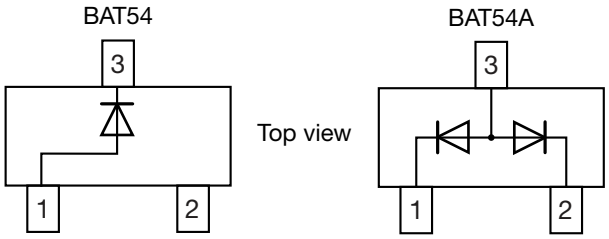
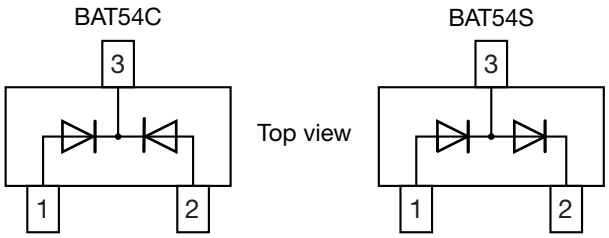
Small Signal Schottky Diodes, Single and Dual





FEATURES

- These diodes feature very low turn-on voltage and fast switching
- These devices are protected by a PN junction guardring against excessive voltage, such as electrostatic discharges
- 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 - 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

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

LINKS TO ADDITIONAL RESOURCES

3D Models | SPICE Models | Marking | Parametric Search | Order Samples

PARTS TABLE

PART	ORDERING CODE	AEC-Q101 QUALIFIED	TYPE MARKING	CIRCUIT CONFIGURATION	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
BAT54	BAT54-E3-08	no	L8	Single	3 000 (8 mm tape on 7” reel)	15 000
	BAT54-HE3_A-08	yes				
	BAT54-E3-18	no			10 000 (8 mm tape on 13” reel)	10 000
	BAT54-HE3_A-18	yes				
BAT54A	BAT54A-E3-08	no	L46	Dual serial	3 000 (8 mm tape on 7” reel)	15 000
	BAT54A-HE3_A-08	yes				
	BAT54A-E3-18	no			10 000 (8 mm tape on 13” reel)	10 000
	BAT54A-HE3_A-18	yes				
BAT54C	BAT54C-E3-08	no	L47	Common cathode	3 000 (8 mm tape on 7” reel)	15 000
	BAT54C-HE3_A-08	yes				
	BAT54C-E3-18	no			10 000 (8 mm tape on 13” reel)	10 000
	BAT54C-HE3_A-18	yes				
BAT54S	BAT54S-E3-08	no	L48	Common anode	3 000 (8 mm tape on 7” reel)	15 000
	BAT54S-HE3_A-08	yes				
	BAT54S-E3-18	no			10 000 (8 mm tape on 13” reel)	10 000
	BAT54S-HE3_A-18	yes				

PACKAGE				
PACKAGE NAME	**WEIGHT**	**MOLDING COMPOUND FLAMMABILITY RATING**	**MOISTURE SENSITIVITY LEVEL**	**SOLDERING CONDITIONS**
SOT-23	9.2 mg	UL 94 V-0	MSL 1 (according J-STD-020)	Peak temperature max. 260 °C

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	**TEST CONDITION**	**SYMBOL**	**VALUE**	**UNIT**
Repetitive peak reverse voltage		$V_{RRM} = V_{RWM} = V_R$	30	V
Forward continuous current (1)		I_F	200	mA
Repetitive peak forward current (1)		I_{FRM}	300	mA
Surge forward current (1)	$t_p < 1$ s	I_{FSM}	600	mA
Power dissipation	on FR-4 board with recommended soldering footprint	P_{tot}	230	mW
	Infinite heatsink		330	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}	430	K/W
Thermal resistance junction lead	Infinite heatsink	R_{thJL}	300	K/W
Junction temperature		T_j	125	°C
Storage temperature range		T_{stg}	-65 to +150	°C
Operating temperature range		T_{op}	-55 to +125	°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 (pulsed)	V_{BR}	30			V
Leakage current (1)	at V_R = 25 V	I_R			2	nA
Forward voltage (1)	I_F = 0.1 mA	V_F			240	mV
	I_F = 1 mA	V_F			320	mV
	I_F = 10 mA	V_F			400	mV
	I_F = 30 mA	V_F			500	mV
	I_F = 100 mA	V_F			800	mV
Diode capacitance	V_R = 1 V; f = 1 MHz	C_D			10	pF
Reverse recovery time	$I_F = I_R$ = 10 mA, i_R = 1 mA, R_L = 100 Ω	t_{rr}			5	ns

