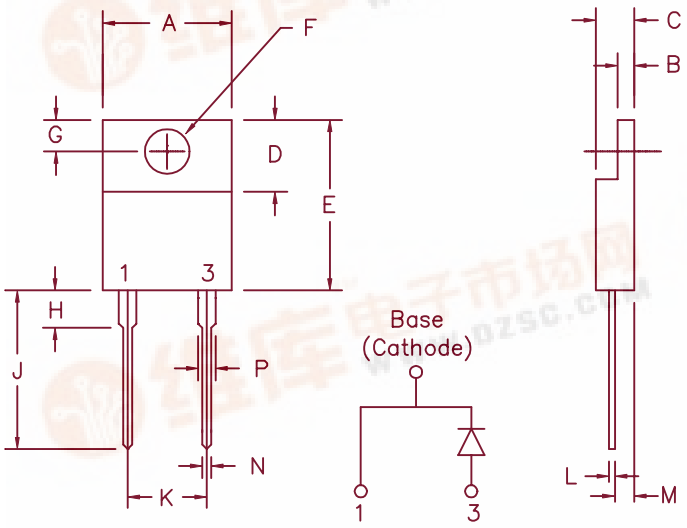
10 Amp Schottky Barrier Rectifiers

MS1003 – MS1004



Dim.	Inches		Millimeter		
	Minimum	Maximum	Minimum	Maximum	Notes
A	.390	.415	9.91	10.54	
B	.045	.055	1.14	1.40	
C	.180	.190	4.57	4.83	
D	.245	.260	6.22	6.60	
E	.550	.650	13.97	16.51	
F	.139	.155	3.53	3.94	Dia.
G	.100	.120	2.54	3.05	
H	---	.250	---	6.35	
J	.500	.580	12.70	14.73	
K	.190	.210	4.83	5.33	
L	.014	.025	0.35	0.63	
M	.080	.115	2.03	2.92	
N	.028	.038	0.71	0.96	
P	.045	.055	1.14	1.40	

Similar to TO-220AC

Microsemi Catalog Number	Industry Part Number	Repetitive Peak Reverse Voltage	Transient Peak Reverse Voltage
MS1003	MBR730 MBR1030	30V	30V
MS1004	6TQ035,6TQ040 10TQ040	40V	40V

- Schottky barrier rectifier
- Guard ring protection
- Low power loss, high efficiency
- V_{RRM} 30 to 40 Volts
- Reverse energy tested

Electrical Characteristics

Average Forward Current	$I_{F(AV)}$ 10 Amps	T_C = 158°C, Square wave, $R_{\theta JC}$ = 2.5°C/W
Maximum Surge Current	I_{FSM} 225 Amps	8.3ms, half sine, T_J = 175°C
Max. Peak Forward Voltage	V_{FM} .48 Volts	I_{FM} = 10A, T_J = 175°C *
Max. Peak Forward Voltage	V_{FM} .65 Volts	I_{FM} = 10A, T_J = 25°C *
Max. Peak Reverse Current	I_{RM} 10 mA	V_{RRM}, T_J = 125°C *
Max. Peak Reverse Current	I_{RM} 250 µA	V_{RRM}, T_J = 25°C
Typical Junction Capacitance	C_J 660 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	TSTG	-55°C to + 175°C
Operating junction temp range	TJ	-55°C to + 175°C
Max thermal resistance	$R_{\theta JC}$	2.5°C/W Junction to case
Mounting torque		8-12 inch pounds 6-32 screw)
Weight		.08 ounces (2.3 grams) typical

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Figure 1
Typical Forward Characteristics

