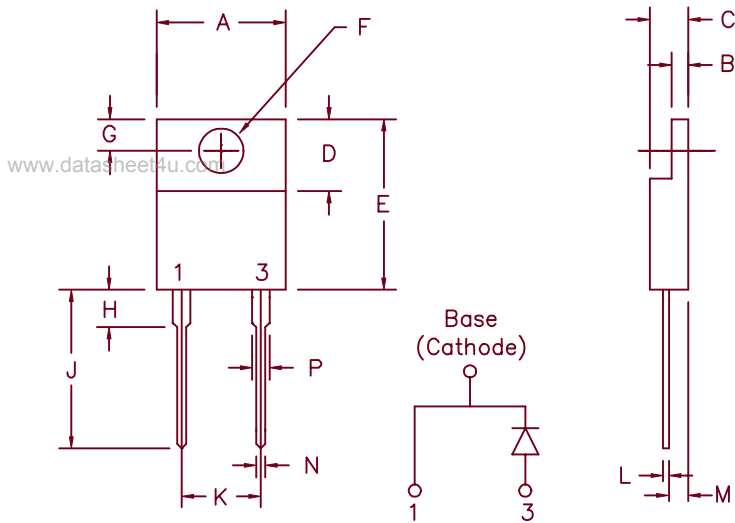


# 10 Amp Schottky Barrier Rectifiers MS1003 — MS1004



Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
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	$T_C = 158^\circ\text{C}$ , Square wave, $R_{\theta JC} = 2.5^\circ\text{C/W}$
Maximum Surge Current	$I_{FSM}$ 225 Amps	8.3ms, half sine, $T_J = 175^\circ\text{C}$
Max. Peak Forward Voltage	$V_{FM}$ .48 Volts	$I_{FM} = 10A$ , $T_J = 175^\circ\text{C}^*$
Max. Peak Forward Voltage	$V_{FM}$ .65 Volts	$I_{FM} = 10A$ , $T_J = 25^\circ\text{C}^*$
Max. Peak Reverse Current	$I_{RM}$ 10 mA	$V_{RRM}$ , $T_J = 125^\circ\text{C}^*$
Max. Peak Reverse Current	$I_{RM}$ 250 $\mu\text{A}$	$V_{RRM}$ , $T_J = 25^\circ\text{C}$
Typical Junction Capacitance	$C_J$ 660 pF	$V_R = 5.0V$ , $T_J = 25^\circ\text{C}$

\*Pulse test: Pulse width 300  $\mu\text{sec}$ . Duty cycle 2%

## Thermal and Mechanical Characteristics

Storage temp range	$T_{STG}$	$-55^\circ\text{C}$ to $+175^\circ\text{C}$
Operating junction temp range	$T_J$	$-55^\circ\text{C}$ to $+175^\circ\text{C}$
Max thermal resistance	$R_{\theta JC}$	$2.5^\circ\text{C/W}$ Junction to case
Mounting torque		8-12 inch pounds 6-32 screw
Weight		.08 ounces (2.3 grams) typical

