Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	B120Q/BQ	B130Q/BQ	B140Q/BQ	B150Q/BQ	B160Q/BQ	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	30	40	50	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	35	42	V
Average Rectified Output Current @ T_T = +130°C	I_O	1.0					A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	30					A
Electrostatic Discharge	HBM	4000					V
Electrostatic Discharge	MM	400					V
Electrostatic Discharge	CDM	1					kV

Thermal Characteristics

Characteristic	Symbol	B120Q/BQ	B130Q/BQ	B140Q/BQ	B150Q/BQ	B160Q/BQ	Unit
Typical Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	115					°C/W
Typical Thermal Resistance Junction to Ambient (Note 7)	$R_{\theta JA}$	65					°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150					°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop B120Q/BQ, B130Q/BQ, B140Q/BQ B150Q/BQ, B160Q/BQ	V_F	— —	— —	0.5 0.7	V	I_F = 1.0A I_F = 1.0A
Leakage Current (Note 8)	I_R	— —	— —	0.5 10	mA	@ Rated V_R, T_A = +25°C @ Rated V_R, T_A = +100°C
Total Capacitance	C_T	—	—	110	pF	V_R = 4V, f = 1MHz
Switching Speed	t_{RR}	—	12	—	ns	I_F = 0.5A, I_R = 1A, I_{RR} = 0.25A (RG1)

Notes: 6. 1*MRP FR-4 PC board, 2oz.
7. With 50mm*50mm*23mm Al heatsink.
8. Short duration pulse test used to minimize self-heating effect.

