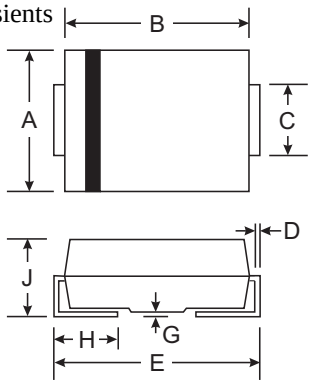
MBRS540

5.0A Surface Mount Schottky Power Rectifier

Features

- Pb−Free Package is Available
- Small Compact Surface Mountable Package with J−Bend Leads
- Rectangular Package for Automated Handling
- Highly Stable Oxide Passivated Junction
- Excellent Ability to Withstand Reverse Avalanche Energy Transients
- Guardring for Stress Protection



SMC		
Dim	**Min**	**Max**
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

Mechanical Data

- Case: Epoxy, Molded, Epoxy Meets UL 94 V−0 @ 0.125 in
- Weight: 217 mg (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Polarity: Notch in Plastic Body Indicates Cathode Lead
- ESD Rating: Machine Model, C (> 400 V)
  Human Body Model, 3B (> 8000 V)
- Device Meets MSL 1 Requirements

Maximum Ratings and Electrical Characteristics @ T_A = 25°C unless otherwise specified

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	40	V
Average Rectified Forward Current (At Rated V_R, T_C = 105°C)	$I_{F(AV)}$	5	A
Peak Repetitive Forward Current (At Rated V_R, Square Wave, 20 KHz, T_C = 80°C)	I_{FRM}	10	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	190	A
Storage Temperature Range	Tstg	−65 to +150	°C
Operating Junction Temperature	T_J	−65 to +125	°C
Voltage Rate of Change (Rated V_R)	dv/dt	10,000	V/μs

Maximum Instantaneous Forward Voltage (Note 2)	(i_F = 5.0 A, T_C= 25°C)	V_F	0.50	V
Maximum Instantaneous Reverse Current (Note 2)	(Rated dc Voltage, T_C = 25°C) (Rated dc Voltage, T_C = 100°C)	i_R	0.3 15	mA

1. Rating applies when surface mounted on the minimum pad size recommended.
2. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