# MS1003 — MS1004

Figure 1  
Typical Forward Characteristics

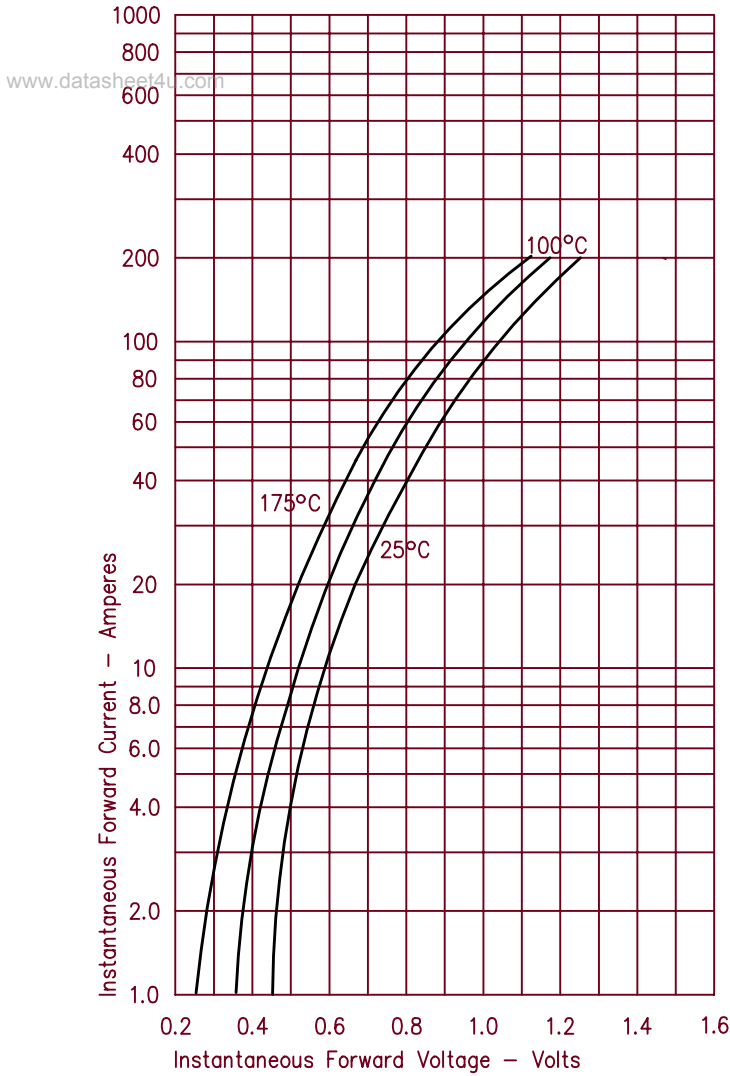


Figure 3  
Typical Junction Capacitance

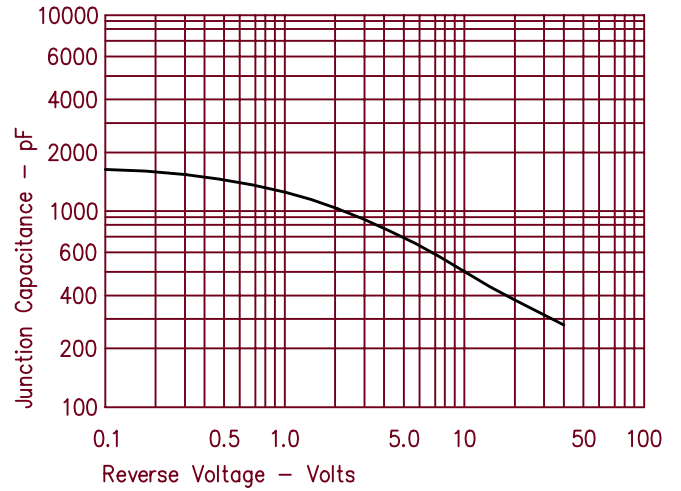


Figure 4  
Forward Current Derating

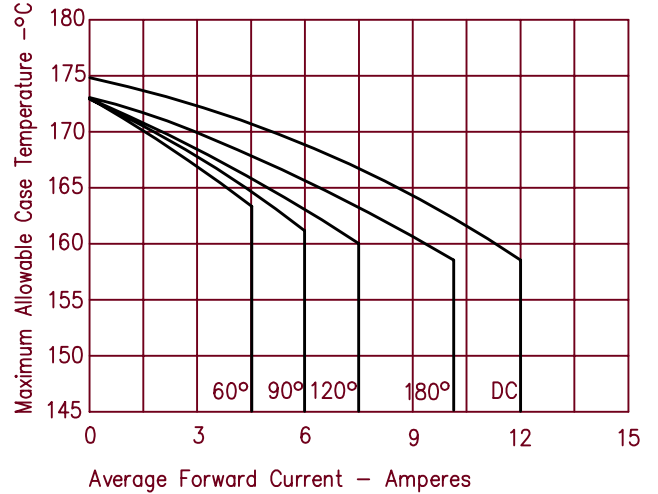


Figure 2  
Typical Reverse Characteristics

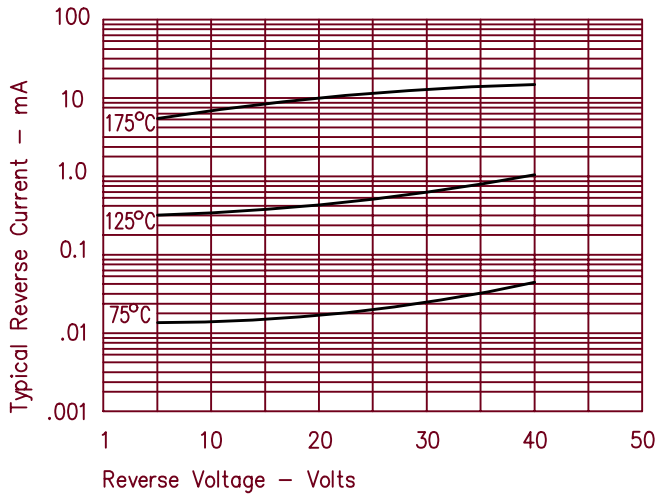


Figure 5  
Maximum Forward Power Dissipation

