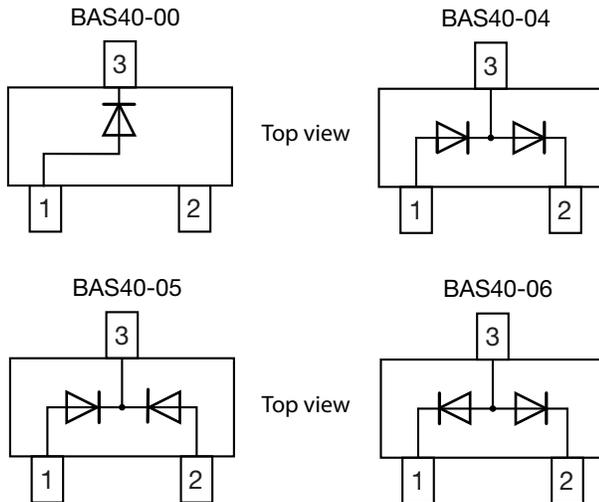


## Small Signal Schottky Diodes, Single and Dual



### 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](http://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
BAS40-00	BAS40-00-E3-08	no	43G	Single	3 000 (8 mm tape on 7" reel)	15 000
	BAS40-00-HE3_A-08	yes				
	BAS40-00-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
	BAS40-00-HE3_A-18	yes				
BAS40-04	BAS40-04-E3-08	no	44G	Dual serial	3 000 (8 mm tape on 7" reel)	15 000
	BAS40-04-HE3_A-08	yes				
	BAS40-04-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
	BAS40-04-HE3_A-18	yes				
BAS40-05	BAS40-05-E3-08	no	45G	Common cathode	3 000 (8 mm tape on 7" reel)	15 000
	BAS40-05-HE3_A-08	yes				
	BAS40-05-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
	BAS40-05-HE3_A-18	yes				
BAS40-06	BAS40-06-E3-08	no	46G	Common anode	3 000 (8 mm tape on 7" reel)	15 000
	BAS40-06-HE3_A-08	yes				
	BAS40-06-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
	BAS40-06-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		$V_{RRM} = V_{RWM} = V_R$	40	V
Forward continuous current <sup>(1)</sup>		$I_F$	200	mA
Surge forward current <sup>(1)</sup>	$t_p < 1\text{ s}$	$I_{FSM}$	600	mA
Power dissipation	on FR-4 board with recommended soldering footprint	$P_{tot}$	220	mW
	Infinite heatsink		310	mW

**Note**<sup>(1)</sup> 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	$R_{thJA}$	460	K/W
Thermal resistance junction lead	Infinite heatsink	$R_{thJL}$	320	K/W
Maximum 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	$I_R = 10\text{ }\mu\text{A}$ (pulsed)	$V_{BR}$	40			V
Leakage current	$V_R = 30\text{ V}$	$I_R$		20	100	nA
Forward voltage	$I_F = 1\text{ mA}$	$V_F$			380	mV
Forward voltage <sup>(1)</sup>	$I_F = 50\text{ mA}$	$V_F$			1	V
Diode capacitance	$V_R = 0$ ; $f = 1\text{ MHz}$	$C_D$		2.5	5	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**<sup>(1)</sup> Pulse test  $t_p < 300\mu\text{s}$



