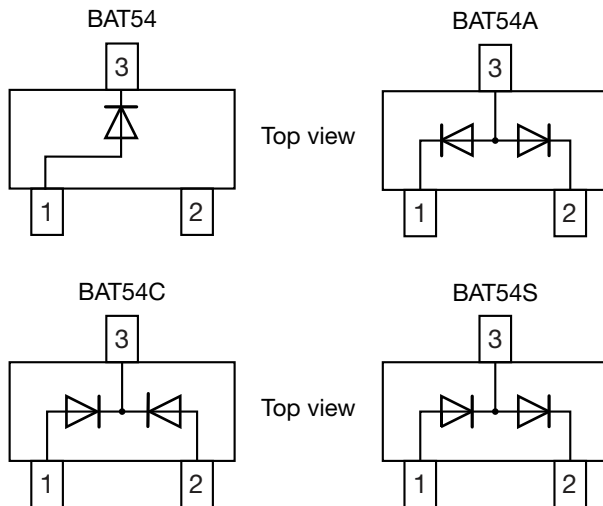


Small Signal Schottky Diodes, Single and Dual



FEATURES

- These diodes feature very low turn-on voltage and fast switching
- These devices are protected by a PN junction guarding 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

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



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			10 000 (8 mm tape on 13" reel)	10 000
	BAT54-E3-18	no				
	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			10 000 (8 mm tape on 13" reel)	10 000
	BAT54A-E3-18	no				
	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			10 000 (8 mm tape on 13" reel)	10 000
	BAT54C-E3-18	no				
	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			10 000 (8 mm tape on 13" reel)	10 000
	BAT54S-E3-18	no				
	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 ($T_{amb} = 25\text{ °C}$, 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⁾	$t_p < 1\text{ s}$	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 ($T_{amb} = 25\text{ °C}$, 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}	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 ($T_{amb} = 25\text{ °C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 100\text{ }\mu\text{A}$ (pulsed)	V_{BR}	30			V
Leakage current ⁽¹⁾	at $V_R = 25\text{ V}$	I_R			2	nA
Forward voltage ⁽¹⁾	$I_F = 0.1\text{ mA}$	V_F			240	mV
	$I_F = 1\text{ mA}$	V_F			320	mV
	$I_F = 10\text{ mA}$	V_F			400	mV
	$I_F = 30\text{ mA}$	V_F			500	mV
	$I_F = 100\text{ mA}$	V_F			800	mV
Diode capacitance	$V_R = 1\text{ V}$; $f = 1\text{ MHz}$	C_D			10	pF
Reverse recovery time	$I_F = I_R = 10\text{ mA}$, $i_R = 1\text{ mA}$, $R_L = 100\text{ }\Omega$	t_{rr}			5	ns