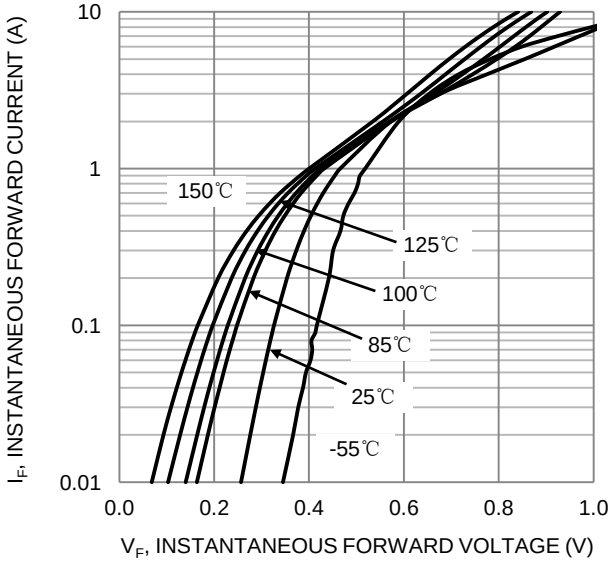


Figure 1. Typical Forward Characteristics
B120Q/BQ-B140Q/BQ

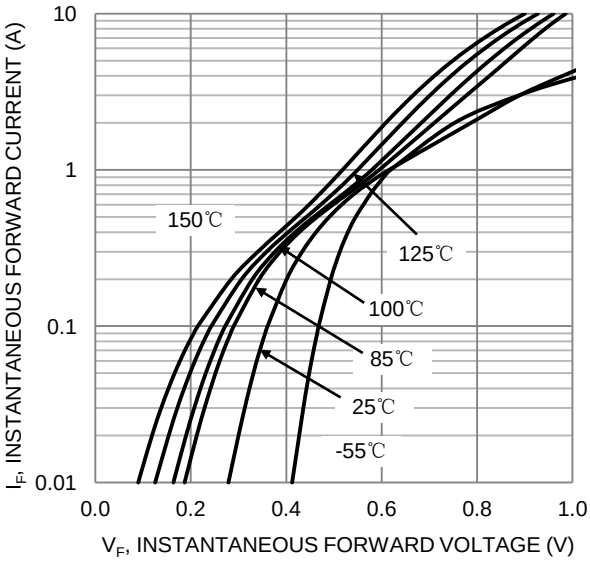


Figure 2. Typical Forward Characteristics
B150Q/BQ - B160Q/BQ

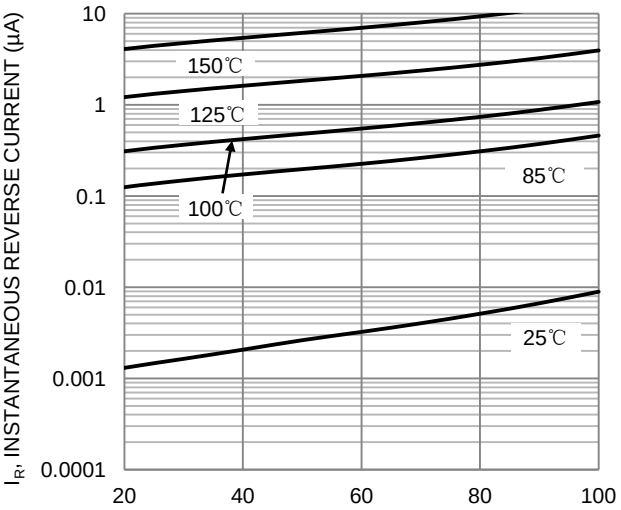


Figure 3. Typical Reverse Characteristics
B120Q/BQ - B140Q/BQ

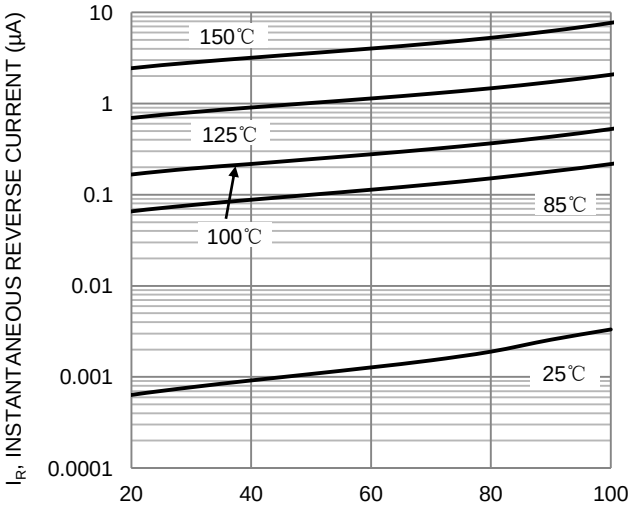


Figure 4. Typical Reverse Characteristics
B150Q/BQ - B160Q/BQ

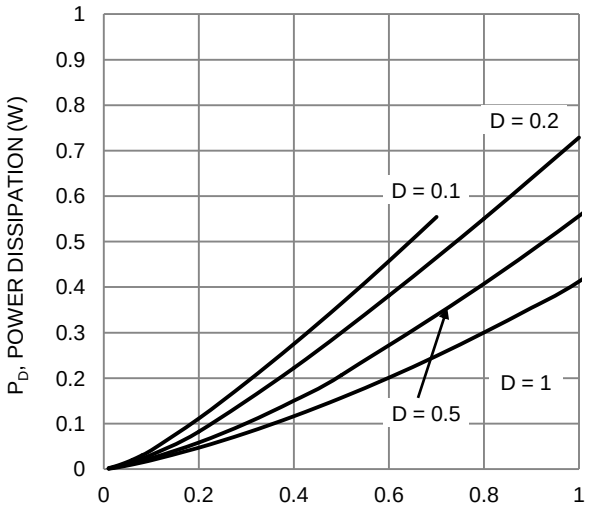


Figure 5. Forward Power Dissipation T_J = 125ºC
B120Q/BQ - B140Q/BQ

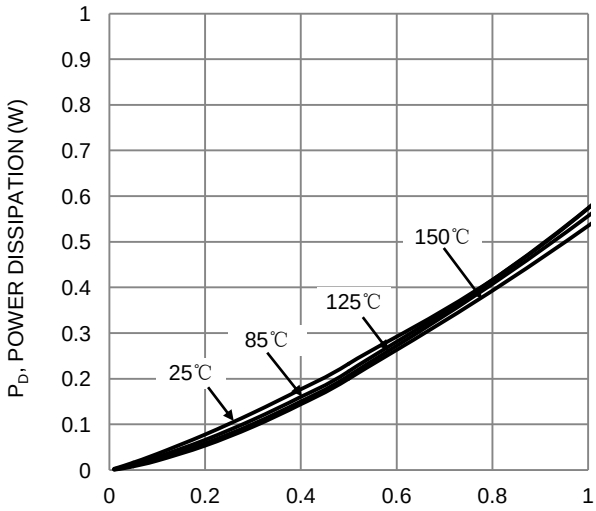


Figure 6. Forward Power Dissipation D = 0.5
B120Q/BQ - B140Q/BQ