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

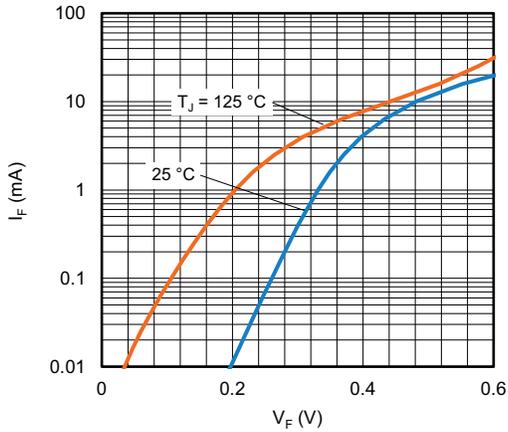


Fig. 1 - Typical Forward Current vs. Forward Voltage

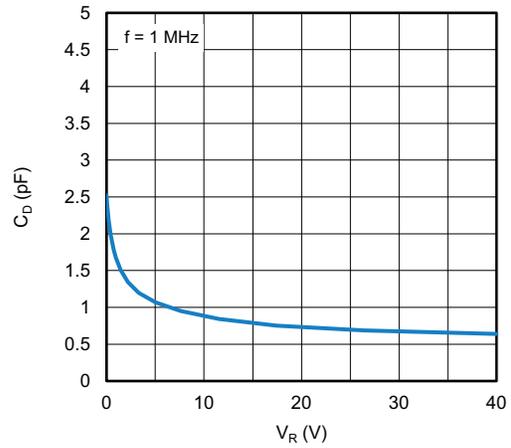


Fig. 3 - Typical Capacitance vs. Reverse Voltage

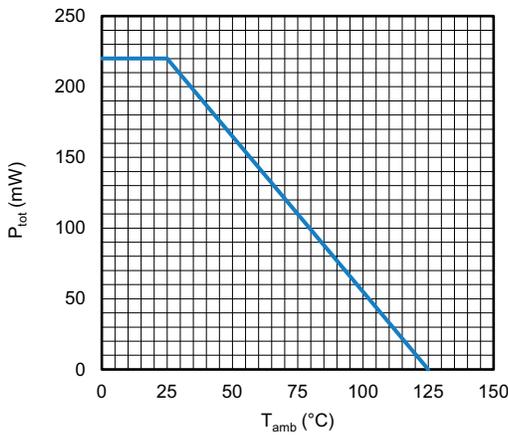


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

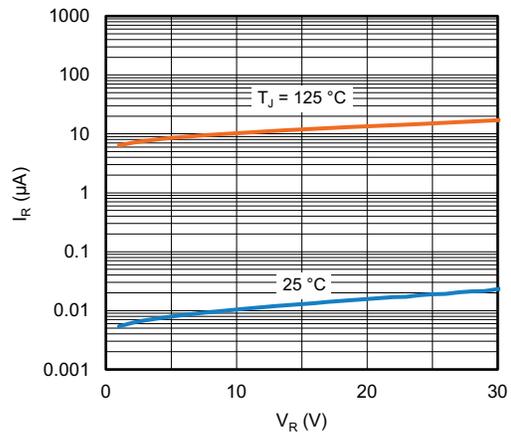
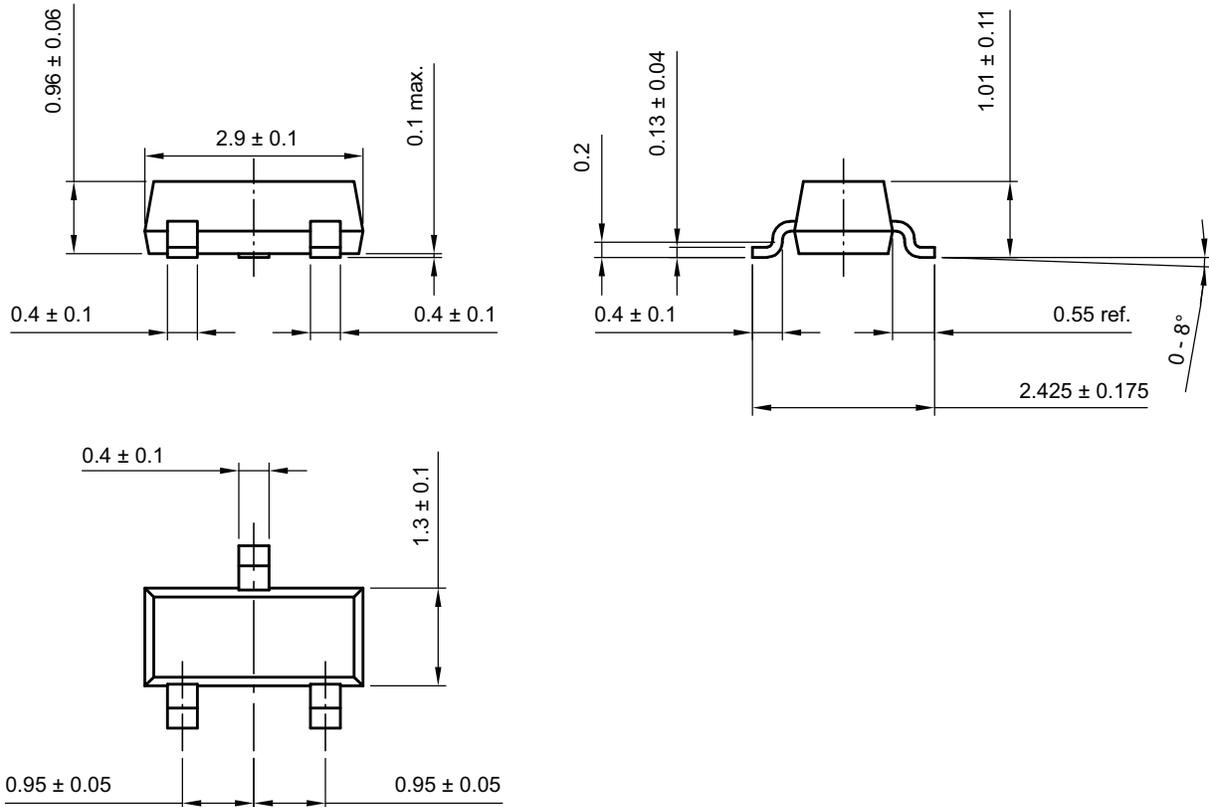


