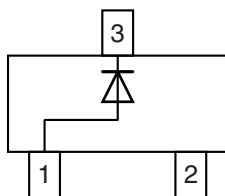
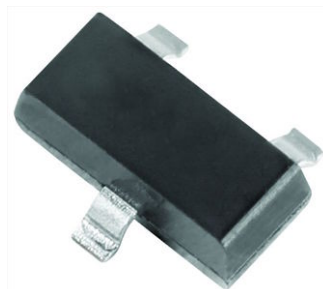


Small Signal Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Fast switching diode in case SOT-23, especially suited for automatic insertion
- AEC-Q101 qualified available
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level (MSL) 1
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3_A - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE
GRADE
Available



RoHS
COMPLIANT

LINKS TO ADDITIONAL RESOURCES



3D Models



Models



Marking



Parametric Search



Order Samples

MECHANICAL DATA

Case: SOT-23

Weight: approx. 9.2 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	AEC-Q101 QUALIFIED	TYPE MARKING	CIRCUIT CONFIGURATION	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
MMBD6050	MMBD6050-E3-08	no	5AG	Single	3 000 (8 mm tape on 7" reel)	15 000
	MMBD6050-HE3_A-08	yes				
	MMBD6050-18	no			10 000 (8 mm tape on 13" reel)	10 000
	MMBD6050_A-18	yes				

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Continuous reverse voltage		V_R	70	V
Forward current ⁽¹⁾	$t = 1\text{ s}$	I_F	350	mA
Peak forward surge current ⁽¹⁾		I_{FSM}	500	mA
Power dissipation	on FR-4 board with recommended soldering footprint	P_{tot}	270	mW
	Infinite heatsink		390	mW

Note

⁽¹⁾ Infinite heatsink

THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	according to JEDEC [®] 51-3 on FR-4 board with recommended soldering footprint	R_{thJA}	460	K/W
Thermal resistance junction to lead	Infinite heatsink	R_{thJL}	320	K/W
Maximum junction temperature		T_j	150	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	-65 to +150	$^{\circ}\text{C}$
Operating temperature range		T_{op}	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	MIN.	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		1.5	pF

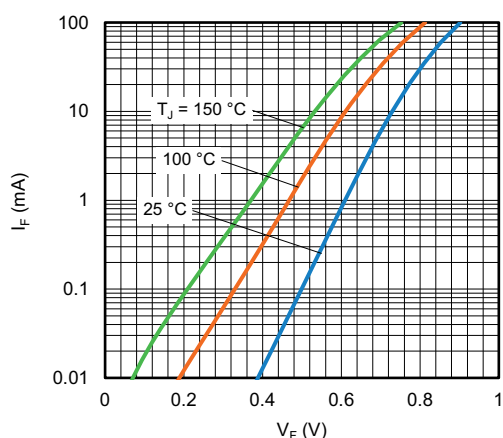
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