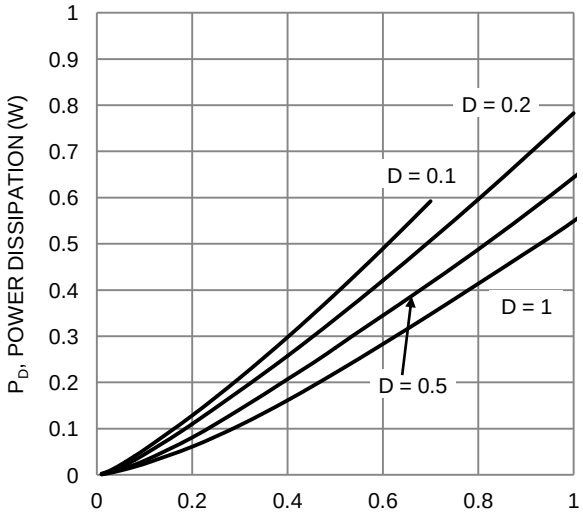


Figure 7. Forward Power Dissipation T_J = 125ºC
B150Q/BQ - B160Q/BQ

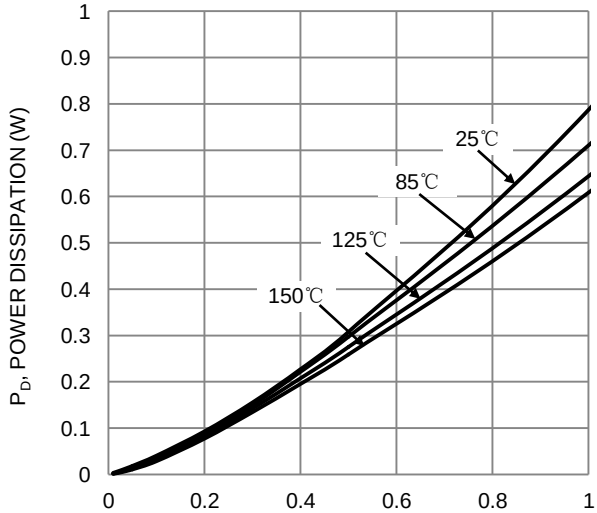


Figure 8. Forward Power Dissipation D = 0.5
B150Q/BQ - B160Q/BQ

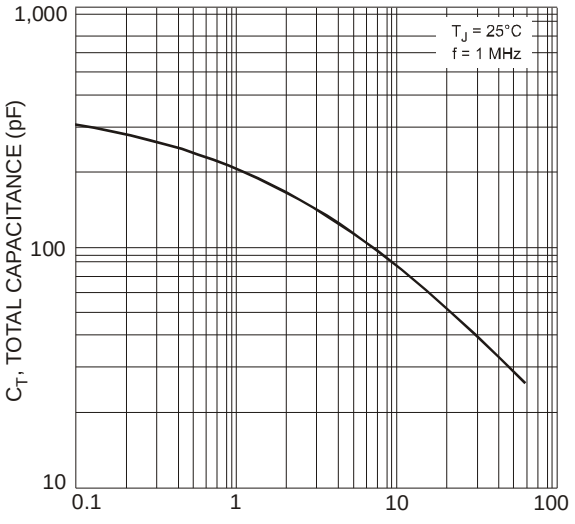


Figure 9. Total Capacitance vs. Reverse Voltage

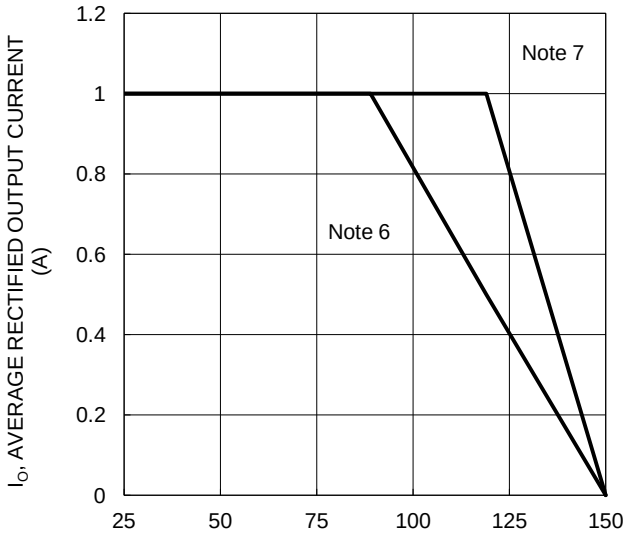


Figure 10. DC Forward Current Derating

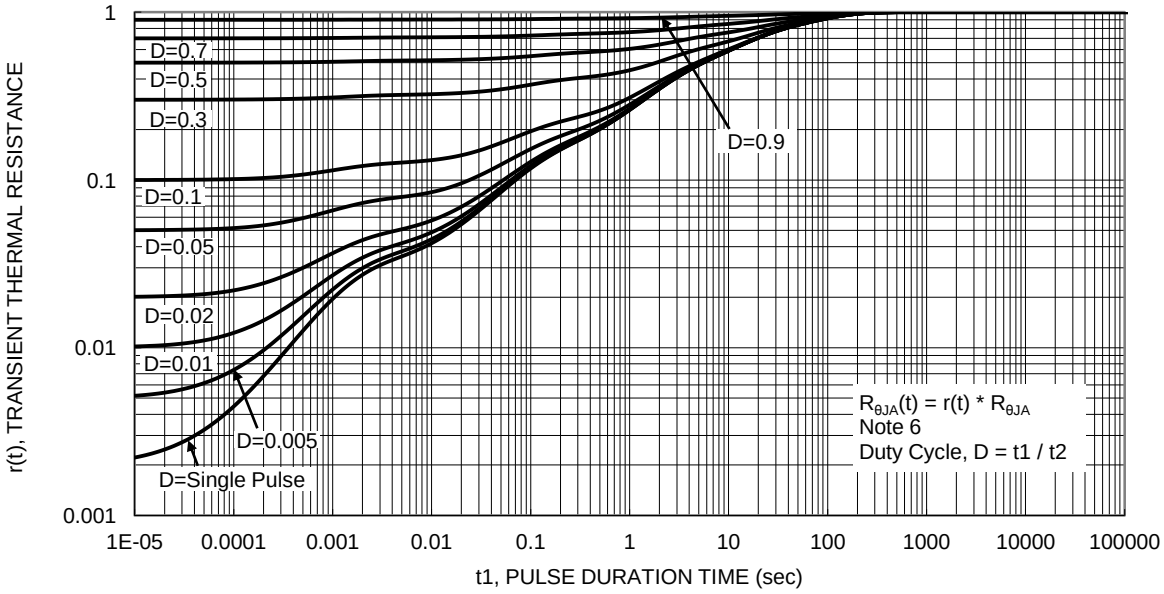
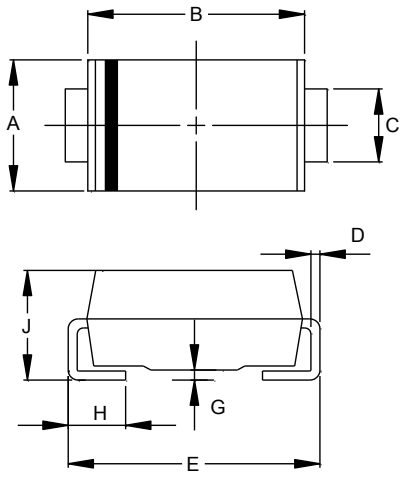


Figure 11. Transient Thermal Resistance: SMA

Package Outline Dimensions

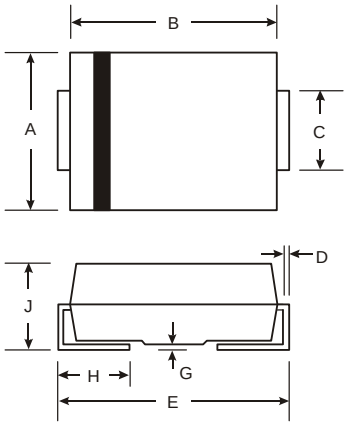
Please see http://www.diodes.com/package-outlines.html for the latest version.

SMA



SMA		
Dim	**Min**	**Max**
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	1.96	2.40
All Dimensions in mm		

SMB

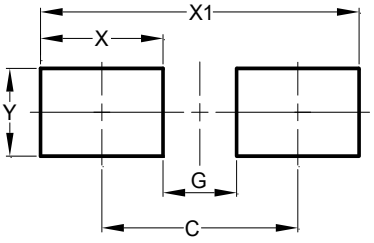


SMB		
Dim	**Min**	**Max**
A	3.30	3.94
B	4.06	4.57
C	1.96	2.21
D	0.15	0.31
E	5.00	5.59
G	0.05	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

Suggested Pad Layout

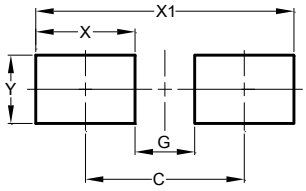
Please see http://www.diodes.com/package-outlines.html for the latest version.

SMA



Dimensions	Value (in mm)
C	4.00
G	1.50
X	2.50
X1	6.50
Y	1.70

SMB



Dimensions	Value (in mm)
C	4.30
G	1.80
X	2.50
X1	6.80
Y	2.30

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