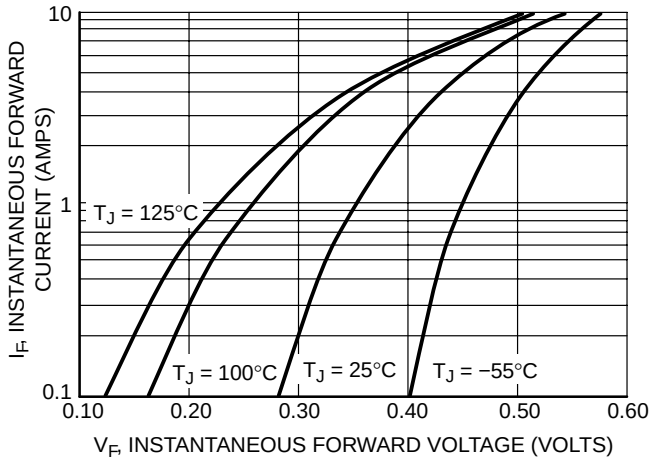


Figure 1. Typical Forward Voltage

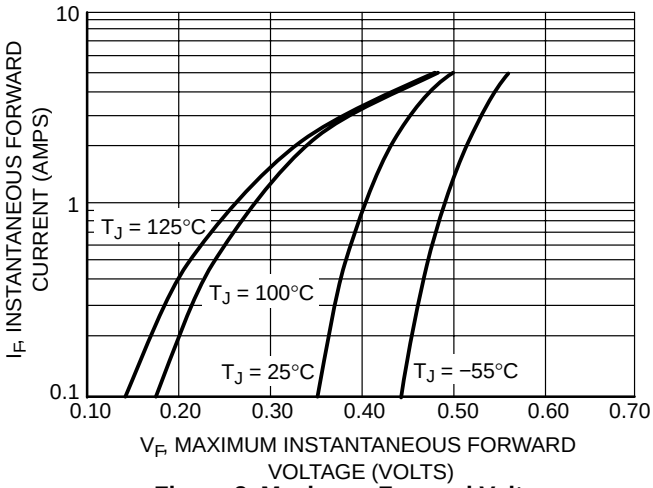


Figure 2. Maximum Forward Voltage

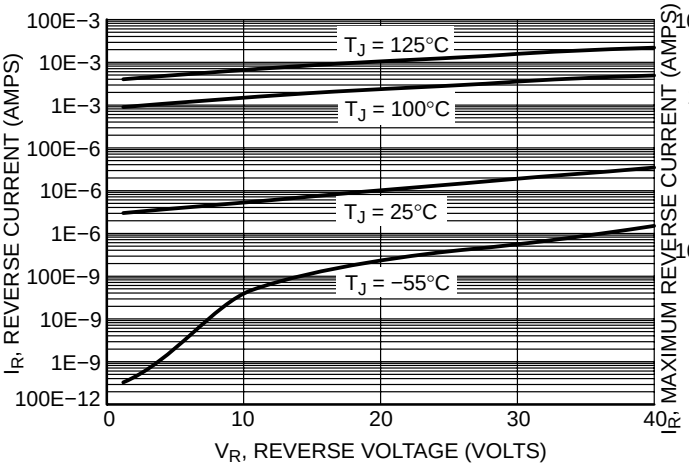


Figure 3. Typical Reverse Current

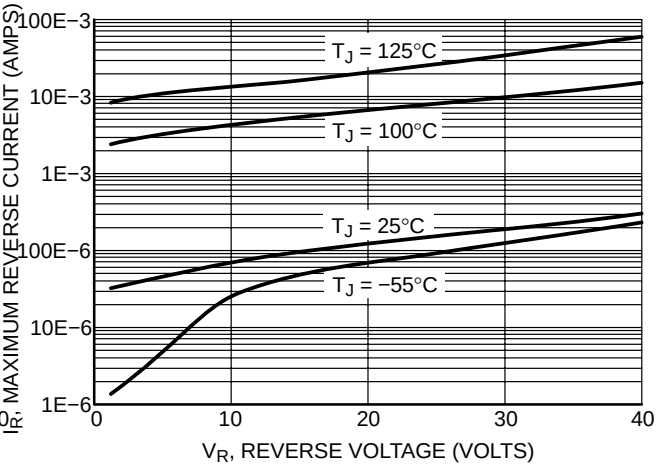


Figure 4. Maximum Reverse Current

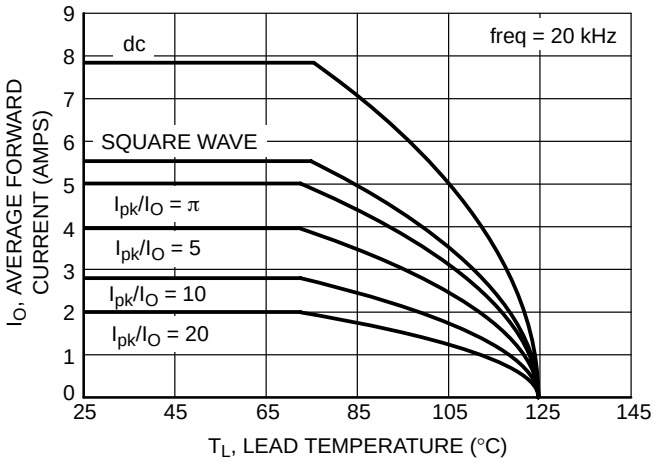


Figure 5. Current Derating

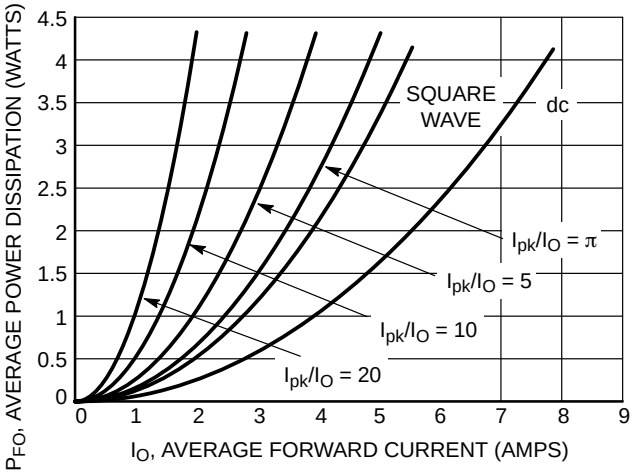
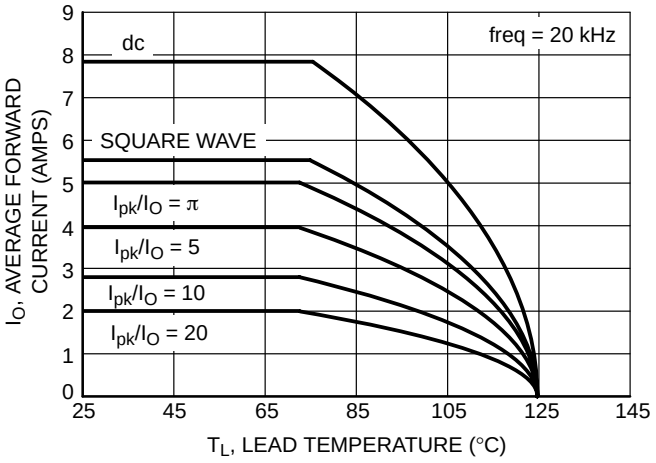