Note⁽¹⁾ Pulse test; $t_p \leq 300\text{ }\mu\text{s}$, duty cycle $t_p/T < 0.02$



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

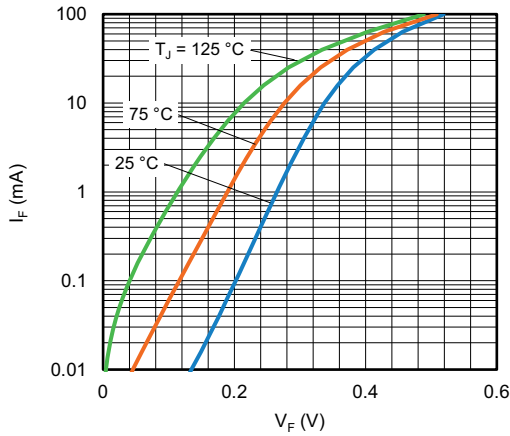


Fig. 1 - Typical Forward Current vs. Forward Voltage

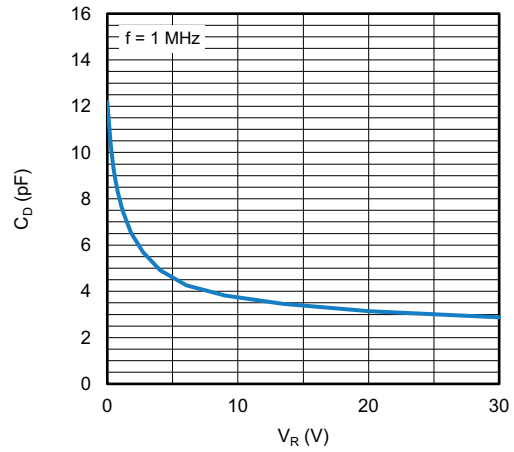


Fig. 3 - Typical Capacitance vs. Reverse Voltage

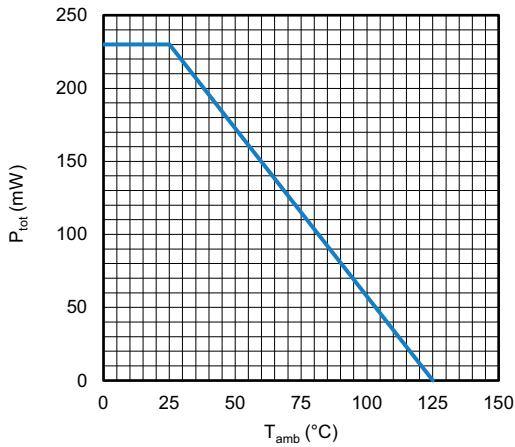


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

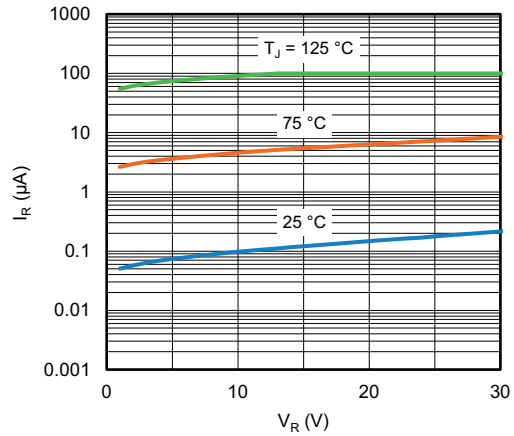
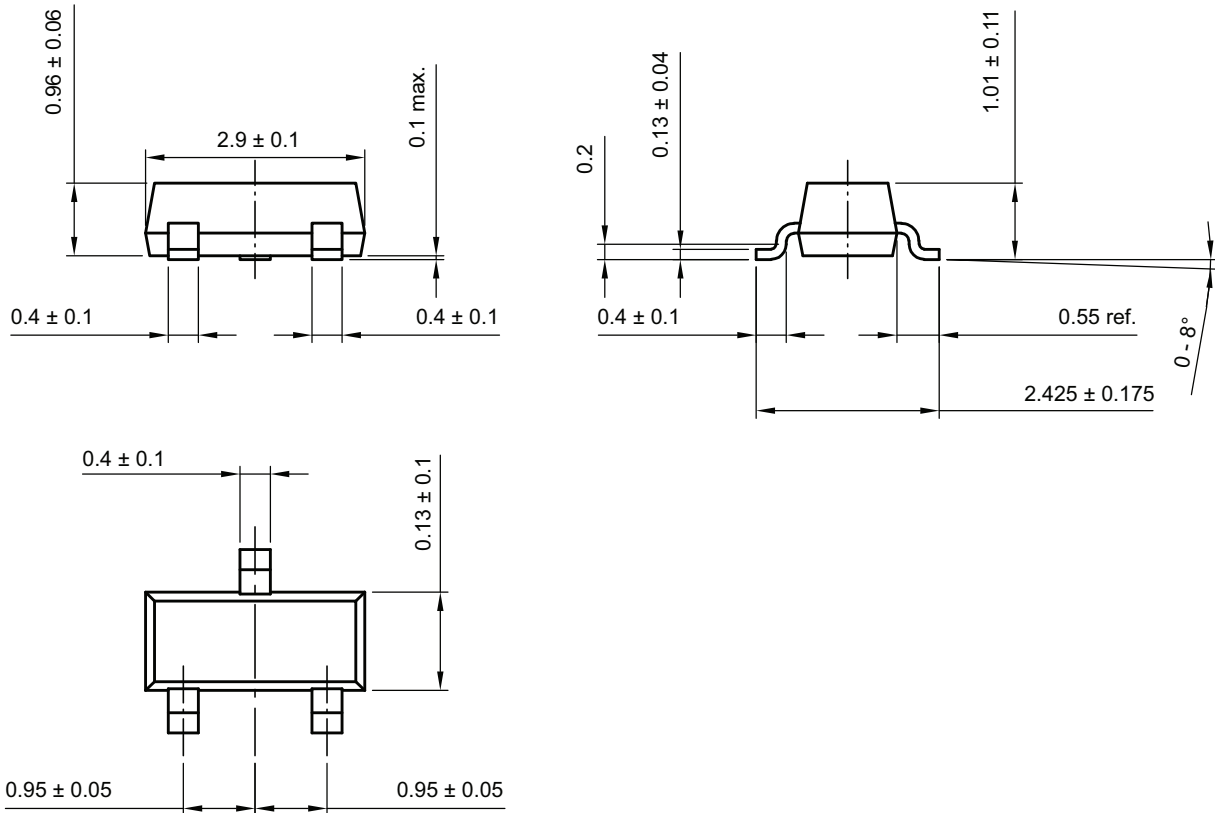


