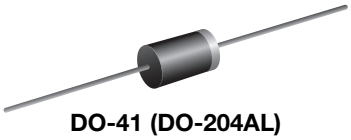
THE DATASHEET OF

SB120-E3/54

Schottky Barrier Plastic Rectifier



DO-41 (DO-204AL)

FEATURES

- Guardring for overvoltage protection
- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	1.0 A
V_{RRM}	10 V, 20 V, 30 V, 40 V, 50 V, 60 V
I_{FSM}	50 A
V_F	0.48 V, 0.65 V
T_J max.	125 °C, 150 °C
Package	DO-41 (DO-204AL)
Circuit configuration	Single

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

MECHANICAL DATA

Case: DO-41 (DO-204AL)
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix meets JESD 201 class 1A whisker test

Polarity: color band denotes the cathode end

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	SB110	SB120	SB130	SB140	SB150	SB160	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	10	20	30	40	50	60	V
Maximum RMS voltage	V_{RMS}	7	14	21	28	35	42	V
Maximum DC blocking voltage	V_{DC}	10	20	30	40	50	60	V
Maximum average forward rectified current at 0.375" (9.5 mm) lead length (fig. 1)	$I_{F(AV)}$	1.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	50						A
Voltage rate of change (rated V_R)	dV/dt	10 000						V/µs
Operating junction temperature range	T_J	-65 to + 125				-65 to + 150		°C
Storage temperature range	T_{STG}	-65 to + 150						°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	SB110	SB120	SB130	SB140	SB150	SB160	UNIT
Maximum instantaneous forward voltage	1.0 A		V_F (1)	0.48				0.65		V
Maximum instantaneous reverse current at rated DC blocking voltage		T_A = 25 °C	I_R (1)	0.50						mA
		T_A = 100 °C		10				5.0		

Note
(1) Pulse test: 300 µs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	SB110	SB120	SB130	SB140	SB150	SB160	UNIT
Typical thermal resistance	$R_{\theta JA}$ (1)	50						°C/W
	$R_{\theta JL}$ (1)	15						

Note

(1) Thermal resistance junction to lead PCB mounted 0.375" (9.5 mm) lead length

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SB140-E3/54	0.35	54	5500	13" diameter paper tape and reel
SB140-E3/73	0.35	73	3000	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

