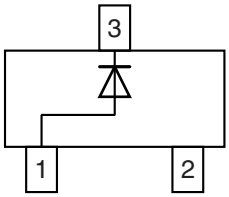
Small Signal Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Fast switching diode in case SOT-23, especially suited for automatic insertion.
- AEC-Q101 qualified
- 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

Pb-free

e3

RoHS COMPLIANT

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**	**INTERNAL CONSTRUCTION**	**TYPE MARKING**	**REMARKS**
MMBD6050	MMBD6050-E3-08 or MMBD6050-E3-18	Single diode	5AM	Tape and reel
	MMBD6050-HE3-08 or MMBD6050-HE3-18			

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	**TEST CONDITION**	**SYMBOL**	**VALUE**	**UNIT**
Continuous reverse voltage		V_R	70	V
Forward current		I_F	200	mA
Peak forward surge current		I_{FSM}	500	mA
Maximum power dissipation on FR-5 board (1)		P_{tot}	225	mW
	Derate above 25 °C	P_{tot}	1.8	mW/°C
Maximum power dissipation on alumina substrate (2)		P_{tot}	300	mW
	Derate above 25 °C	P_{tot}	2.4	mW/°C

Notes

(1) FR-5 = 1.0" x 0.75" x 0.062".

(2) Alumina = 0.4" x 0.3" x 0.024" 99.5 % alumina

THERMAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	**TEST CONDITION**	**SYMBOL**	**VALUE**	**UNIT**
Thermal resistance FR-5		R_{thJA}	556	°C/W
Junction to ambient alumina		R_{thJA}	417	°C/W
Maximum junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	- 55 to + 150	°C
Operating temperature range		T_{op}	- 55 to + 150	°C

