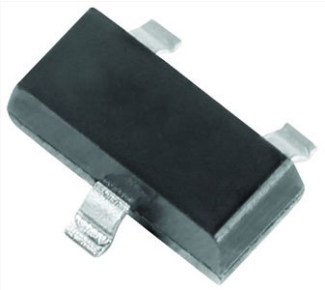
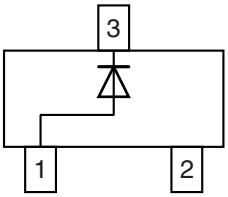
Small Signal Switching Diode





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

Pb-free

e3

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 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Continuous reverse voltage		V_R	70	V
Forward current (1)	t = 1 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 °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	°C
Storage temperature range		T_{stg}	-65 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.**	**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		1.5	pF

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

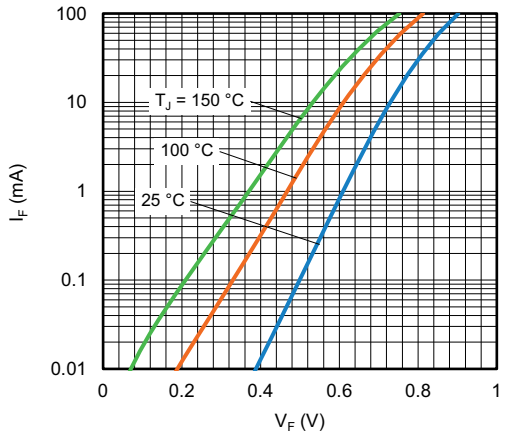


Fig. 1 - Forward Current vs. Forward Voltage

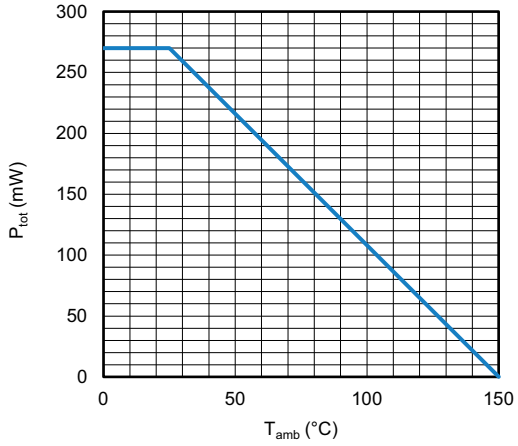


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

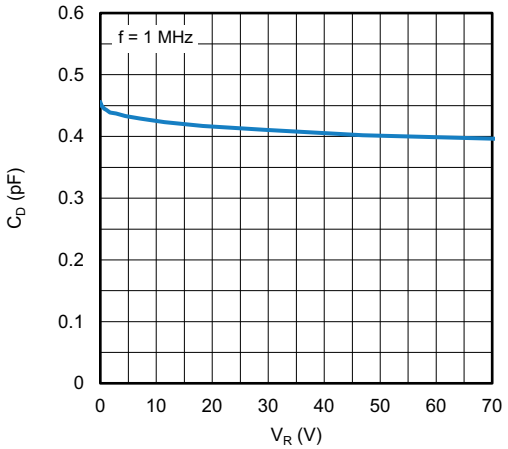


Fig. 3 - Typical Capacitance vs. Reverse Voltage

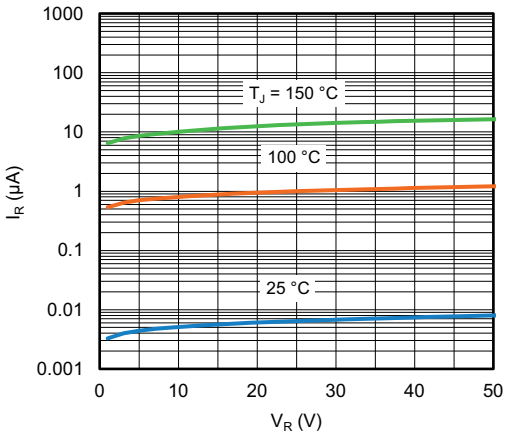
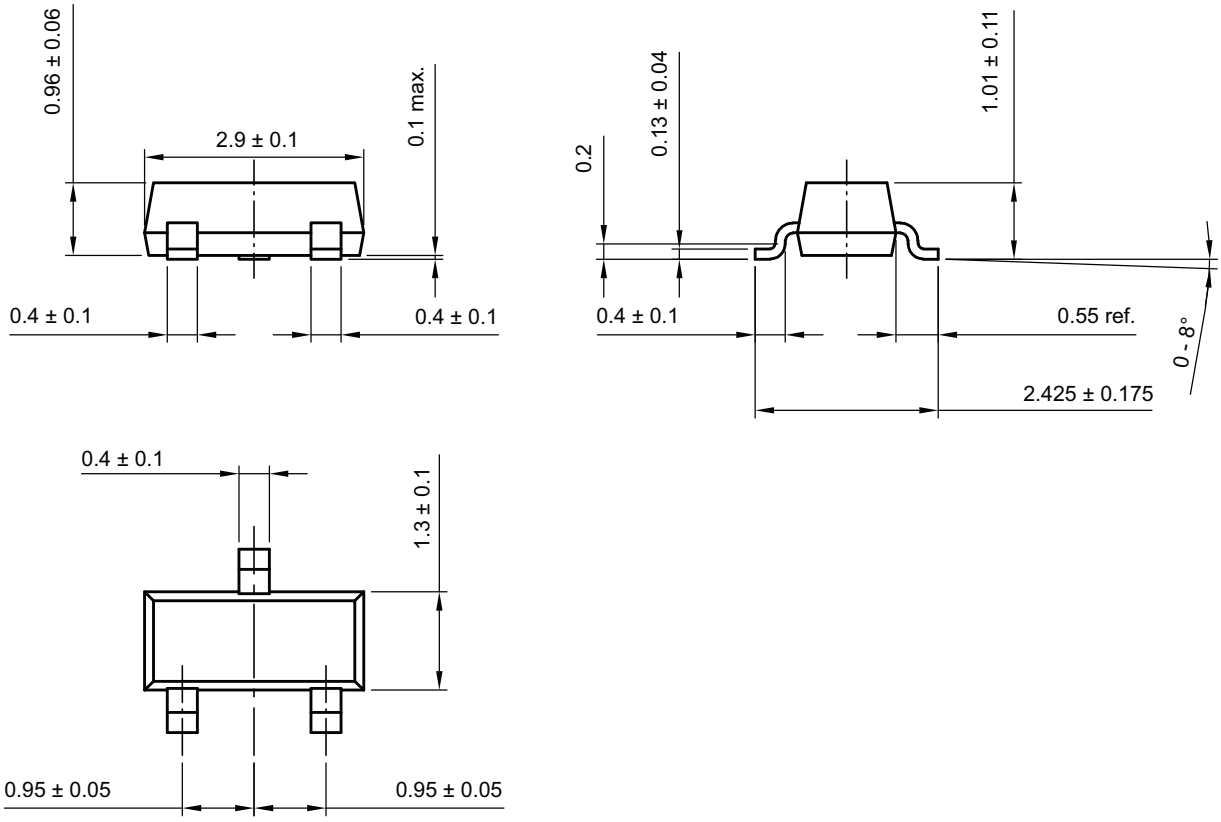
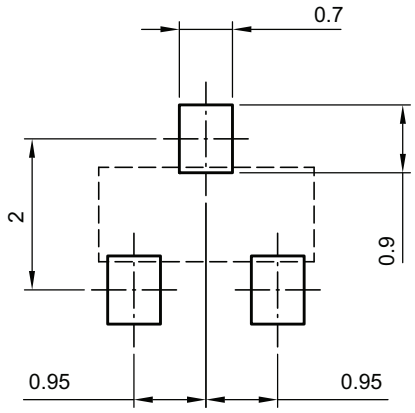


Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage

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



footprint recommendation:



