



HBAV99

HIGH-SPEED SWITCHING DIODE

Description

The HBAV99 consists of two diodes in a plastic surface mount package. The diodes are connected in series and the unit is designed for high-speed switching application in hybrid thick and thin-film circuits.

Features

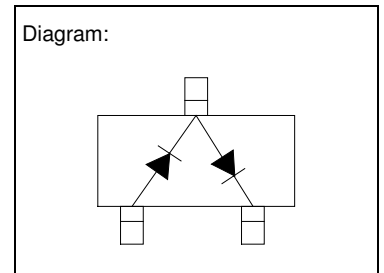
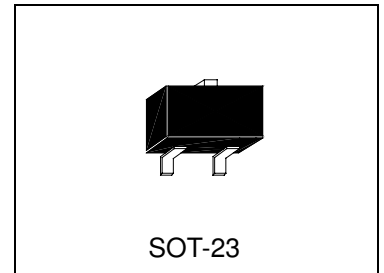
- Small SMD Package (SOT-23)
- Ultra-high Speed
- Low Forward Voltage
- Fast Reverse Recovery Time

Absolute Maximum Ratings

- Maximum Temperatures
 - Storage Temperature -65 ~ +150 °C
 - Junction Temperature +150 °C
- Maximum Power Dissipation
 - Total Power Dissipation (T_A=25°C) 250 mW
- Maximum Voltages and Currents (T_A=25°C)
 - Reverse Voltage 70 V
 - Repetitive Reverse Voltage 70 V
 - Forward Current 150 mA
 - Repetitive Forward Current 500 mA
 - Forward Surge Current (1ms) 1000 mA

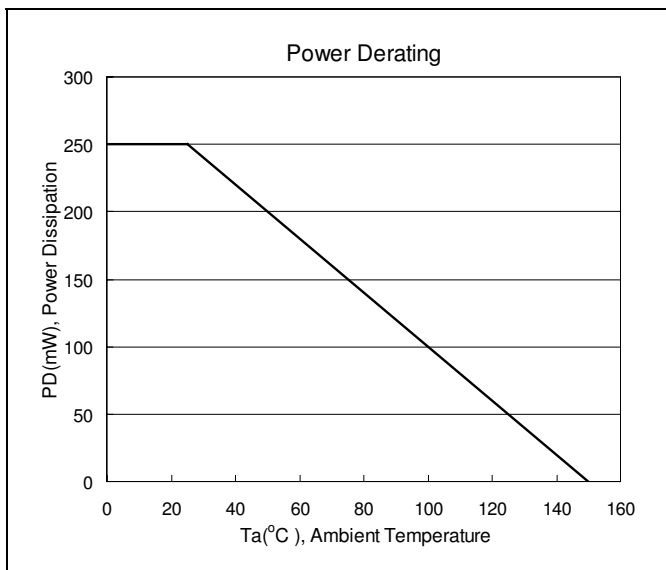
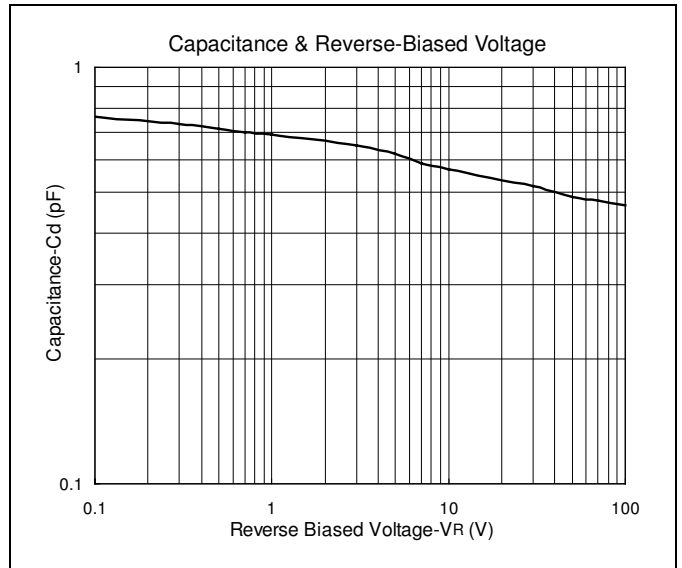
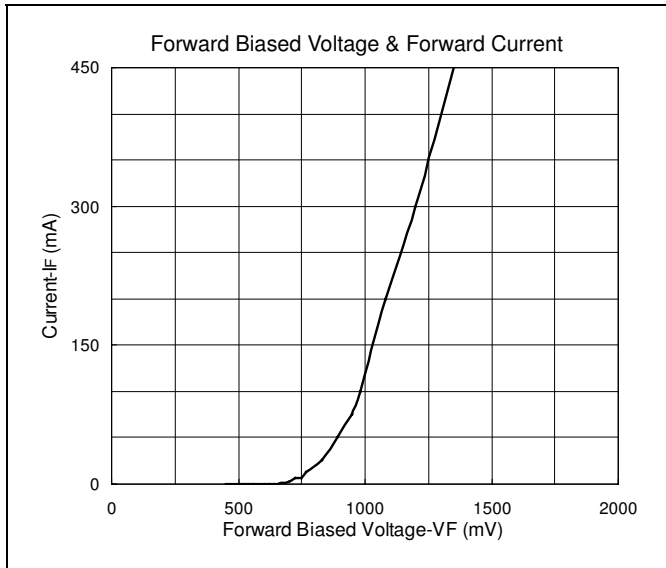
Electrical Characteristics (T_A=25°C)