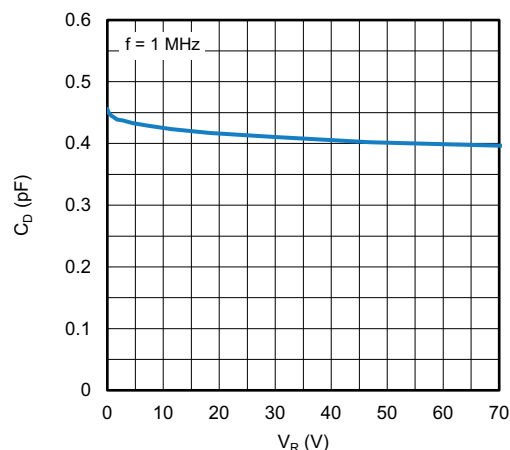


Fig. 3 - Typical Capacitance vs. Reverse Voltage

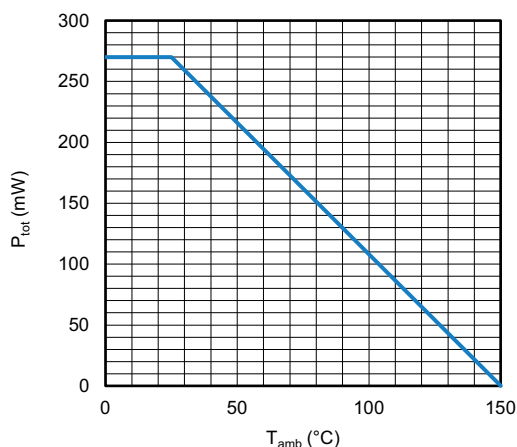


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

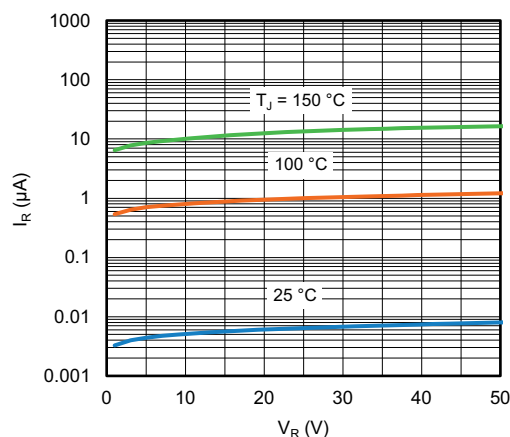
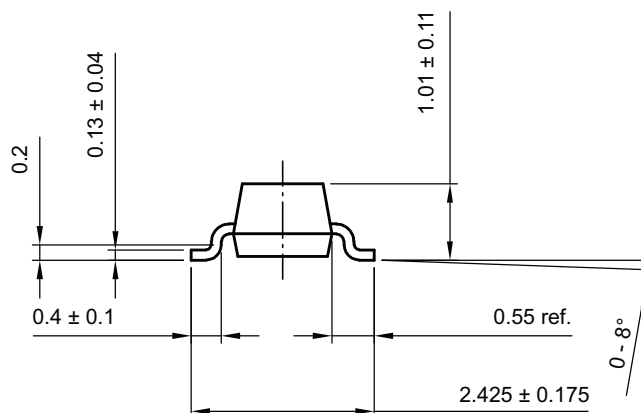


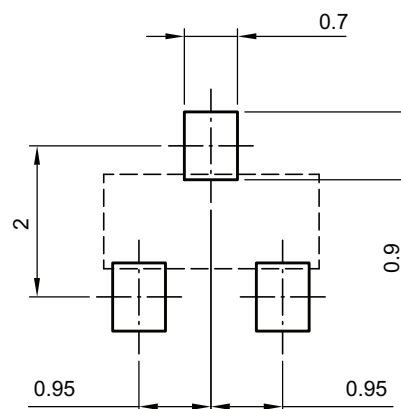
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



PACKAGE DIMENSIONS in millimeters: **SOT-23**



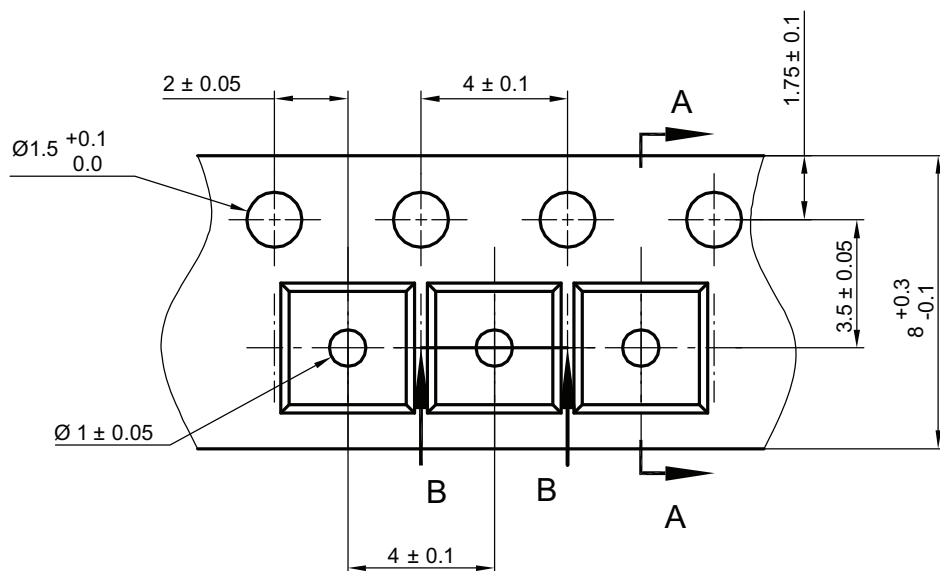
footprint recommendation:



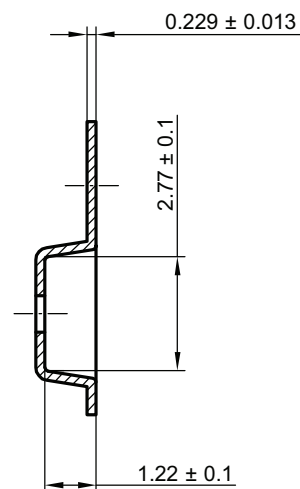
Created - Date: 18-Oct-2021
Rev. 01 - Date: 18-Jan-2022
S8-V-3929.01-009 (4)



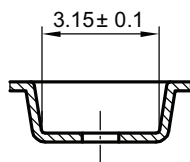
CARRIER TAPE SOT-23



A-A Section



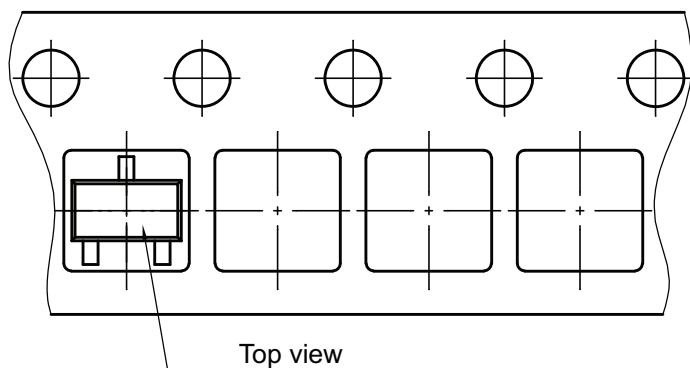
B-B Section



Created Date: 04-Feb-2010
Rev. Date: 07-Feb-2022
S8-V-3929.01-005 (4)

ORIENTATION IN CARRIER TAPE SOT-23

Unreeling direction



Created Date: 04-Feb-2010
Rev. Date: 07-Nov-2022
S8-V-3929.01-005 (4)



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