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MBRAF3200T3G

Surface Mount Schottky Power Rectifier

This device employs the Schottky Barrier principle in a large area metal−to−silicon power diode. State−of−the−art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency rectification, or as free wheeling and polarity protection diodes in surface mount applications where compact size and weight are critical to the system.

Features

- Small Compact Surface Mountable Package with J−Bend Leads
- Rectangular Package for Automated Handling
- Highly Stable Oxide Passivated Junction
- Very High Blocking Voltage − 200 V
- 150°C Operating Junction Temperature
- Guard−Ring for Stress Protection
- This is a Pb−Free Device

Mechanical Charactersistics

- Weight: 95 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
- Cathode Polarity Band
- Device Meets MSL 1 Requirements
- ESD Ratings: Machine Model = A
  Human Body Model = 1B

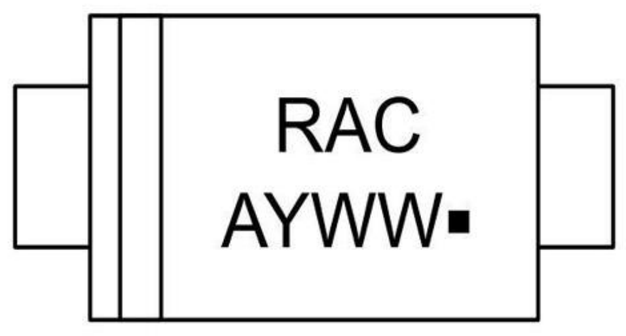
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	200	V
Average Rectified Forward Current (T_L = 100°C)	$I_{F(AV)}$	3.0	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	100	A
Operating Junction Temperature	T_J	−65 to +150	°C

SCHOTTKY BARRIER
RECTIFIER
3.0 AMPERE
200 VOLTS

SMA−FL
CASE 403AA
STYLE 6

MARKING DIAGRAM



RAC = Specific Device Code
A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb−Free Package

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction−to−Lead (Note 1 Thermal Resistance, Junction−to−Ambient (Note 1)	$R_{\theta JL}$ $R_{\theta JA}$	25 90	°C/W

1. 1 inch square pad size (1 × 0.5 inch) for each lead on FR4 board.

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 2)	V_F		V
(I_F = 3.0 A, T_J = 25°C)		0.84	
(I_F = 4.0 A, T_J = 25°C)		0.86	
(I_F = 3.0 A, T_J = 150°C)		0.62	
Maximum Instantaneous Reverse Current (Note 2)	I_R		
(Rated dc Voltage, T_J = 25°C)		1.0	mA
(Rated dc Voltage, T_J = 150°C)		6.0	mA