Note
(1) Pulse test; $t_p \leq 300$ µs, duty cycle $t_p/T < 0.02$

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

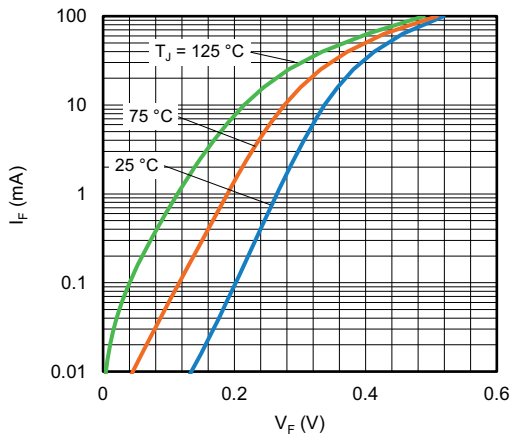


Fig. 1 - Typical Forward Current vs. Forward Voltage

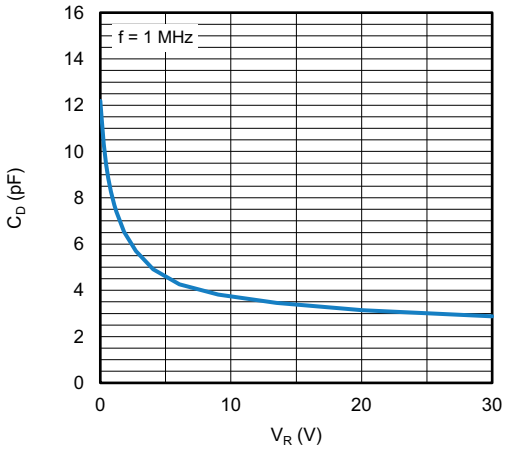


Fig. 3 - Typical Capacitance vs. Reverse Voltage

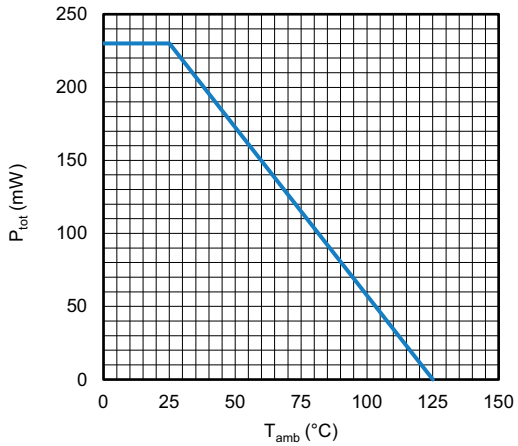


