120 Amp Schottky Rectifier
HS12035 — HS12045

Std. Polarity
Base is cathode
Rev. Polarity
Base is anode
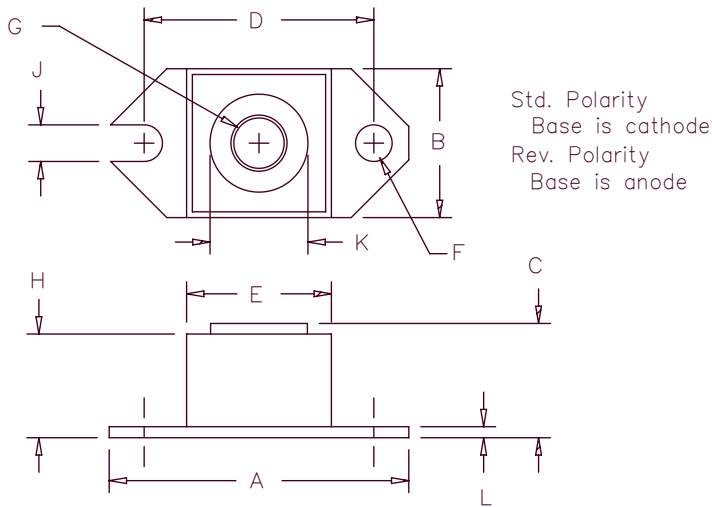
Dim.	Inches		Millimeter		
	Minimum	Maximum	Minimum	Maximum	Notes
A	1.52	1.56	38.61	39.62	
B	.725	.775	18.42	19.69	
C	.605	.625	15.37	15.88	
D	1.182	1.192	30.02	30.28	
E	.745	.755	18.92	19.18	Sq.
F	.152	.160	3.86	4.06	Dia.
G		1/4—20 UNC—2B			
H	.525	.580	13.34	14.73	
J	.156	.160	3.96	4.06	
K	.495	.505	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
HS12035*	120NQ035 124NQ035 MBR12035	35V	35V
HS12040*	120NQ040 124NQ040 MBR12040	40V	40V
HS12045*	120NQ045 124NQ045 MBR12045	45V	45V

* Add Suffix R for Reverse Polarity

- Schottky Barrier Rectifier
- Guard Ring Protection
- 120 Amperes/45 Volts
- 150°C Junction Temperature
- Reverse Energy Tested
- V_{RRM} 35 — 45 Volts
- ROHS Compliant

Electrical Characteristics

Average forward current	$I_{F(AV)}$	120 Amps	$T_C = 100°C$, Square wave, $R_{\theta JC} = .40°C/W$
Maximum surge current	I_{FSM}	2000 Amps	8.3ms, half sine, $T_J = 125°C$
Maximum repetitive reverse current	$I_{R(OV)}$	2 Amps	f = 1 KHZ, 25°C
Max peak forward voltage	V_{FM}	0.49 Volts	$I_{FM} = 120A$: $T_J = 125°C$*
Max peak forward voltage	V_{FM}	0.55 Volts	$I_{FM} = 120A$: $T_J = 25°C$*
Max peak reverse current	I_{RM}	2A	V_{RRM}, $T_J = 125°C$*
Max peak reverse current	I_{RM}	5mA	V_{RRM}, $T_J = 25°C$
Typical junction capacitance	C_J	5500pF	$V_R = 5.0V$, $T_C = 25°C$

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

Thermal and Mechanical Characteristics

Storage temp range	T_{STG}	−55°C to 150°C
Operating junction temp range	T_J	−55°C to 150°C
Max thermal resistance	$R_{\theta JC}$	0.40°C/W Junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	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