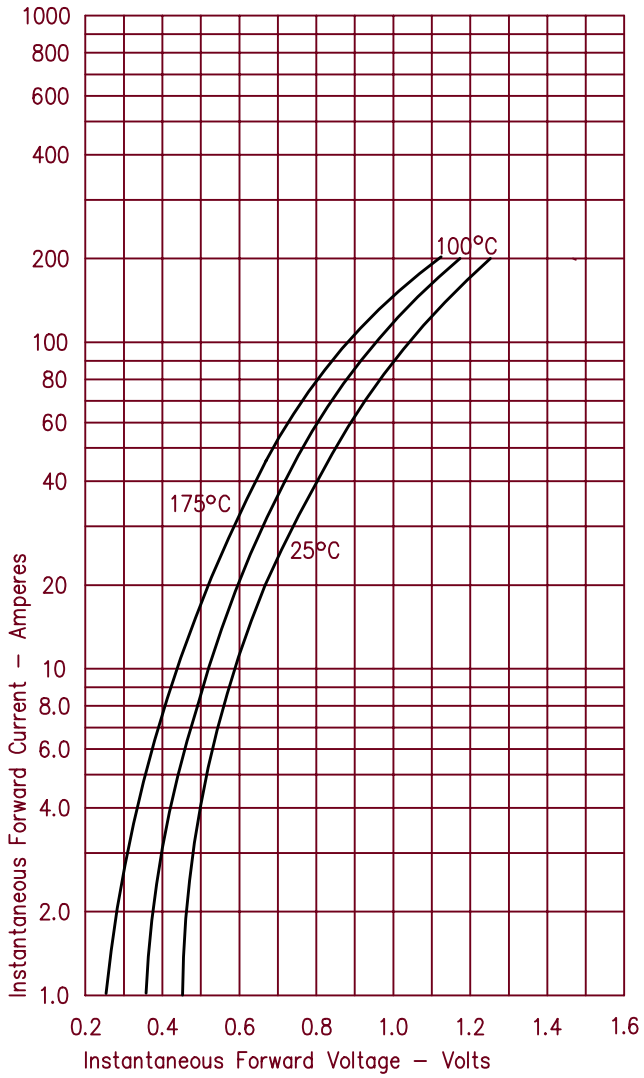

Figure 3
Typical Junction Capacitance

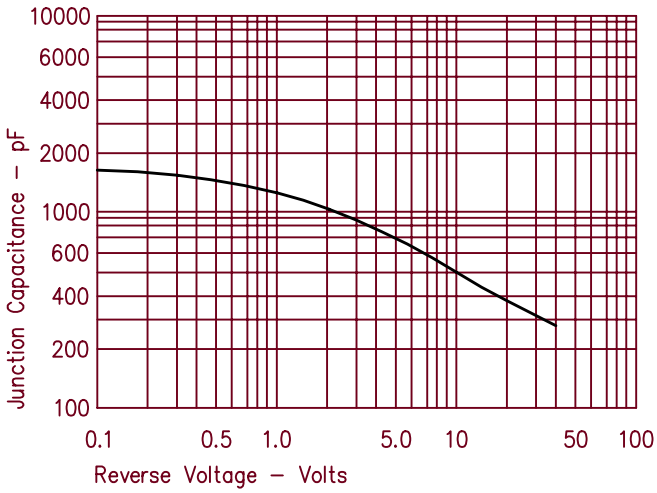

Figure 4
Forward Current Derating

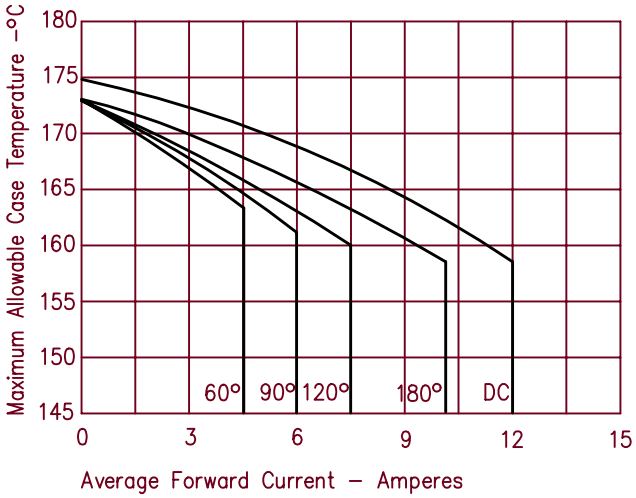

Figure 2
Typical Reverse Characteristics

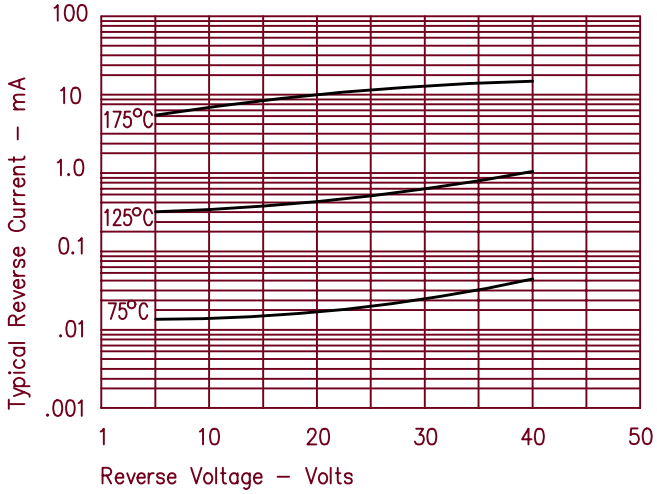

Figure 5
Maximum Forward Power Dissipation