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

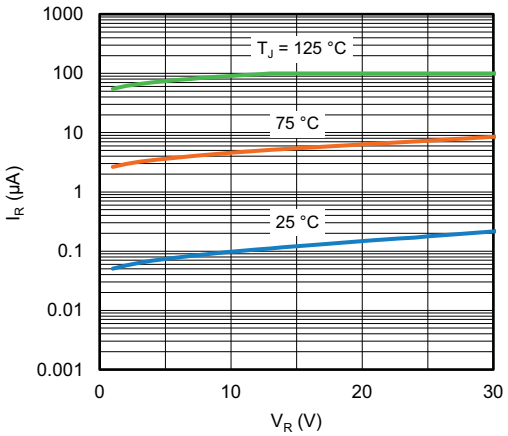
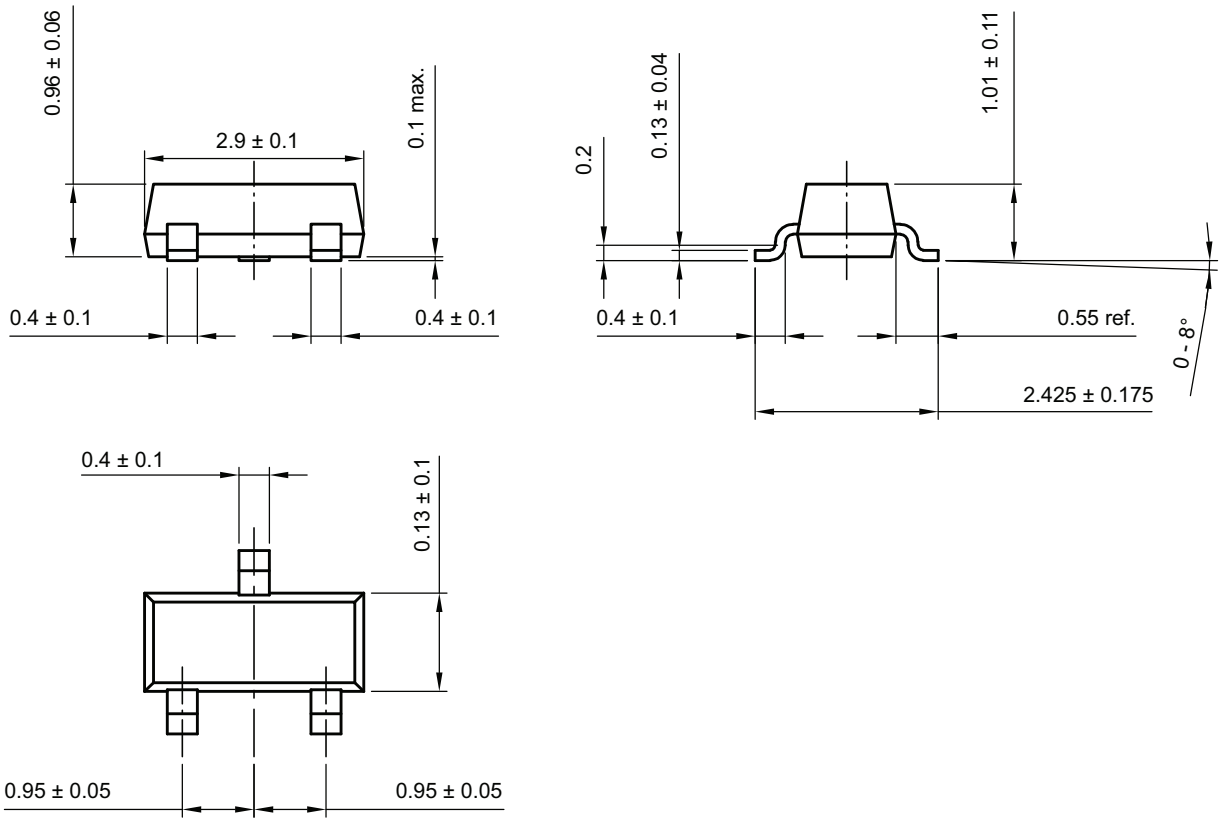
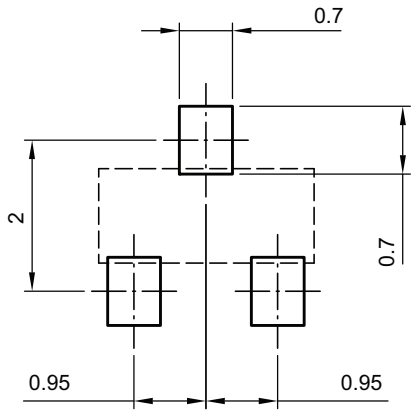


Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage

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



footprint recommendation:



