------|------------------|
| SMA | -T | 2,000 | 8,000 | --- | --- | 178 | 390*205*310 | 64,000 | 7.8 |