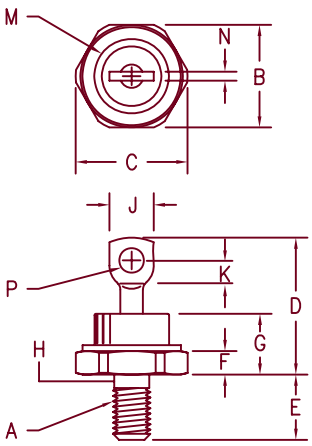
120 Amp Schottky Rectifier

SBR12040 – SBR12050



Notes:
1. Full threads within 2 1/2 threads
2. Standard Polarity: Stud is Cathode
   Reverse Polarity: Stud is Anode

Dim.	Inches		Millimeter		
	Minimum	Maximum	Minimum	Maximum	Notes
A	---	---	---	---	1/4-28
B	.669	.688	17.00	17.47	
C	---	.794	---	20.16	
D	.750	1.00	19.05	25.40	
E	.422	.453	10.72	11.50	
F	.115	.200	2.93	5.08	
G	---	.450	---	11.43	
H	.220	.249	5.59	6.32	1
J	---	.375	---	9.52	
K	.156	---	3.97	---	
M	---	.510	---	12.95	Dia
N	---	.080	---	2.03	
P	.140	.175	3.56	4.44	Dia

DO-203AB (DO-5)

Microsemi Catalog Number	Working Peak Reverse Voltage	Repetitive Peak Reverse Voltage
SBR12040*	40V	40V
SBR12045*	45V	45V
SBR12050*	50V	50V

*Add Suffix R For Reverse Polarity

- Schottky Barrier Rectifier
- 175°C Junction Temperature
- Guard Ring Protection
- Reverse Energy Tested
- V_{RRM} – 40 to 50 Volts
- 120 Amperes
- Mil-PRF19500 Equivalents Available

Electrical Characteristics

Average forward current,	$I_{F(AV)}$= 120 Amps	T_C = 124°C, Square wave, $R_{\theta JC}$ = 0.6°C/W
Maximum surge current,	I_{FSM}= 2500 Amps	8.3 ms, half sine T_J = 175°C
Max repetitive peak reverse current	$I_{R(OV)}$= 2 Amps	f = 1 KHz, 25°C, 1 µsec Square wave
Max peak forward voltage,	V_{FM}= 0.55 Volts	I_{FM} = 120A, T_J = 175°C*
Max peak forward voltage,	V_{FM}= 0.70 Volts	I_{FM} = 120A, T_J = 25°C*
Max peak reverse current	I_{RM}= 90 mA	V_{RRM}, T_J = 125°C*
Max peak reverse current	I_{RM}= 3 mA	V_{RRM}, T_J = 25°C
Typical junction capacitance	C_J= 4900 pF	V_R = 5.0V, T_J = 25°C

*Pulse test: Pulse width 300 µsec, Duty cycle 2%

Thermal and Mechanical Characteristics

Storage temp range	T_{STG}	-65°C to +175°C
Operating junction temp range	T_J	-65°C to +175°C
Max thermal resistance	$R_{\theta JC}$	0.6°C/W Junction to sink
Typical thermal resistance (greased)	$R_{\theta CS}$	0.5°C/W Case to sink
Mounting torque		25-30 inch pounds
Weight		.54 ounce (15.3 grams) typical

