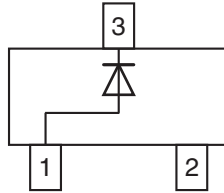




### Small Signal Switching Diode



#### FEATURES

- Silicon epitaxial planar diode
- Fast switching diode in case SOT-23, especially suited for automatic insertion
- AEC-Q101 qualified available
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS COMPLIANT

DESIGN SUPPORT TOOLS click logo to get started



#### MECHANICAL DATA

Case: SOT-23

Weight: approx. 8.8 mg

Packaging codes / options:

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

PARTS TABLE				
PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
MMBD6050	MMBD6050-E3-08 or MMBD6050-E3-18	Single	5AM	Tape and reel
	MMBD6050-HE3-08 or MMBD6050-HE3-18			

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Continuous reverse voltage		V <sub>R</sub>	70	V
Forward current		I <sub>F</sub>	200	mA
Peak forward surge current		I <sub>FSM</sub>	500	mA
Maximum power dissipation on FR-5 board <sup>(1)</sup>		P <sub>tot</sub>	225	mW
	Derate above 25 °C	P <sub>tot</sub>	1.8	mW/°C
Maximum power dissipation on alumina substrate <sup>(2)</sup>		P <sub>tot</sub>	300	mW
	Derate above 25 °C	P <sub>tot</sub>	2.4	mW/°C

#### Notes

<sup>(1)</sup> FR-5 = 1.0" x 0.75" x 0.062"

<sup>(2)</sup> Alumina = 0.4" x 0.3" x 0.024" 99.5 % alumina

THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance FR-5		R <sub>thJA</sub>	556	°C/W
Junction to ambient alumina		R <sub>thJA</sub>	417	°C/W
Maximum junction temperature		T <sub>j</sub>	150	°C
Storage temperature range		T <sub>stg</sub>	-55 to +150	°C
Operating temperature range		T <sub>op</sub>	-55 to +150	°C



ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 100\text{ }\mu\text{A}$	$V_{(BR)}$	70			V
Forward voltage	$I_F = 1\text{ mA}$	$V_F$	0.55		0.7	V
	$I_F = 100\text{ mA}$	$V_F$	0.85		1.1	V
Reverse leakage current	$V_R = 50\text{ V}$	$I_R$			100	nA
Reverse recovery time	$I_F = I_R = 10\text{ mA}$ , $i_R = 1\text{ mA}$	$t_{rr}$			4	ns
Diode capacitance	$V_R = 0$	$C_D$			2.5	pF