Characteristic	Symbol	Condition	Min	Max	Unit
Reverse Breakdown Voltage	V _(BR)	I _R =100uA	70	-	V
Forward Voltage	V _{F(1)}	I _F =1mA	-	715	mV
	V _{F(2)}	I _F =10mA	-	855	mV
	V _{F(3)}	I _F =50mA	-	1000	mV
	V _{F(4)}	I _F =150mA	-	1250	mV
Reverse Current	I _R	V _R =70	-	2.5	uA
Total Capacitance	C _T	V _R =0, f=1MHz	-	1.5	pF
Reverse Recovery Time	T _{rr}	I _F =I _R =10mA, R _L =100Ω, measured at I _R =1mA	-	6	nS





Characteristics Curve





SOT-23 Dimension

3-Lead SOT-23 Plastic
Surface Mounted Package
HSMC Package Code: N

Marking:

Pb Free Mark
Pb-Free: "●" (Note)
Normal: None

Note: Pb-free product can distinguish by the green label or the extra description on the right side of the label.

Pin Style: 1.Anode 2.Cathode
3.Common Connection

Material:

- Lead solder plating: Sn60/Pb40 (Normal), Sn/3.0Ag/0.5Cu or Pure-Tin (Pb-free)
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

DIM	Min.	Max.
A	2.80	3.04
B	1.20	1.60
C	0.89	1.30
D	0.30	0.50
G	1.70	2.30
H	0.013	0.10
J	0.085	0.177
K	0.32	0.67
L	0.85	1.15
S	2.10	2.75
V	0.25	0.65

*: Typical, Unit: mm

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Soldering Methods for HSMC's Products

1. Storage environment: Temperature=10°C~35°C Humidity=65%±15%
2. Reflow soldering of surface-mount devices



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	<3°C/sec	<3°C/sec
Preheat		
- Temperature Min (T_{smin})	100°C	150°C
- Temperature Max (T_{smax})	150°C	200°C
- Time (min to max) (t_s)	60~120 sec	60~180 sec
T_{smax} to T_L		
- Ramp-up Rate	<3°C/sec	<3°C/sec
Time maintained above:		
- Temperature (T_L)	183°C	217°C
- Time (t_L)	60~150 sec	60~150 sec
Peak Temperature (T_P)	240°C +0/-5°C	260°C +0/-5°C
Time within 5°C of actual Peak Temperature (t_p)	10~30 sec	20~40 sec
Ramp-down Rate	<6°C/sec	<6°C/sec
Time 25°C to Peak Temperature	<6 minutes	<8 minutes

3. Flow (wave) soldering (solder dipping)

Products	Peak temperature	Dipping time
Pb devices.	245°C ±5°C	5sec ±1sec
Pb-Free devices.	260°C +0/-5°C	5sec ±1sec