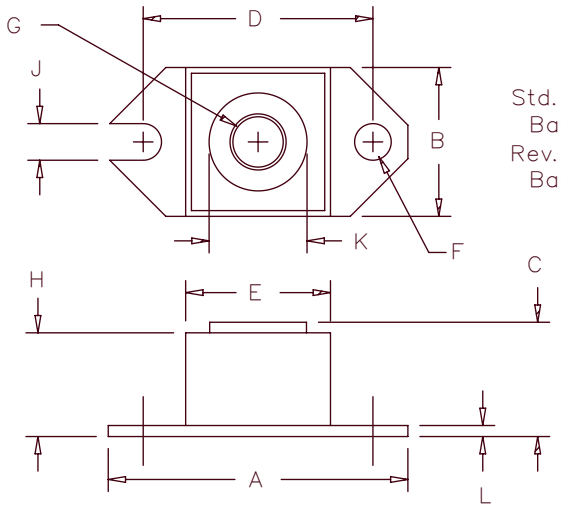
120 Amp Schottky Rectifier

HS12380–HS123100



Std. Polarity
Base is cathode
Rev. Polarity
Base is anode

Dim.	Inches		Millimeter		
	Minimum	Maximum	Minimum	Maximum	Notes
A	1.52	1.56	38.61	39.62	
B	.725	.775	18.42	19.69	
C	.605	.625	15.37	15.88	
D	1.182	1.192	30.02	30.28	
E	.745	.755	18.92	19.18	Sq.
F	.152	.160	3.86	4.06	Dia.
G		1/4–20 UNC–2B			
H	.525	.580	13.34	14.73	
J	.156	.160	3.96	4.06	
K	.495	.505	12.57	12.83	Dia.
L	.120	.130	3.05	3.30	

Microsemi Catalog Number	Industry Part Number	Working Peak Reverse Voltage	Repetitive Peak Reverse Voltage
HS12380*	123NQ080 MBR12080	80V	80V
HS12390*		90V	90V
HS123100*	123NQ100 MBR120100	100V	100V

*Add Suffix R for Reverse Polarity

- Schottky Barrier Rectifier
- Guard Ring Protection
- 120 Amperes/80 to 100 Volts
- 175°C Junction Temperature
- Reverse Energy Tested
- ROHS Compliant

Electrical Characteristics

Average forward current	$I_{F(AV)}$ 120 Amps	T_C = 112°C, Square wave, $R_{\theta JC}$ = 0.40°C/W
Maximum surge current	I_{FSM} 2000 Amps	8.3ms, half sine, T_J = 175°C
Maximum repetitive reverse current	$I_{R(OV)}$ 2 Amps	f = 1 KHZ, 25°C, 1µsec square wave
Max peak forward voltage	V_{FM} .76 Volts	I_{FM} = 120A; T_J = 125°C*
Max peak forward voltage	V_{FM} 0.91 Volts	I_{FM} = 120A; T_J = 25°C*
Max peak reverse current	I_{RM} 75 mA	V_{RRM}, T_J = 125°C*
Max peak reverse current	I_{RM} 3.0 mA	V_{RRM}, T_J = 25°C
Typical junction capacitance	C_J 3000 pF	V_R = 5.0V, T_C = 25°C

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

Thermal and Mechanical Characteristics

Storage temp range	T_{STG}	–55°C to 175°C
Operating junction temp range	T_J	–55°C to 175°C
Max thermal resistance per leg	R_{OJC}	0.40°C/W Junction to case
Typical thermal resistance (greased)	R_{OCS}	0.12°C/W Case to sink
Terminal Torque		35–40 inch pounds
Mounting Base Torque		20–25 inch pounds
Weight		1.1 ounces (32 grams) typical

