



# BAS21A-AU~BAS21S-AU

## SURFACE MOUNT, HIGH VOLTAGE, DUAL SWITCHING DIODES

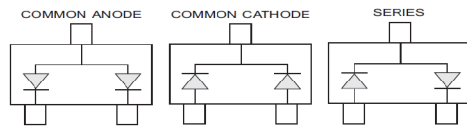
<b>Voltage</b>	<b>250 V</b>	<b>Power</b>	<b>250 mW</b>
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### Features

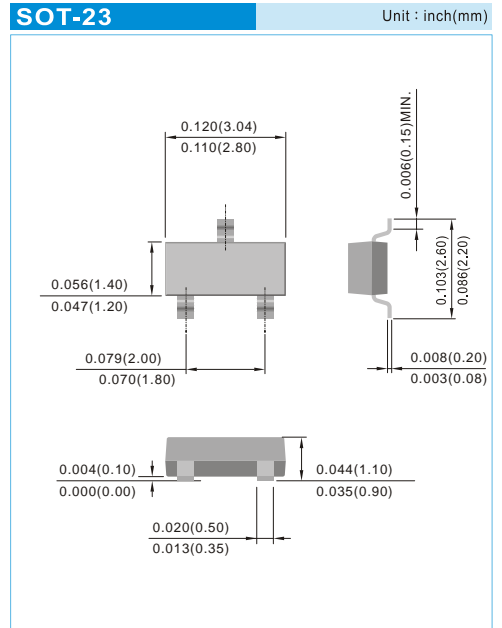
- High reverse breakdown voltage.
- Fast switching speed.
- Low reverse leakage current.
- Surface mount package ideally suited for automatic insertion.
- Galvanically isolated dual configurations to save board space.
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case: SOT-23 plastic case
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.008 grams
- Marking: BAS21A-AU:21A, BAS21C-AU:21C, BAS21S-AU:21S



BAS21A-AU BAS21C-AU BAS21S-AU



### ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Maximum reverse voltage	$V_R$	250	V
Peak reverse voltage	$V_{RRM}$	250	V
Average rectified current at temp=25 °C	$I_o$	0.2	A
Non-repetitive peak forward surge current at t=1μs	$I_{FSM}$	4	A



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## THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation	P <sub>TOT</sub>	250	mW
Power dissipation (Note 3)	P <sub>TOT</sub>	500	mW
Typical thermal resistance (Note 1)	R <sub>θJA</sub>	357	°C/W
Typical thermal resistance (Note 3)	R <sub>θJA</sub>	250	°C/W
Typical thermal resistance (Note 2)	R <sub>θJC</sub>	250	°C/W
	R <sub>θJL</sub>	285	
Junction temperature range	T <sub>J</sub>	150	°C
Storage temperature range	T <sub>STG</sub>	-55 to +150	°C

Notes : 1. Mounted on a FR-4 PCB, single-sided copper, mini pad.

2. Mounted on a FR-4 PCB, single-sided copper, with 100cm<sup>2</sup> copper pad area.

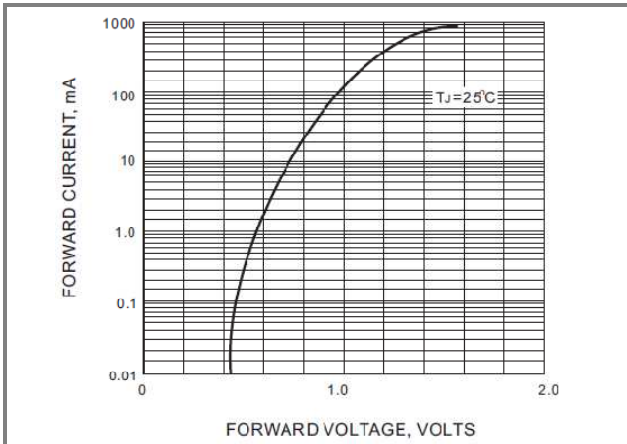
3. R<sub>θJA</sub> is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins mounted on a 1 inch FR-4 with 2oz. square pad of copper.

## ELECTRICAL CHARACTERISTICS (T<sub>J</sub>=25 °C, unless otherwise noted)

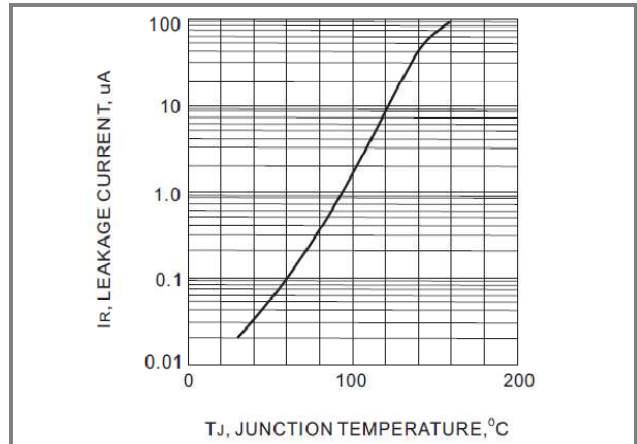
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP	MAX.	UNIT
Reverse breakdown voltage	V <sub>(BR)</sub>	I <sub>R</sub> =100μA	250	-	-	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> =200V	-	-	0.1	μA
		V <sub>R</sub> =200V T <sub>J</sub> =150°C	-	-	100	
Forward voltage	V <sub>F</sub>	I <sub>F</sub> =1mA	-	-	0.7	V
		I <sub>F</sub> =100mA	-	-	1	
Maximum junction capacitance	C <sub>J</sub>	V <sub>R</sub> =0V, f=1MHz	-	-	5	pF
Reverse recovery time	T <sub>RR</sub>	I <sub>F</sub> = I <sub>R</sub> =30mA R <sub>L</sub> =100Ω	-	-	50	ns



