16 Amp Schottky Rectifiers
MS1680 — MS16100
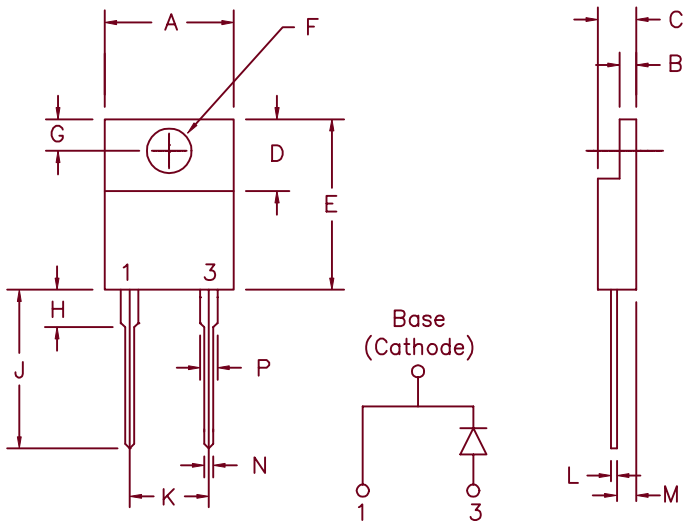
Dim.	Inches		Millimeter		
	Minimum	Maximum	Minimum	Maximum	Notes
A	.390	.415	9.91	10.54	
B	.045	.055	1.14	1.40	
C	.180	.190	4.57	4.83	
D	.245	.260	6.22	6.60	
E	.550	.650	13.97	16.51	
F	.139	.155	3.53	3.94	Dia.
G	.100	.120	2.54	3.05	
H	———	.250	———	6.35	
J	.500	.580	12.70	14.73	
K	.190	.210	4.83	5.33	
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
MS1680	MBR1580 MBR1680	80V	80V
MS1690		90V	90V
MS16100	MBR15100 MBR16100	100V	100V

- Schottky barrier rectifier
- Guard ring protection
- Low power loss, high efficiency
- 175°C Junction Temperature
- Reverse engergy tested
- V_{RRM} 80 to 100 Volts

Electrical Characteristics

Average Forward Current	$I_{F(AV)}$ 16 Amps	$T_C = 149°C$, Square wave, $R_{\theta JC} = 2.0°C/W$
Maximum Surge Current	I_{FSM} 250 Amps	8.3ms, half sine, $T_J = 175°C$
Max. Peak Forward Voltage	V_{FM} 65 Volts	$I_{FM} = 16A$, $T_J = 175°C*$
Max. Peak Forward Voltage	V_{FM} .85 Volts	$I_{FM} = 16A$, $T_J = 25°C*$
Max. Peak Reverse Current	I_{RM} 15 mA	V_{RRM}, $T_J = 125°C*$
Max. Peak Reverse Current	I_{RM} 500 μA	V_{RRM}, $T_J = 25°C$
Typical Junction Capacitance	C_J 570 pF	$T_J = 25°C$, $V_R = 5V$

*Pulse test: Pulse width 300 μsec 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	$R_{\theta JC}$	2.0°C/W junction to case
Mounting torque		8−12 inch pounds (6−32 screw)
Weight		.08 ounces (2.3 grams) typical