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HS12035 – HS12045

Figure 1
Typical Forward Characteristics

Figure 2
Typical Reverse Characteristics
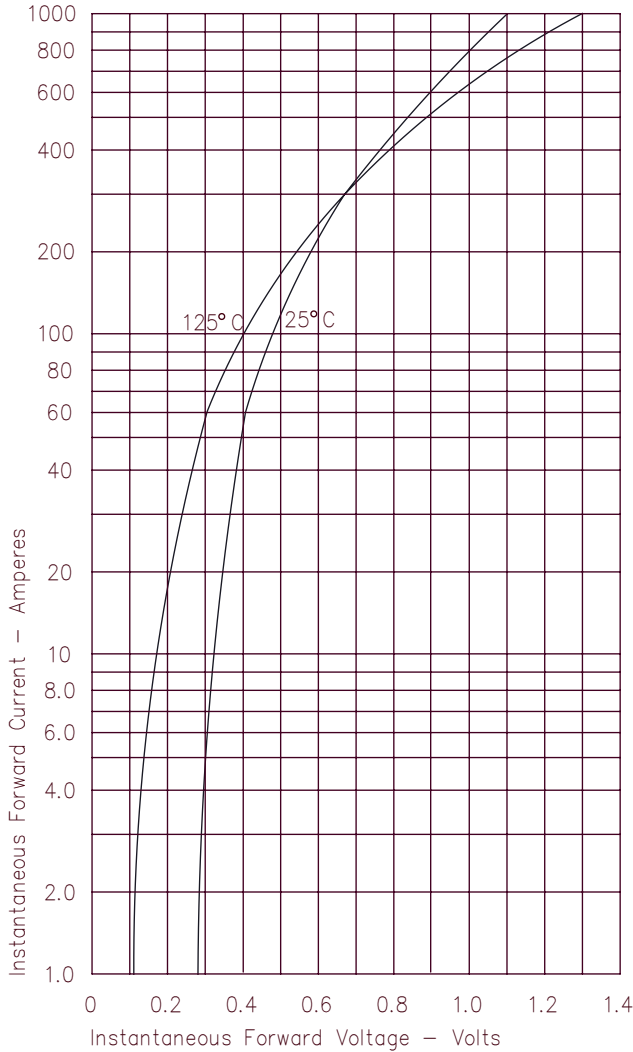
Figure 3
Typical Junction Capacitance
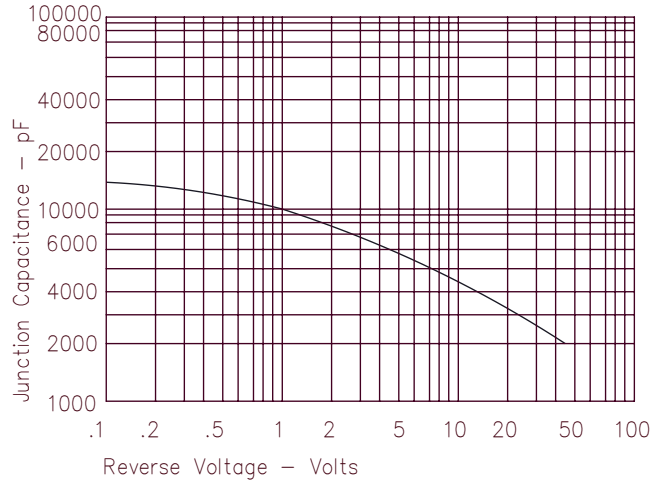
Figure 4
Forward Current Derating
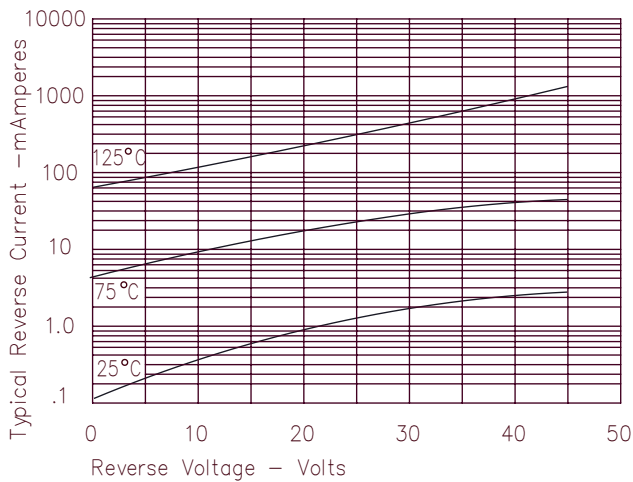
Figure 5
Maximum Forward Power Dissipation

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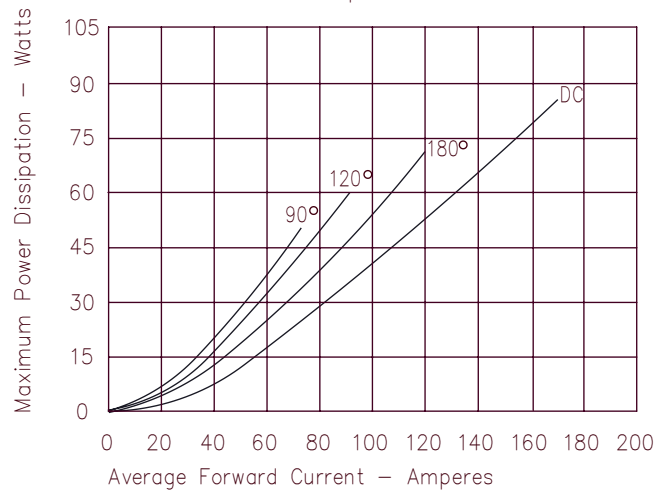
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