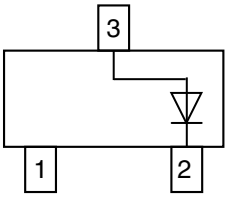
Small Signal Fast Switching Diode



FEATURES

- Fast switching speed
- Surface mount package
- Well suited for automated assembly process
- AEC-Q101 qualified
- 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

Pb-free

e3

RoHS COMPLIANT

MECHANICAL DATA

Case: SOT-23

Weight: approx. 8.8 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	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
BAL99	BAL99-E3-08 or BAL99-E3-18	Single diode	JF	Tape and reel
	BAL99-HE3-08 or BAL99-HE3-18			

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

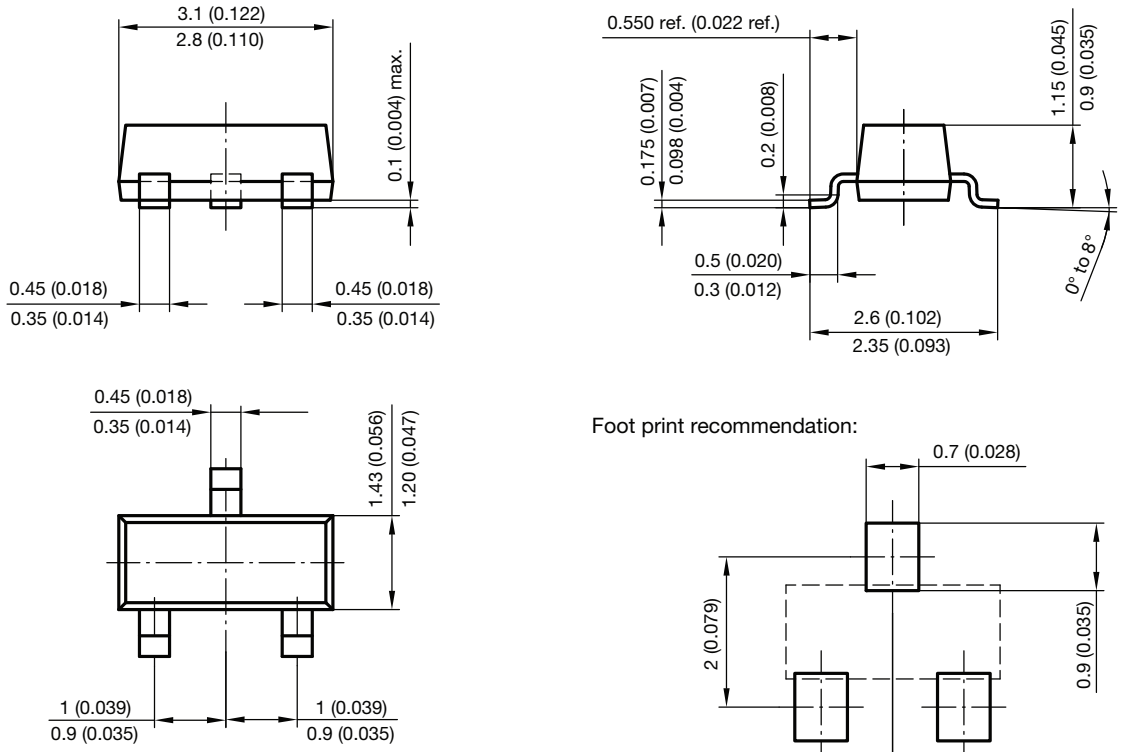
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage = working peak reverse voltage = DC blocking voltage		$V_{RRM} = V_{RWM} = V_R$	70	V
Peak forward surge current	t_p = 1 µs	I_{FSM}	2	A
	t_p = 1 ms	I_{FSM}	1	A
	t_p = 1 s	I_{FSM}	0.5	A
Average forward current		I_{FAV}	250	mA
Power dissipation	On fiberglass substrate 30 mm x 10 mm x 1.6 mm	P_{tot}	350	mW

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	On fiberglass substrate 30 mm x 10 mm x 1.6 mm	R_{thJA}	357	K/W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	- 55 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.**	**TYP.**	**MAX.**	**UNIT**
Forward voltage	I_F = 1 mA	V_F			0.715	V
	I_F = 10 mA	V_F			0.855	V
	I_F = 50 mA	V_F			1	V
	I_F = 150 mA	V_F			1.25	V
Reverse current	V_R = 70 V	I_R			2.5	µA
	V_R = 70 V, T_j = 150 °C	I_R			100	µA
	V_R = 25 V, T_j = 150 °C	I_R			30	µA
Diode capacitance	V_F = V_R = 0, f = 1 MHz	C_D			1.5	pF
Reverse recovery time	I_F = I_R = 10 mA, i_R = 1 mA	t_{rr}			6	ns

PACKAGE DIMENSIONS in millimeters (inches): **SOT-23**



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