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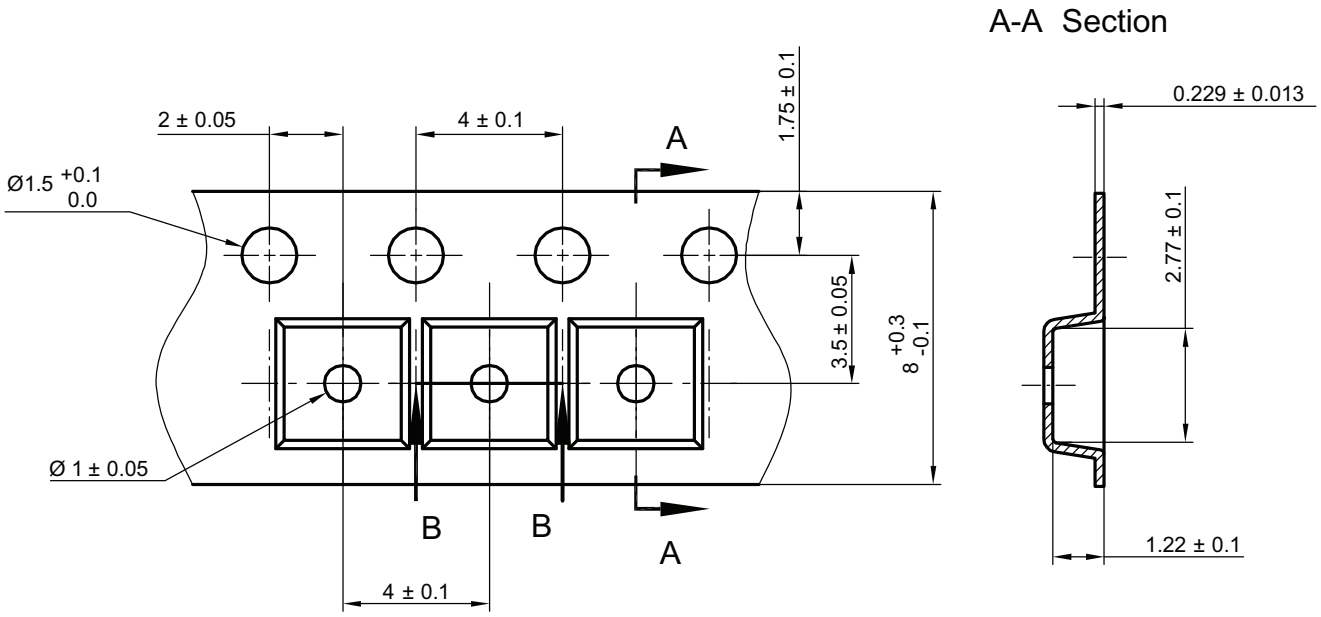
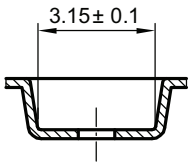
CARRIER TAPE SOT-23

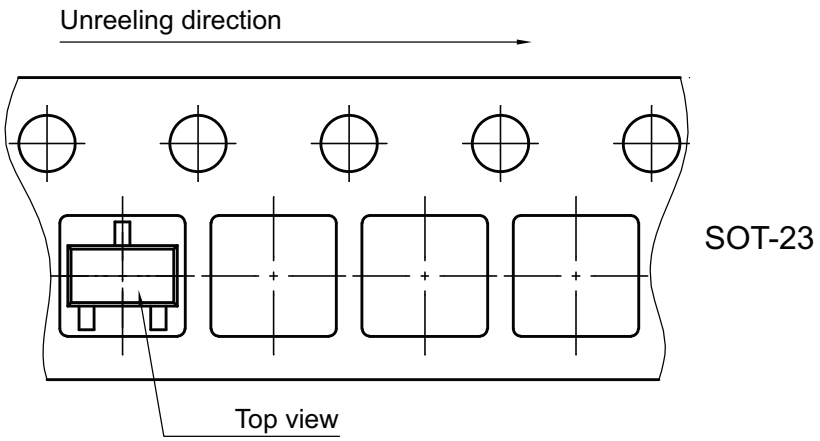


B-B Section



Created Date: 04-Feb-2010
Rev. Date: 07-Feb-2022

ORIENTATION IN CARRIER TAPE SOT-23



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Rev. Date: 07-Nov-2022

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