

B0520W THRU B0540W

SCHOTTKY RECTIFIERS



VOLTAGE: 20-40 Volts	CURRENT: 0.5 Amperes	SOD-123	Marking and Polarity
FEATURES			
<ul style="list-style-type: none"> ■ Low Forward Voltage Drop for high efficiency ■ Low leakage current for high reliability ■ High forward surge capability for high reliability 			
MECHANICAL DATA			
<ul style="list-style-type: none"> ■ Terminals: Plated Leads Solderable per MIL-STD-202, Method 208 ■ Mounting Position: Any ■ Lead Free: Lead Free Finish, RoHS Compliant 		<p>Remark:</p> <p>①. Sx=Modle code,Sx=D,E,F SD=B0520W,SE=B0530W,SF=B0540W</p> <p>②. White band denotes cathode</p>	
TYPICAL APPLICATIONS			
<ul style="list-style-type: none"> ■ For use in high frequency inverters , DC/DC converters,LED driver etc. applications 			

Maximum Ratings(Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	B0520W	B0530W	B0540W	A
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	V
Maximum RMS voltage	V_{RMS}	14	21	28	V
Maximum DC blocking voltage	V_{DC}	20	30	40	V
Maximum average forward rectified current(see fig.1)	$I_{F(AV)}$	0.5			A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I_{FSM}	5.5			A
Current Squared Time Per Diode(t<8.3ms)	I^2t	0.13			A ² sec

Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Test Conditions		Symbol	B0520W	B0530W	B0540W	Unit
	Ta=25°C	IF= 0.5 A					
Maximum Forward Voltage(Note 1)	Ta=25°C	IF= 0.5 A	V_F	0.385	0.430	0.510	V
Maximum instantaneous reversecurrent at rated DC blockingvoltage (Note 1)	Ta=25°C	VR= V_{RRM}	I_{RRM}	0.25	0.13	0.02	mA
Typical junction capacitance	4V,1MHz		C_J	170			pF

Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	B0520W	B0530W	B0540W	Unit
Operating junction and Storage temperature range	T_J	-65 to 125			°C
Storage temperature range	T_{STG}	-65 to 125			
Typical thermal resistance (Note 2)	$R_{\theta JA}$	200			°C/W

Note: 1.Pulse width < 300 uS, Duty cycle < 2%

2.Mounted on P.C.B. with 0.2" x 0.2" (5.08 mm x 5.08 mm) copper pad areas

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RATING AND CHARACTERISTIC CURVES