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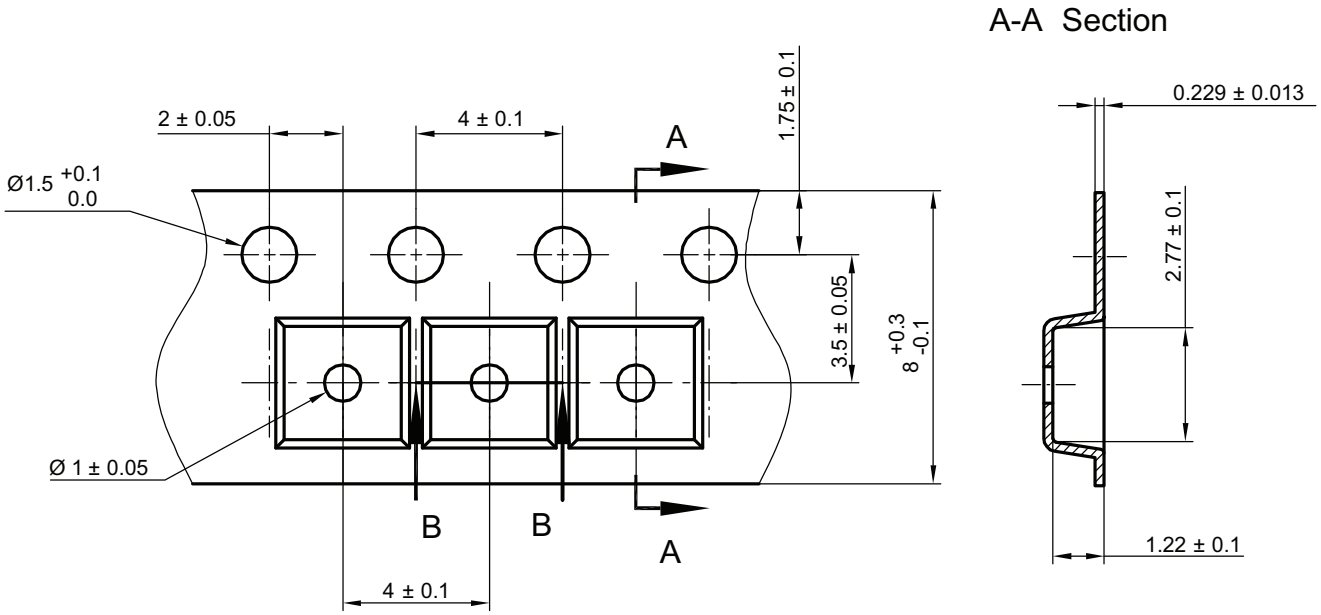
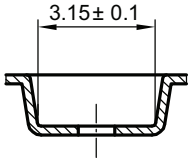
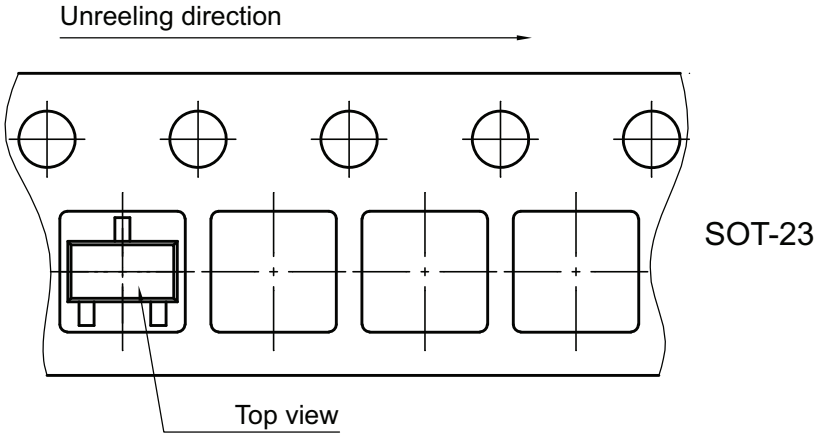
CARRIER TAPE SOT-23





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

ORIENTATION IN CARRIER TAPE SOT-23



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