Figure 6. Forward Power Dissipation



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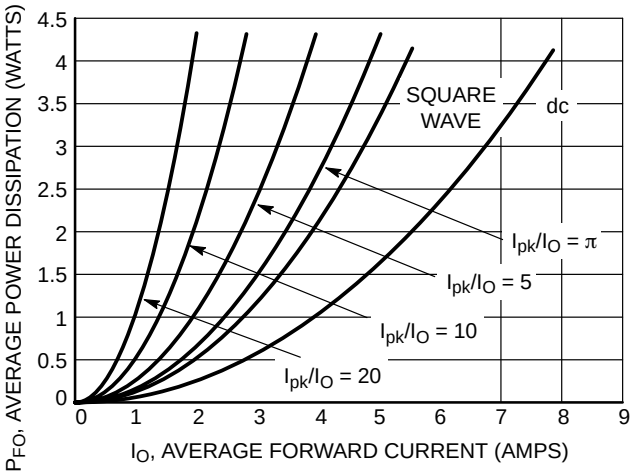

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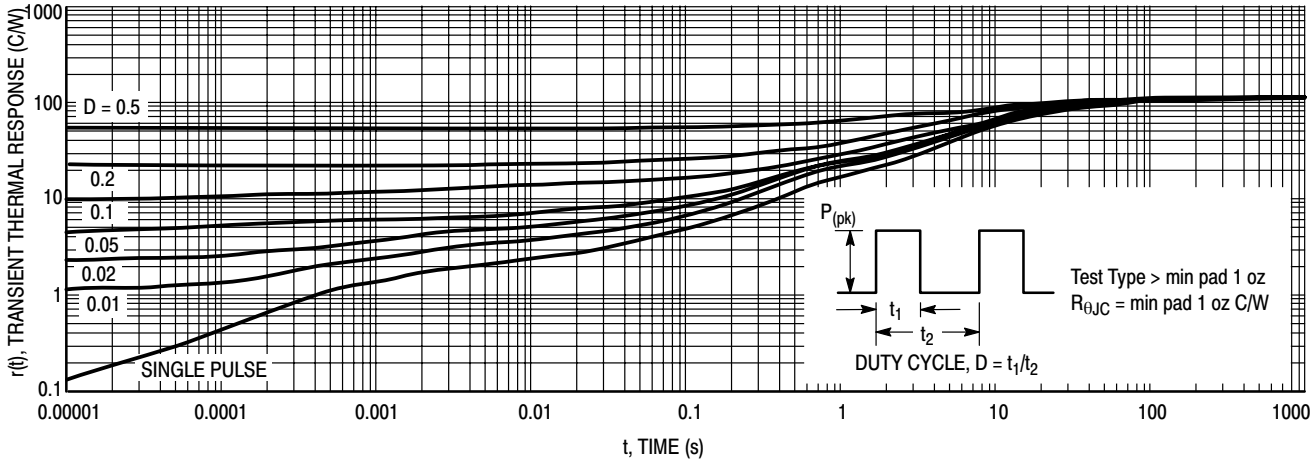

Figure 9. Thermal Response − MBRS540T3 on min pad

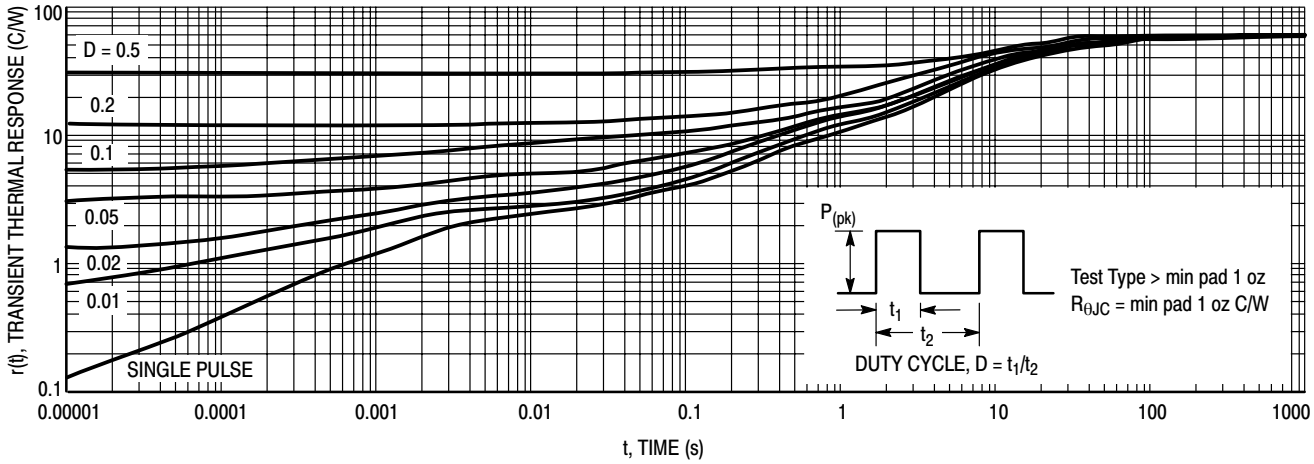

Figure 10. Thermal Response − MBRS540T3 on 1” pad