

### Surface Mount Switching Diode

**(Pb)** Lead(Pb)-Free

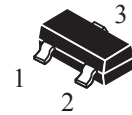
#### Features:

- \*Fast Switching Speed
- \*Surface Mount Package Ideally Suited for Automatic Insertion
- \*For General Purpose Switching Applications
- \*High Conductance

#### Mechanical Data:

- \*Case: SOT-23, Molded Plastic
- \*Terminals: Solderable per MIL-STD-202, Method 208
- \*Polarity: See diagram
- \*Weight: 0.008 grams

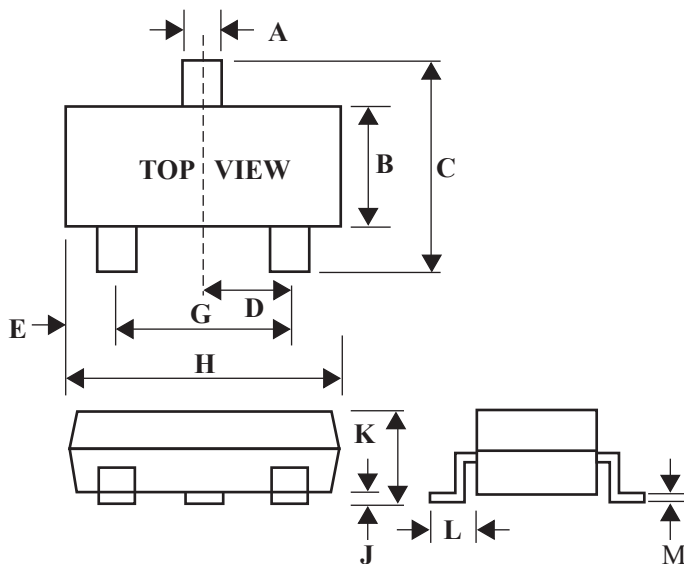
**SWITCHING DIODE**  
**100m AMPERRES**  
**70 VOLTS**



**SOT-23**

### SOT-23 Outline Dimensions

Unit:mm



Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25

## Maximum Ratings ((TA=25°C Unless Otherwise Note)

Characteristic	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V <sub>RM</sub>	100	Volts
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RW</sub> V <sub>R</sub>	70	Volts
RMS Reverse Voltage	V <sub>R(RMS)</sub>	53	Volts
Forward Continuous Current <sup>(1)</sup>	I <sub>FM</sub>	100	mA
Non-Repetitive Peak Forward @ t=1.0us Surge Current @ t=1.0s	I <sub>FSM</sub>	2.0 1.0	A
Power Dissipation <sup>(1)</sup>	P <sub>d</sub>	350	mW
Thermal Resistance Junction to Ambient Air <sup>(1)</sup>	R <sub>θJA</sub>	357	°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-65 to + 150	°C

## Electrical Characteristics (TA=25°C Unless Otherwise Note) (Each Diode)

Characteristic	Symbol	Min	Max	Unit
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## Off Characteristics

Forward Voltage <sup>(2)</sup>	I <sub>F</sub> =1.0mA I <sub>F</sub> =10mA I <sub>F</sub> =50mA I <sub>F</sub> =150mA	V <sub>F</sub>	-	0.715 0.855 1.0 1.25	Volts
Reverse Current <sup>(2)</sup>	V <sub>R</sub> =70V V <sub>R</sub> =75V, T <sub>j</sub> =150°C V <sub>R</sub> =25V, T <sub>j</sub> =150°C V <sub>R</sub> =20V	I <sub>R</sub>	-	2.5 50 30 25	uA uA uA nA
Total Capacitance	V <sub>R</sub> =0, f=1.0MHz	C <sub>T</sub>	-	2.0	Pf
Reverse Recovery Time	I <sub>F</sub> =I <sub>R</sub> =10mA, I <sub>rr</sub> =0.1×I <sub>R</sub> , R <sub>L</sub> =100Ω	t <sub>rr</sub>	-	6.0	ns

Note:

1. Part mounted on FR-4 board with recommended pad layout.
2. Short duration pulse test used to minimize self-heating effect.