HS12380 – HS123100

Figure 1
Typical Forward Characteristics

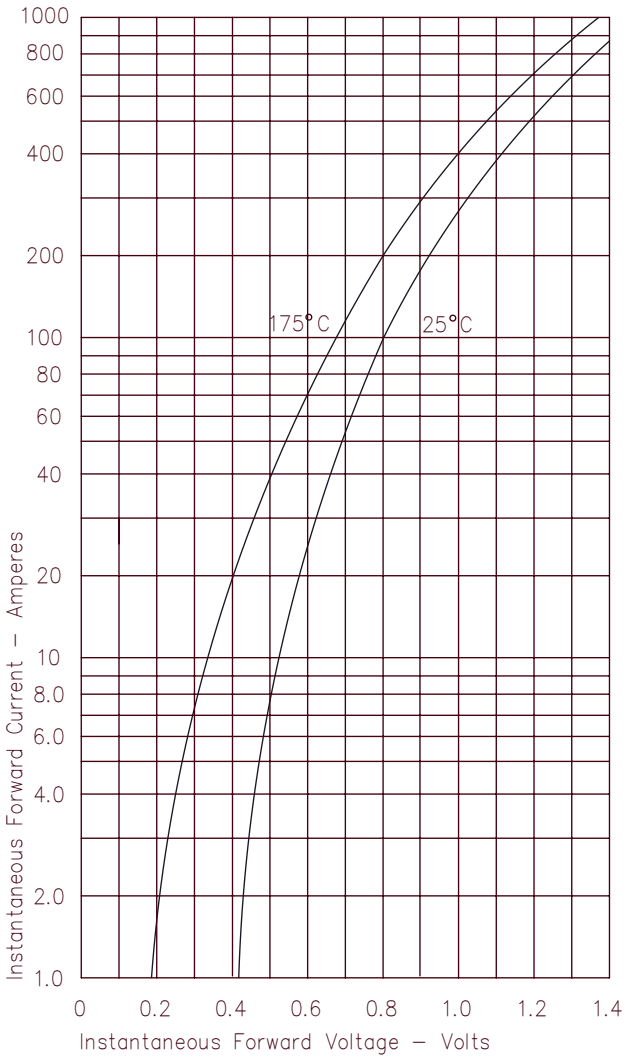


Figure 2
Typical Reverse Characteristics

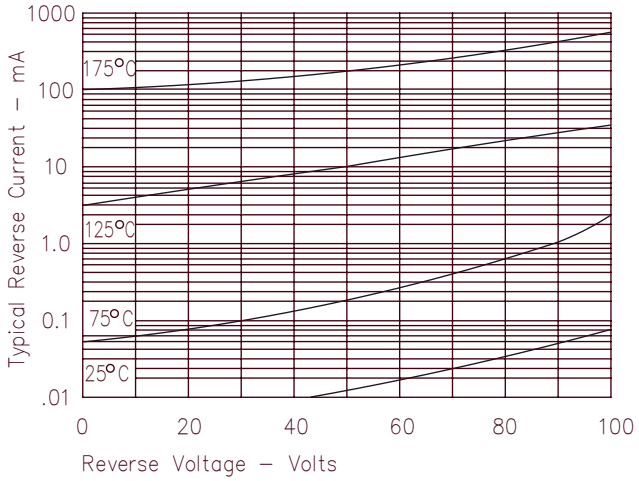


Figure 3
Typical Junction Capacitance

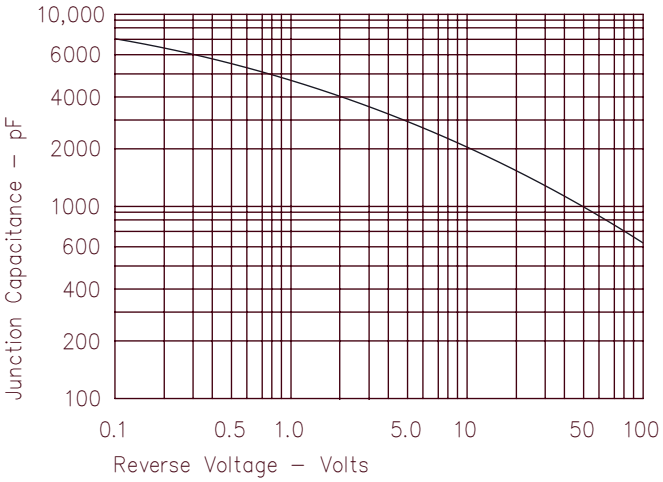


Figure 4
Forward Current Derating

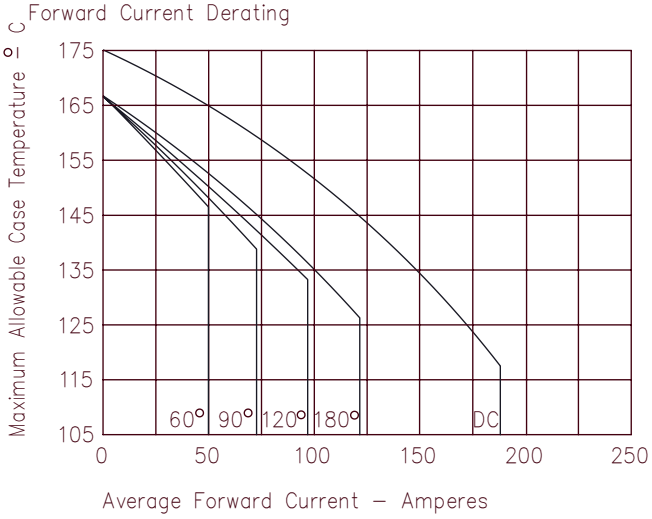
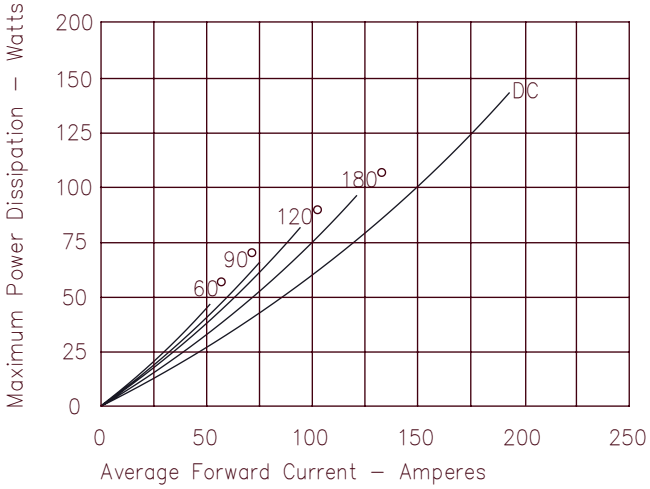


Figure 5
Maximum Forward Power Dissipation



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