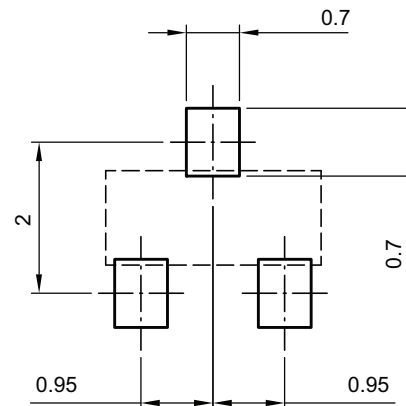
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



PACKAGE DIMENSIONS in millimeters: SOT-23



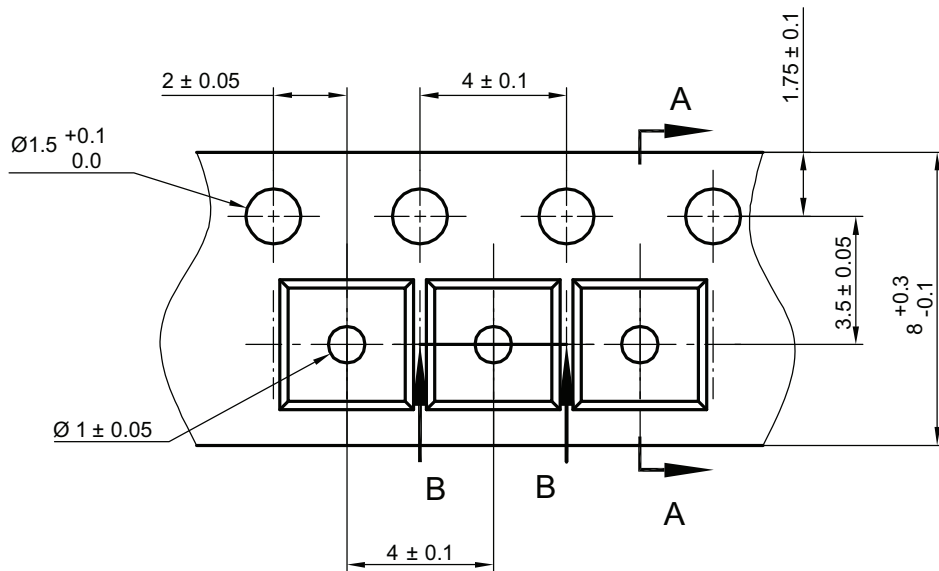
footprint recommendation:



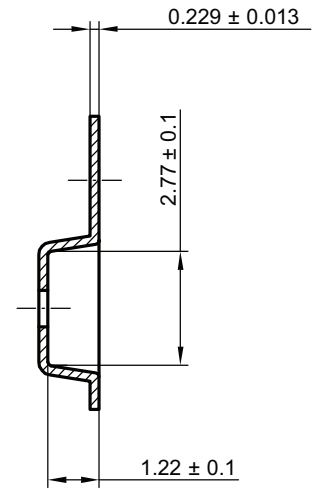
Created - Date: 18-Oct-2021
Rev. 01 - Date: 18-Jan-2022



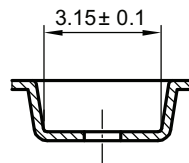
CARRIER TAPE SOT-23



A-A Section

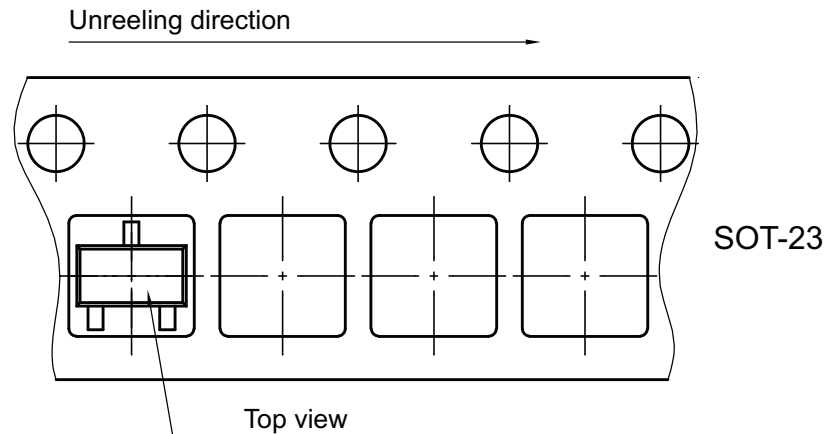


B-B Section



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

ORIENTATION IN CARRIER TAPE SOT-23



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



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