## Device Marking

Item	Marking	Equivalent Circuit diagram
BAL99	JF	

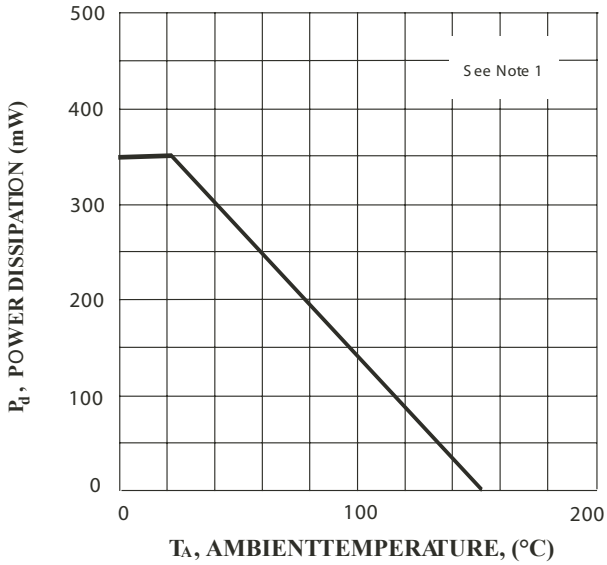


FIG1. Power Derating Curve

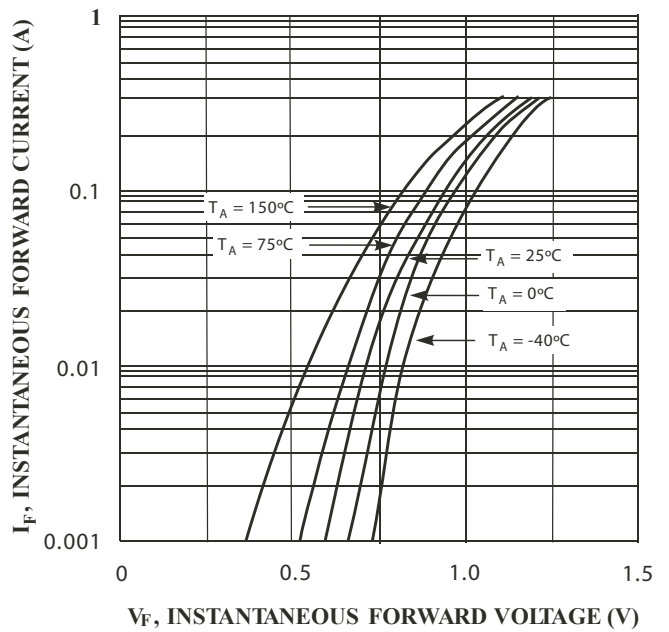


FIG2. Forward Characteristics

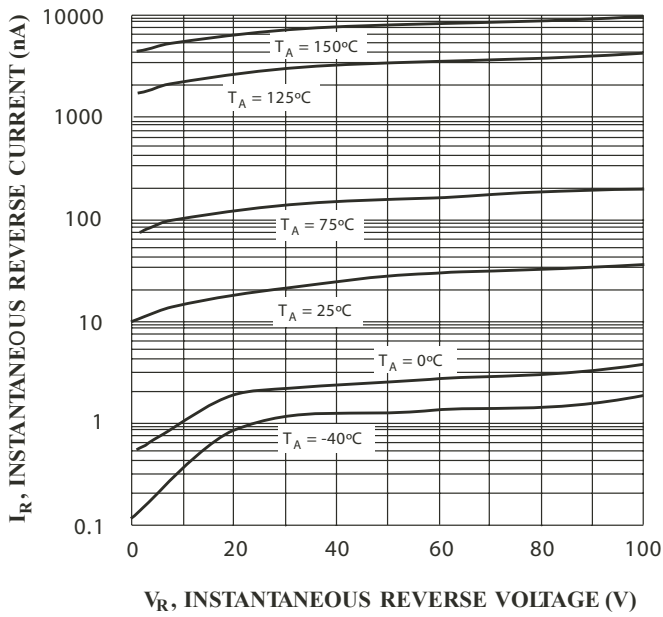


FIG3. Typical Reverse Characteristics

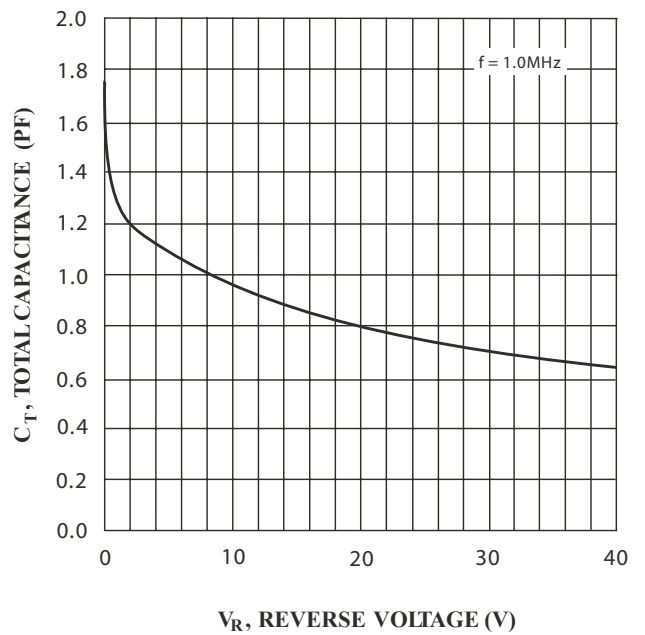


FIG4. Typical Capacitance vs. Reverse Voltage