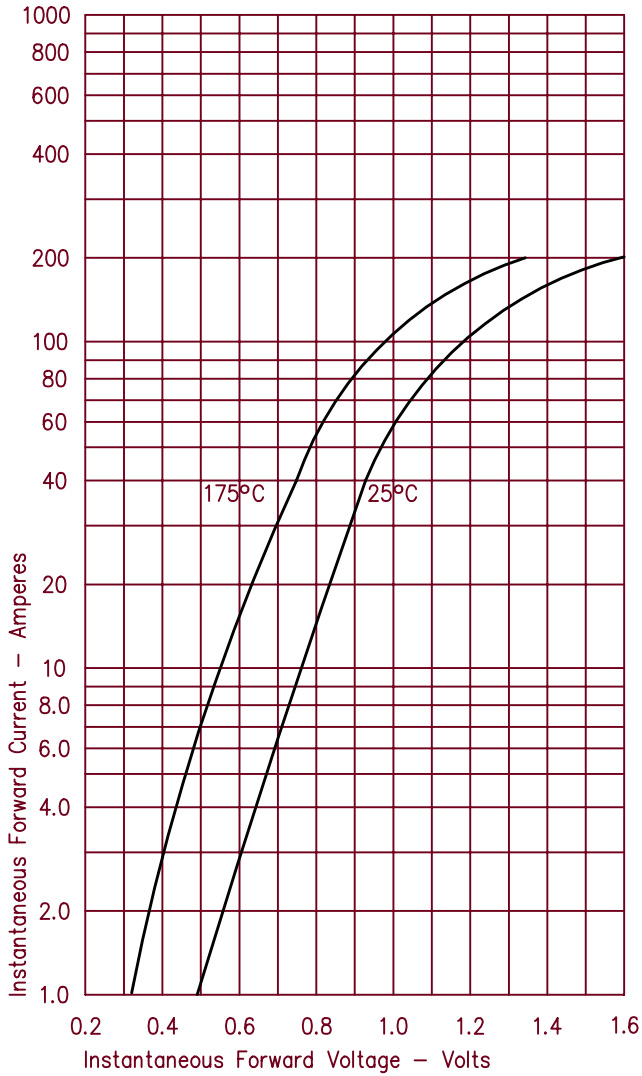# MS1680 — MS16100

Figure 1
Typical Forward Characteristics

- Instantaneous Forward Current – Amperes (vertical axis, 1.0 to 1000)
- Instantaneous Forward Voltage – Volts (horizontal axis, 0.2 to 1.6)
- Curves labeled 175°C and 25°C

Figure 2
Typical Reverse Characteristics

- Typical Reverse Current – mA (vertical axis, .001 to 100)
- Reverse Voltage – Volts (horizontal axis, 0 to 100)
- Curves labeled 175°C, 125°C, 75°C, 25°C

Figure 3
Typical Junction Capacitance

- Junction Capacitance – pF (vertical axis, 100 to 10000)
- Reverse Voltage – Volts (horizontal axis, 0.1 to 100)
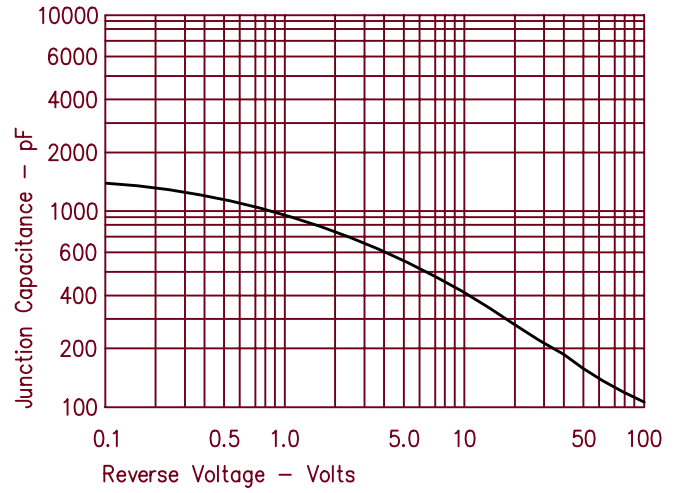
Figure 4
Forward Current Derating

- Maximum Allowable Case Temperature –°C (vertical axis, 145 to 180)
- Average Forward Current – Amperes (horizontal axis, 0 to 20)
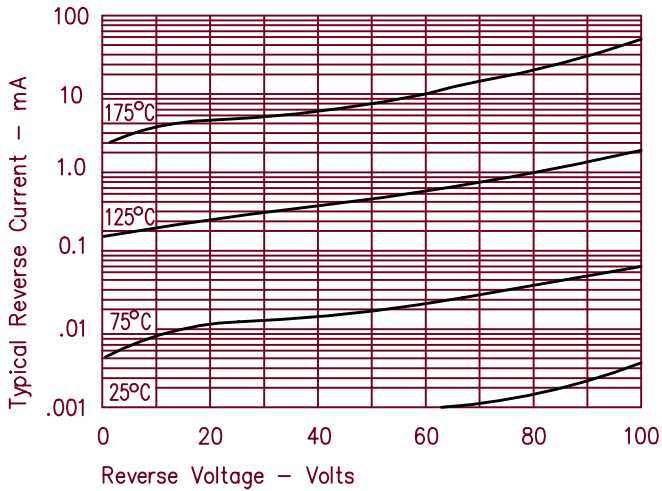- Curves labeled 60°, 90°, 120°, 180°, DC

Figure 5
Maximum Forward Power Dissipation

- Maximum Power Dissipation – Watts (vertical axis, 0 to 14)
- Average Forward Current – Amperes (horizontal axis, 0 to 20)
- Curves labeled 60°, 90°, 120°, 180°, DC