

SOD-123

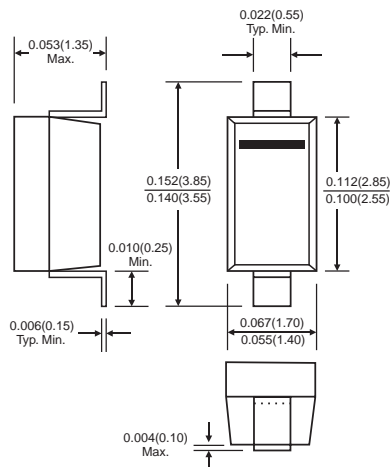


Features

- ✧ Low power loss, high efficiency.
- ✧ Guard ring construction for transient protection
- ✧ High conductance

Mechanical Data

- ✧ Case: SOD-123, plastic
- ✧ Marking: Date Code and Type Code
Type Code: B0520LW Marking: SD
B0530W Marking: SE
B0540W Marking: SF
- ✧ Weight: 0.01 grams (approx.)



Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Maximum Ratings

Type Number	Symbol	B0520LW	B0530W	B0540W	Units
Peak Repetitive Reverse Voltage	V_{RRM}	20	30	40	V
Working Peak Reverse Voltage	V_{RWM}				
DC Blocking Voltage	V_R				
RMS Reverse Voltage	$V_R(RMS)$	14	21	28	V
Average Rectified Current @ $T_L=100^\circ C$	I_o	0.5			A
Non-repetitive Peak Forward Surge Current 8.3ms Single half Sine-Wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	5.5			A
Power Dissipation (Note 1)	P_d	410			mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	244			$^\circ C/W$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to + 125			$^\circ C$
Voltage Rate of Change	dv / dt	1000			V/ μS

Electrical Characteristics

Type Number	Symbol	B0520LW	B0530W	B0540W	Units
Minimum Reverse Breakdown Voltage $I_R=250\mu A$ $I_R=200\mu A$ $I_R=20\mu A$	$V_{(BR)}$	20 — —	— 30 —	— — 40	V
Maximum Reverse Leakage Current (Note 2) $V_R=10V$ $T_J=25^\circ C$ $V_R=15V$ $T_J=25^\circ C$ $V_R=20V$ $T_J=25^\circ C$ $V_R=30V$ $T_J=25^\circ C$ $V_R=40V$ $T_J=25^\circ C$ $V_R=10V$ $T_J=100^\circ C$ $V_R=20V$ $T_J=100^\circ C$ $V_R=40V$ $T_J=100^\circ C$	I_R	75 — 250 — — 5.0 8.0 —	— 20 — 130 — — — —	— — 10 — 20 — 5.0 13	μA mA
Maximum Forward Voltage Drop (Note 2) $T_J=25^\circ C$ $I_F=0.1A$ $T_J=25^\circ C$ $I_F=0.5A$ $T_J=25^\circ C$ $I_F=1.0A$ $T_J=100^\circ C$ $I_F=0.1A$ $T_J=100^\circ C$ $I_F=0.5A$ $T_J=100^\circ C$ $I_F=1.0A$	V_F	0.300 0.385 — 0.220 0.330 —	0.375 0.430 — — — —	— 0.510 0.620 — 0.460 0.610	V
Junction Capacitance $V_R=0, f=1.0MHz$	C_j	170			pF

- Notes:
1. Valid Provided that Leads are Kept at Ambient Temperature.
 2. Pulse Test: Pulse width = 300 μS , Duty cycle $\leq 2\%$.
 3. dv / dt Measured at Rated V_R .