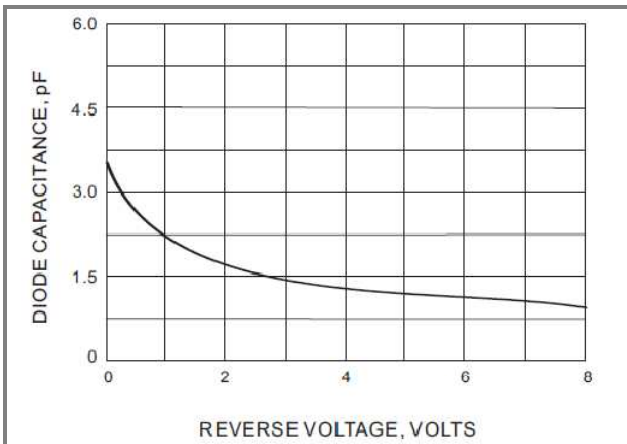
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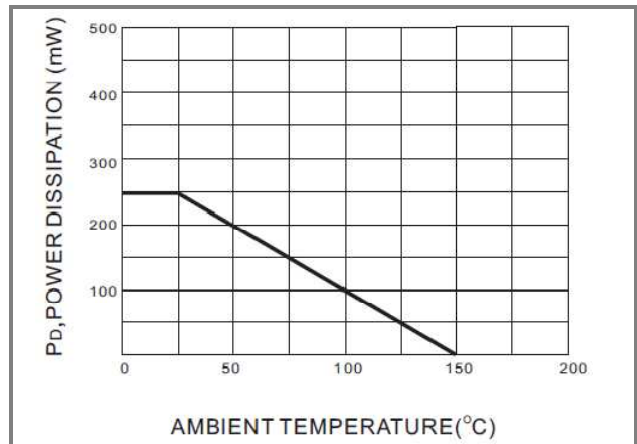
**Fig.1 Typical Forward Characteristic**



**Fig.2 Leakage Current VS. Junction Temperature**



**Fig.3 Typical Junction Capacitance**

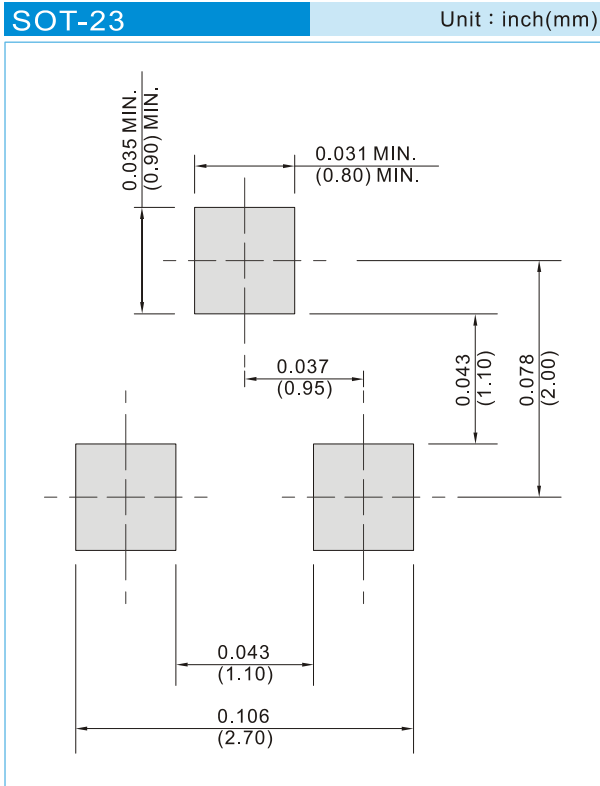


**Fig.4 Power Derating Curve**



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## MOUNTING PAD LAYOUT



## ORDER INFORMATION

- Packing information  
T/R – 12K per 13" plastic Reel  
T/R – 3K per 7" plastic Reel



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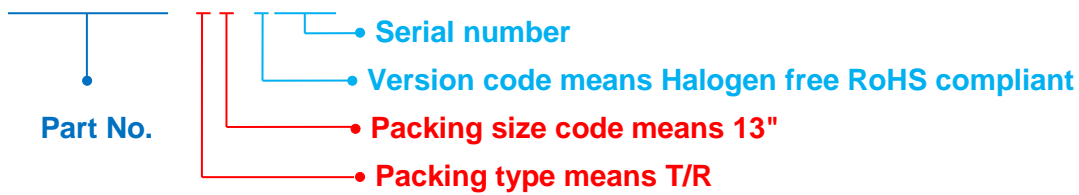
**Part No.\_packing code\_Version**

BAS21A-AU\_R1\_000A1

BAS21A-AU\_R2\_000A1

**For example :**

**RB500V-40\_R2\_00001**



Packing Code <b>XX</b>				Version Code <b>X</b>		Serial number <b>XXXX</b>
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HSF Level	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	<b>A</b>	N/A	<b>0</b>	Halogen free RoHS compliant	<b>0</b>	serial number
Tape and Reel (T/R)	<b>R</b>	7"	<b>1</b>	RoHS compliant	<b>1</b>	serial number
Bulk Packing (B/P)	<b>B</b>	13"	<b>2</b>			
Tube Packing (T/P)	<b>T</b>	26mm	<b>X</b>			
Tape and Reel (Right Oriented) (TRR)	<b>S</b>	52mm	<b>Y</b>			
Tape and Reel (Left Oriented) (TRL)	<b>L</b>	PANASERT T/B CATHODE UP (PBCU)	<b>U</b>			
FORMING	<b>F</b>	PANASERT T/B CATHODE DOWN (PBCD)	<b>D</b>			