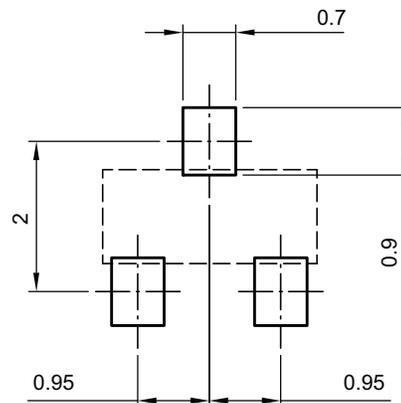
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



PACKAGE DIMENSIONS in millimeters: SOT-23



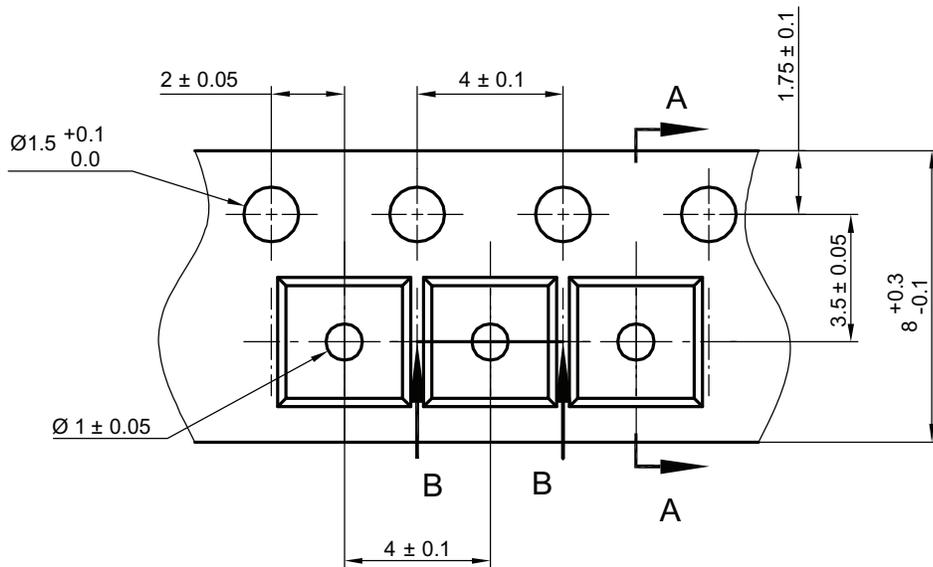
footprint recommendation:



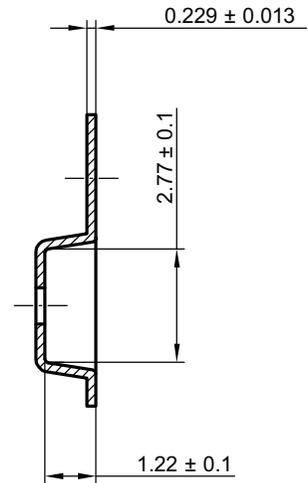
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 Rev. 01 - Date: 18-Jan-2022  
 S8-V-3929.01-009 (4)



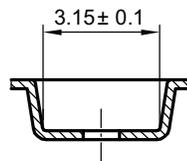
CARRIER TAPE SOT-23



A-A Section

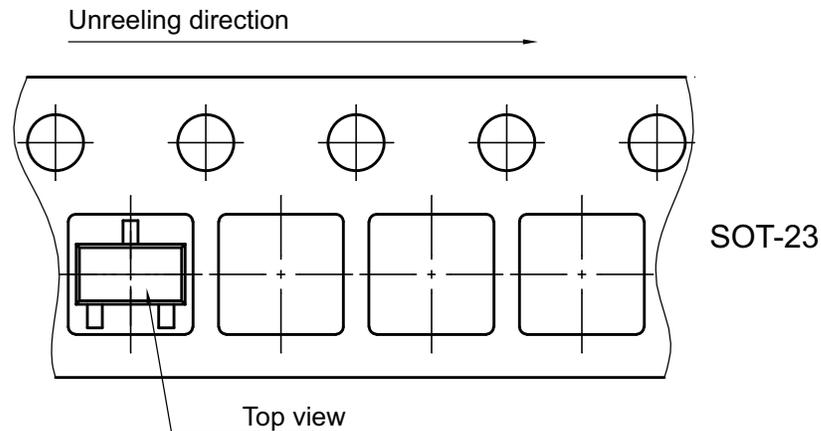


B-B Section



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

ORIENTATION IN CARRIER TAPE SOT-23



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



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