RATINGS AND CHARACTERISTIC CURVES (B0520LW, B0530W, B0540W)

FIG.1- FORWARD CURRENT DERATING CURVE

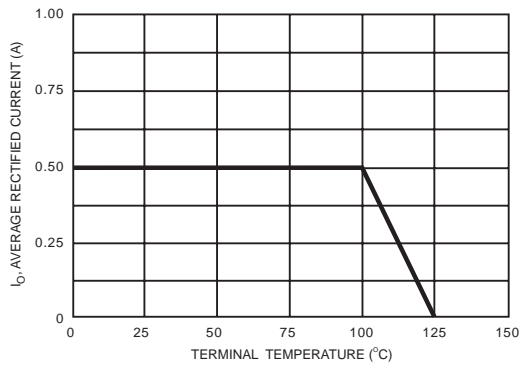


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

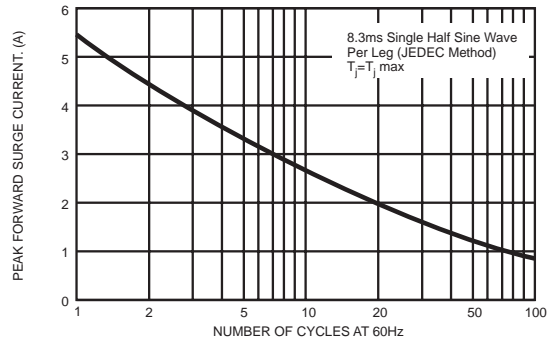


FIG.3- TYPICAL FORWARD CHARACTERISTICS

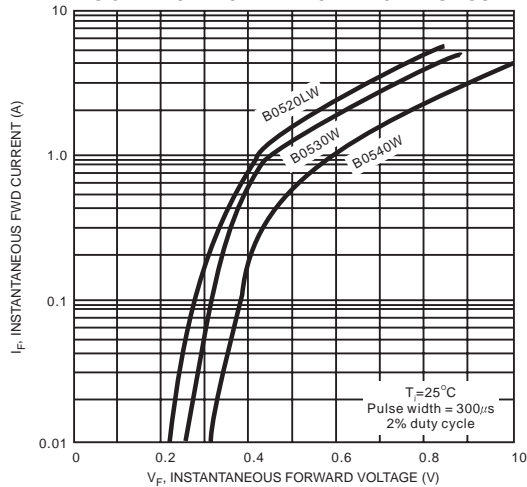


FIG.4- TYPICAL REVERSE CHARACTERISTICS

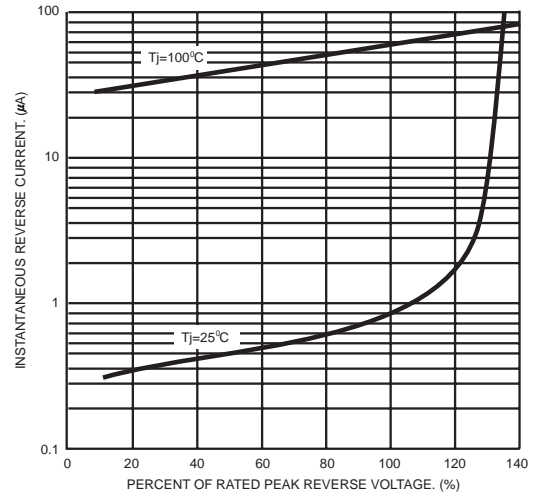


FIG.5- TYP. JUNCTION CAPACITANCE VS REVERSE VOLTAGE

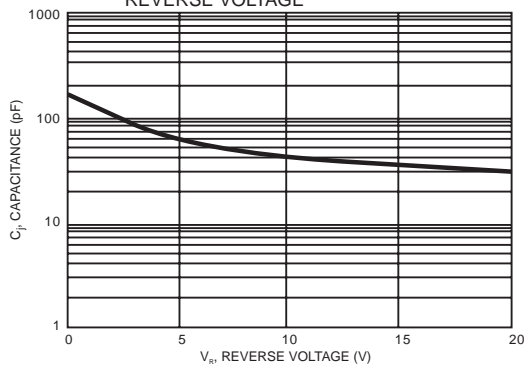


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS