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

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

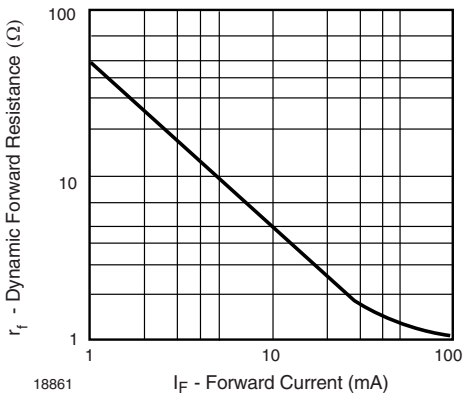


Fig. 1 - Dynamic Forward Resistance vs. Forward Current

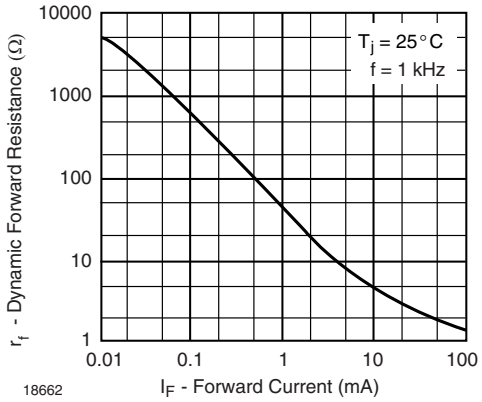


Fig. 3 - Dynamic Forward Resistance vs. Forward Current

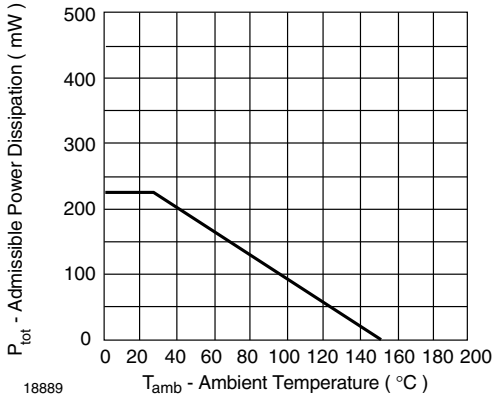


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

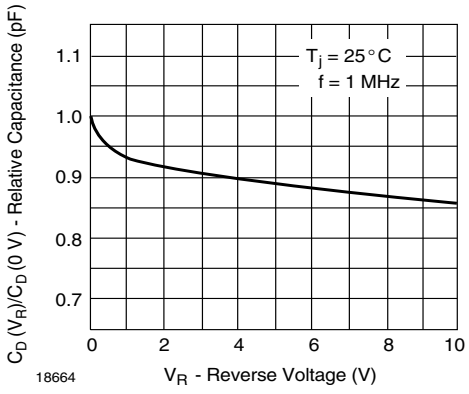


Fig. 4 - Relative Capacitance vs. Reverse Voltage

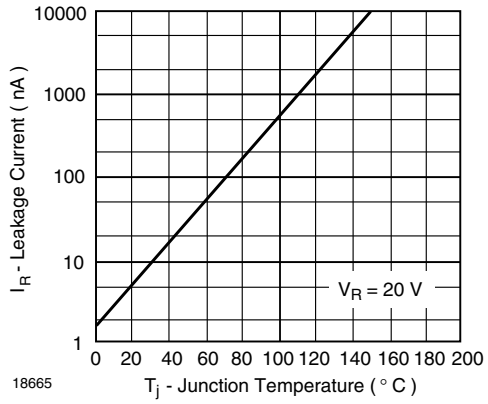


Fig. 5 - Leakage Current vs. Junction Temperature

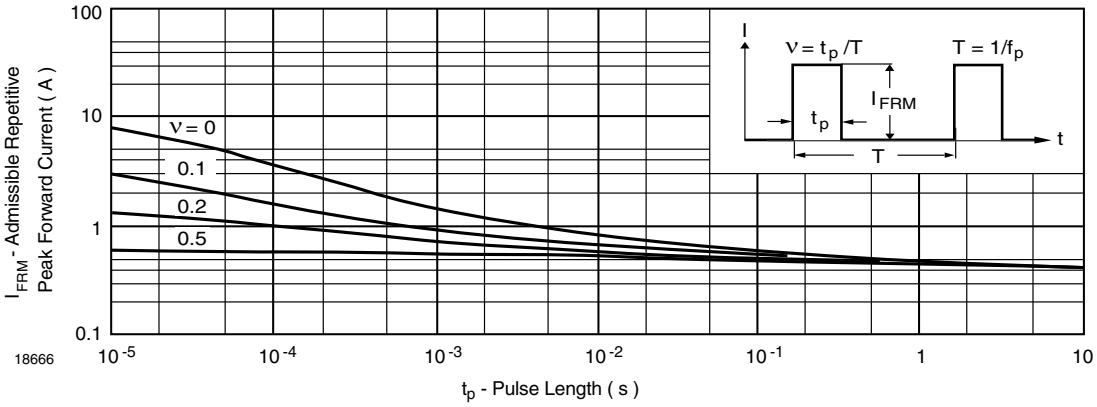
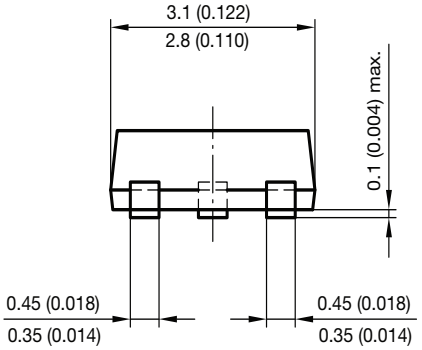
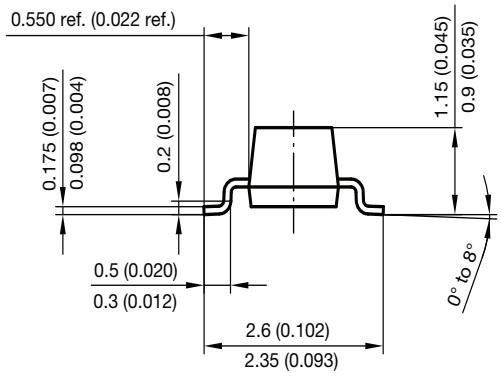
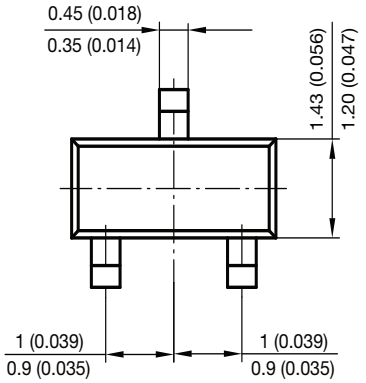


Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration

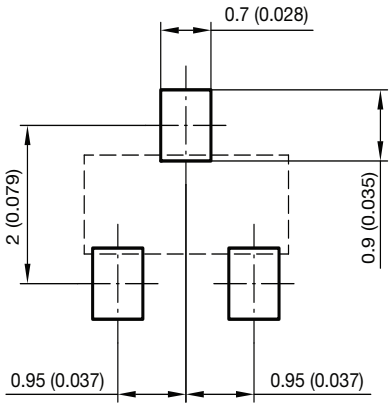
PACKAGE DIMENSIONS in millimeters (inches): **SOT-23**







Foot print recommendation:



Document no.: 6.541-5014.01-4
Rev. 8 - Date: 23.Sept.2009
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