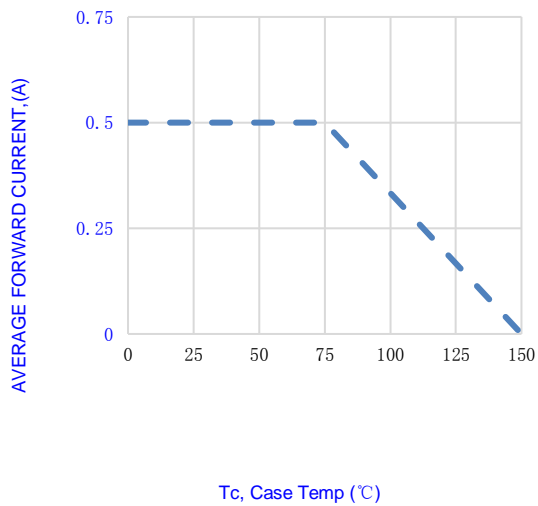


Fig.1-FORWARD CURRENT DERATING CURVE

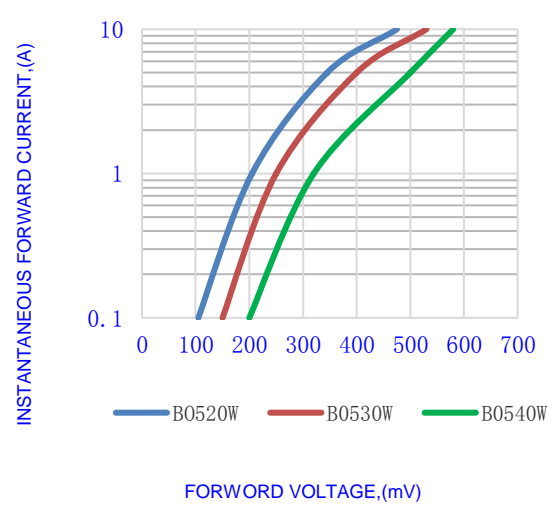


Fig.2- TYPICAL INSTANTANEOUS FORWARD

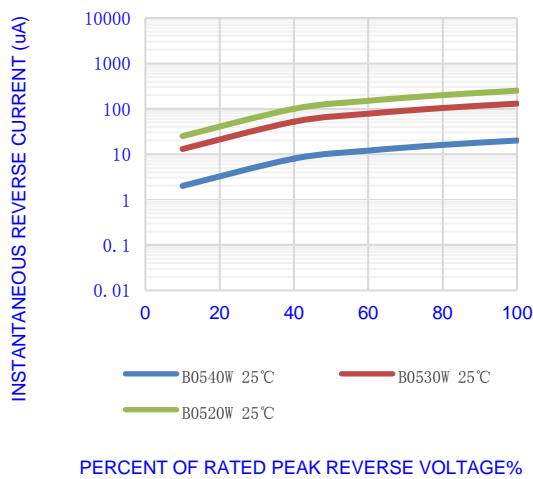


Fig.3- TYPICAL REVERSE CHARACTERISTICS

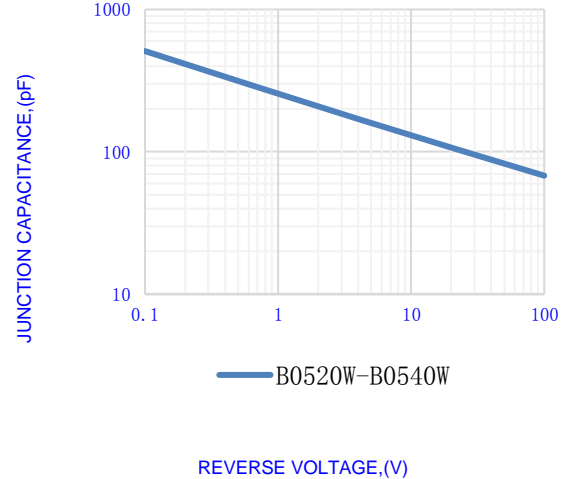


Fig.4-TYPICAL JUNCTION CAPACITANCE

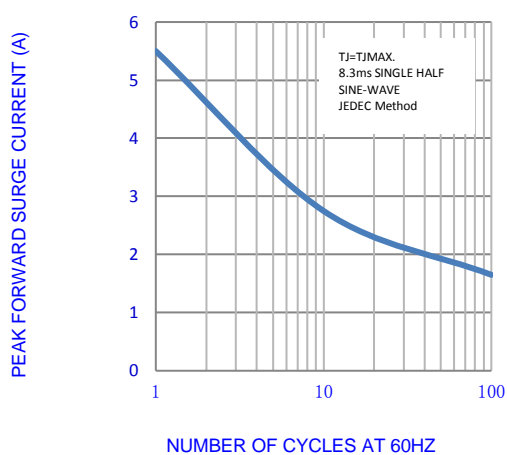


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

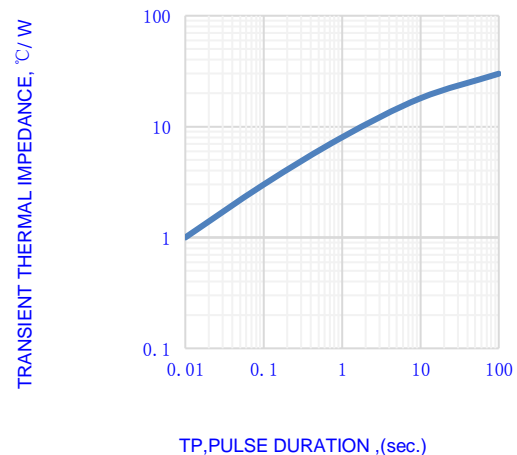


FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE

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PACKING INFORMATION				SOD-123																																																																			
Package Method	Reel Size (mm)	Quantity (pcs/reel)	Inner Box Size LxWxH(mm)	Quantity (pcs/Inner Box)	Carton Size LxWxH(mm)	Quantity (pcs/carton)																																																																	
Tape Reel	Φ180	3000	210x210x203	45000	455x455x240	180000																																																																	

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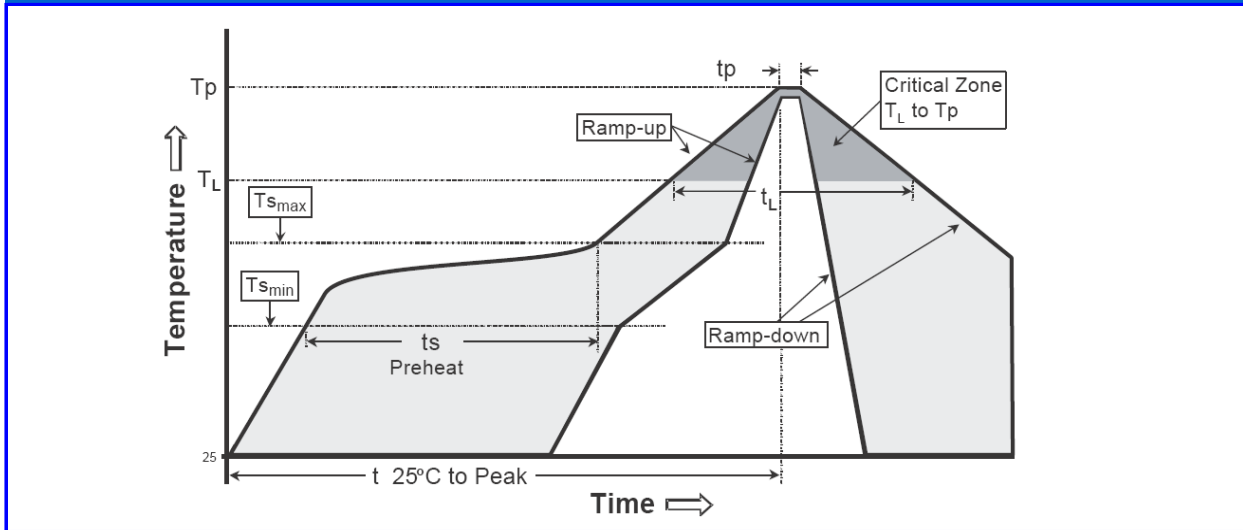
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Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmmax to Tp)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) - Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.