**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

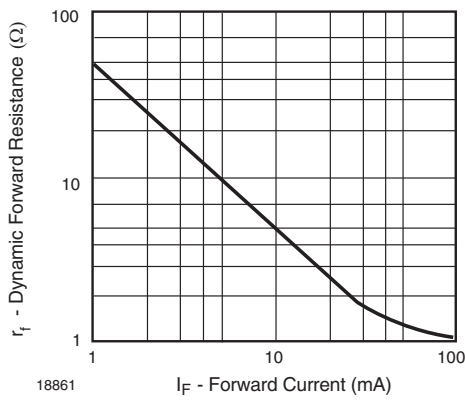


Fig. 1 - Dynamic Forward Resistance vs. Forward Current

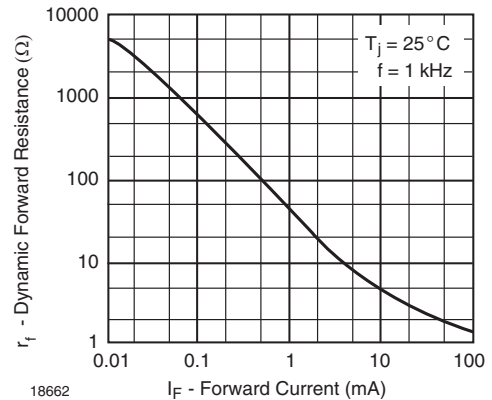


Fig. 3 - Dynamic Forward Resistance vs. Forward Current

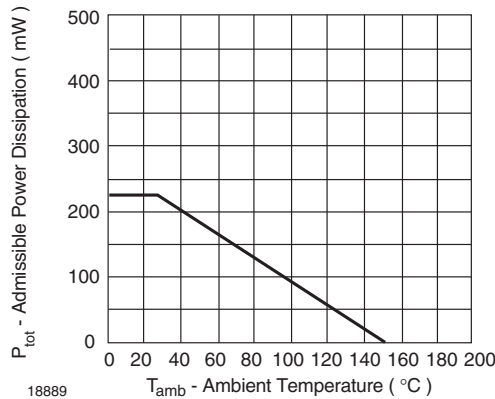


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

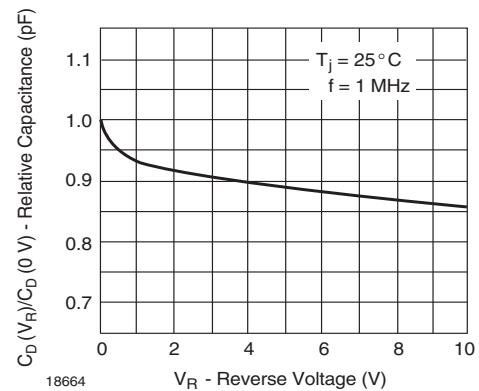


Fig. 4 - Relative Capacitance vs. Reverse Voltage

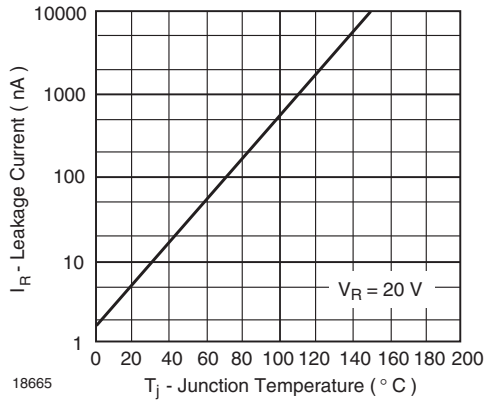


Fig. 5 - Leakage Current vs. Junction Temperature

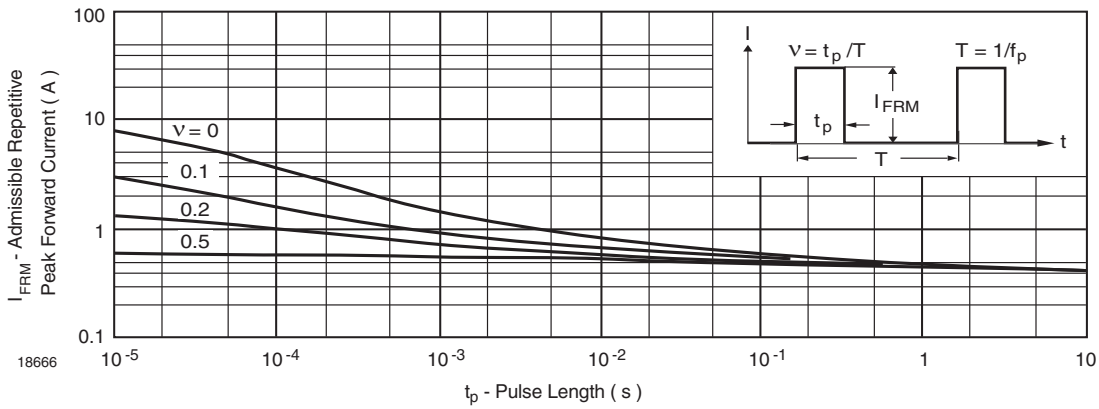
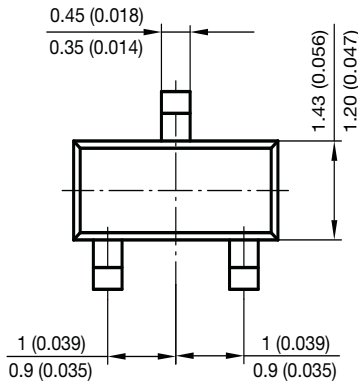
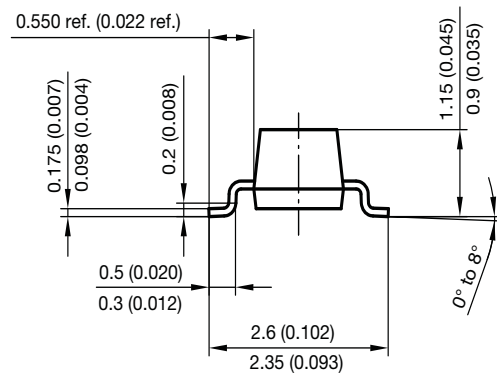
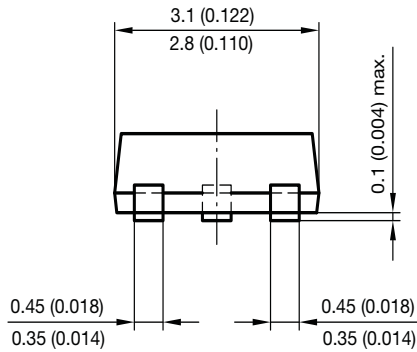


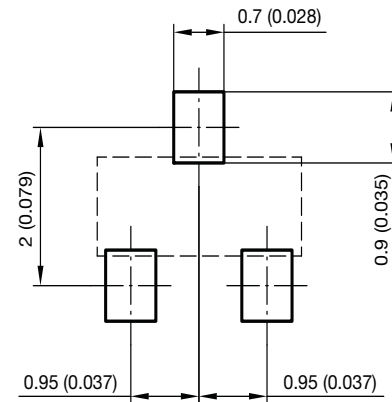
Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration



PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:



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Rev. 8 - Date: 23.Sept.2009  
17418



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