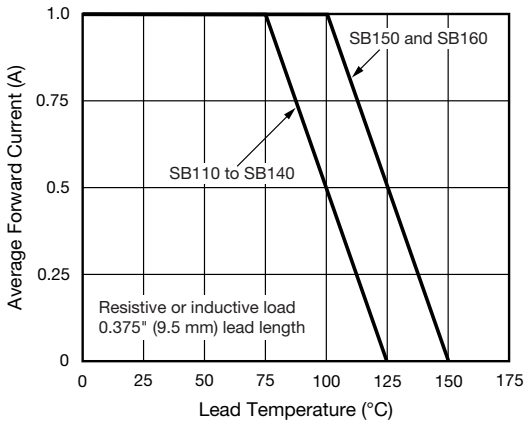


Fig. 1 - Forward Current Derating Curve

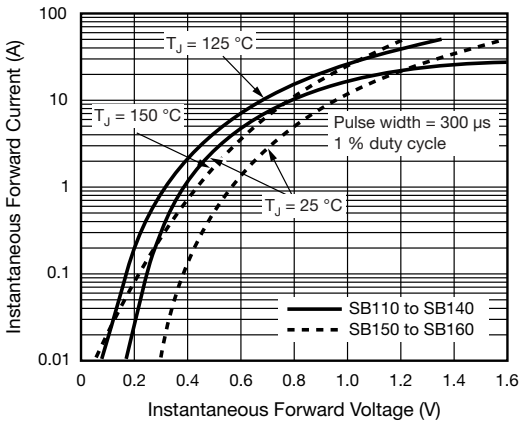


Fig. 3 - Typical Instantaneous Forward Characteristics

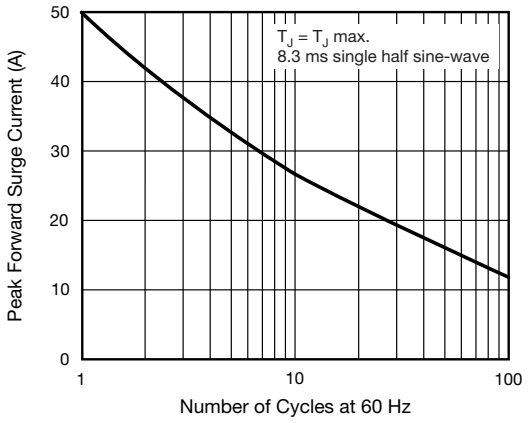


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

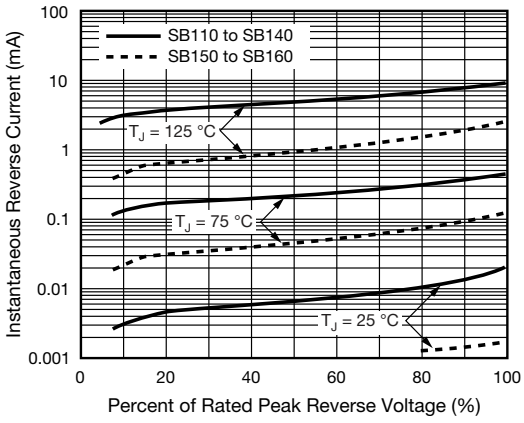


Fig. 4 - Typical Reverse Characteristics

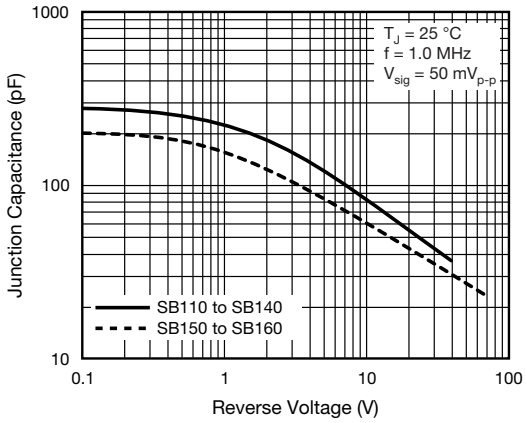


Fig. 5 - Typical Junction Capacitance

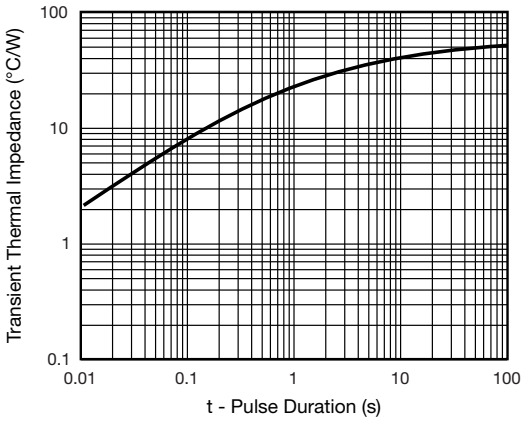
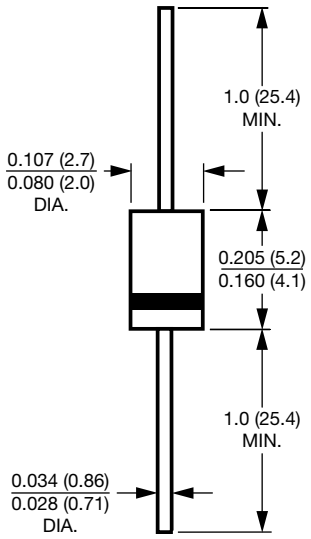


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-41 (DO-204AL)



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