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SBR12040 – SBR12050

Figure 1
Typical Forward Characteristics

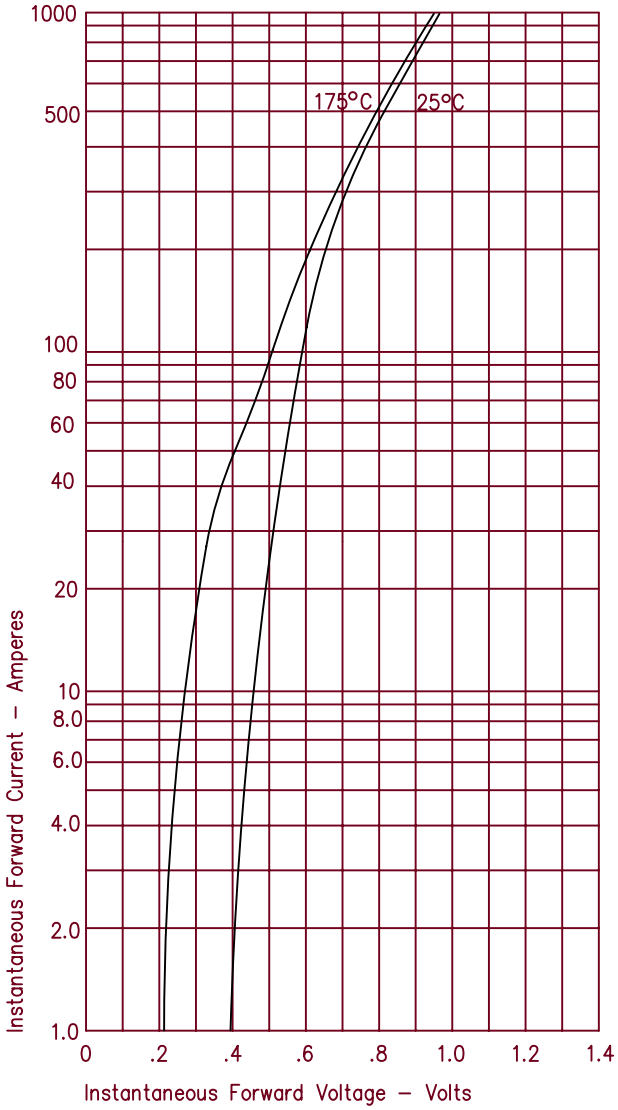

Figure 2
Typical Reverse Characteristics

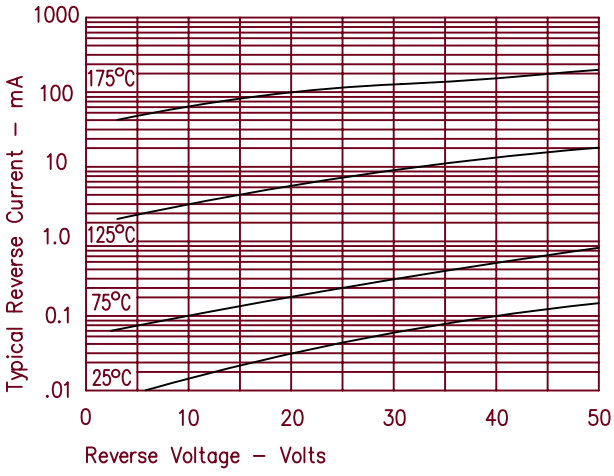

Figure 3
Typical Junction Capacitance

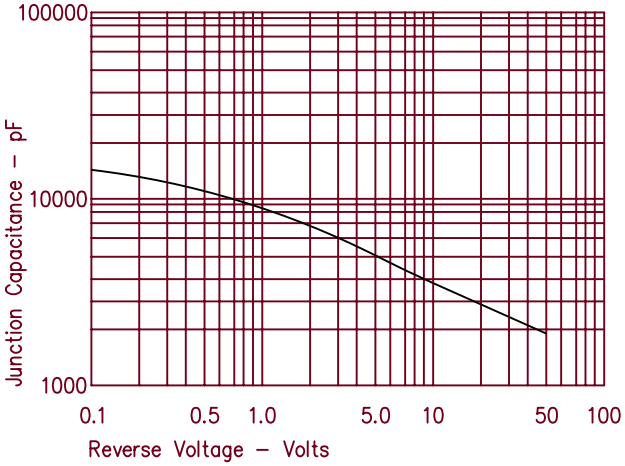

Figure 4
Forward Current Derating

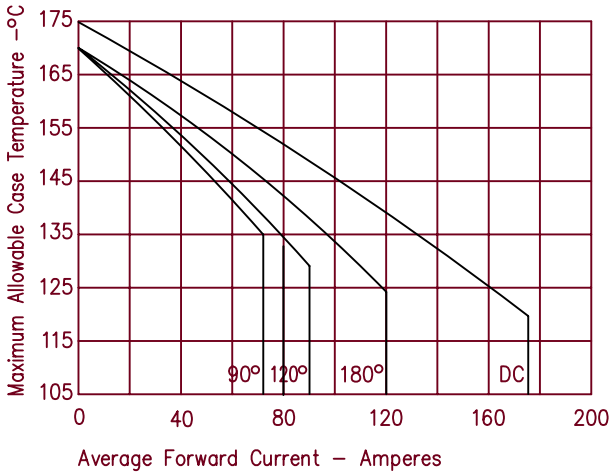

Figure 5
Maximum Forward Power Dissipation