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

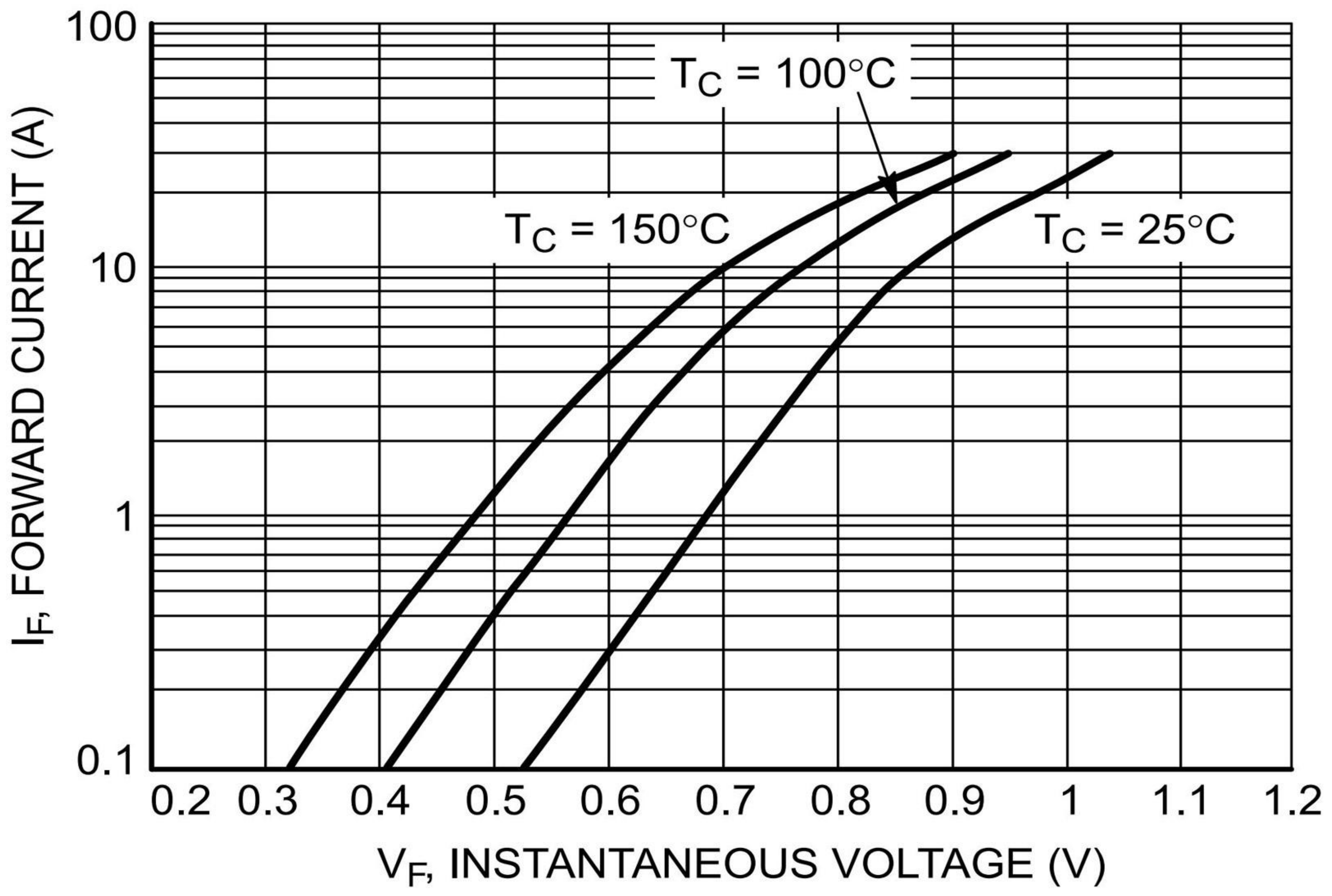


Figure 1. Typical Forward Voltage

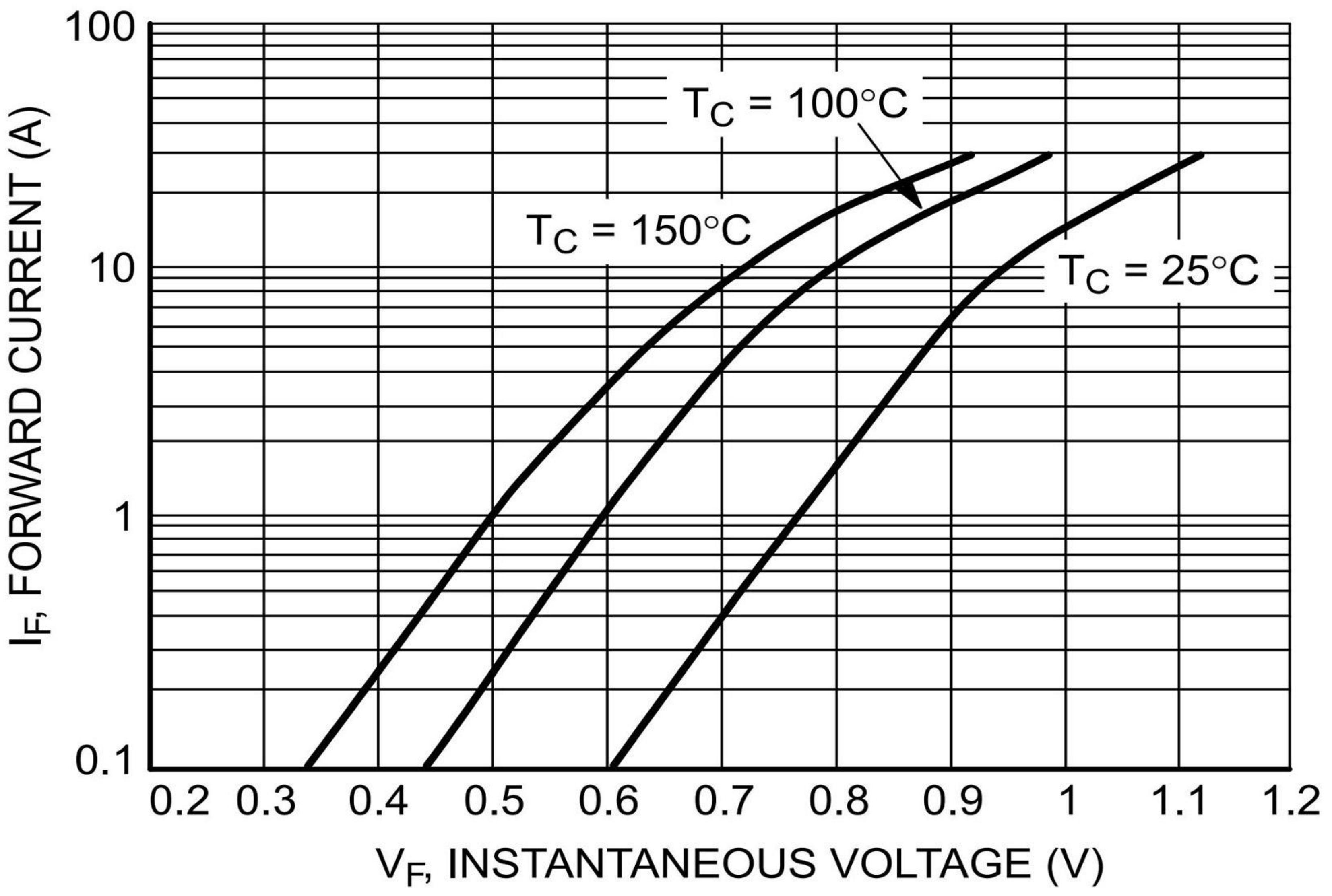


Figure 2. Maximum Forward Voltage

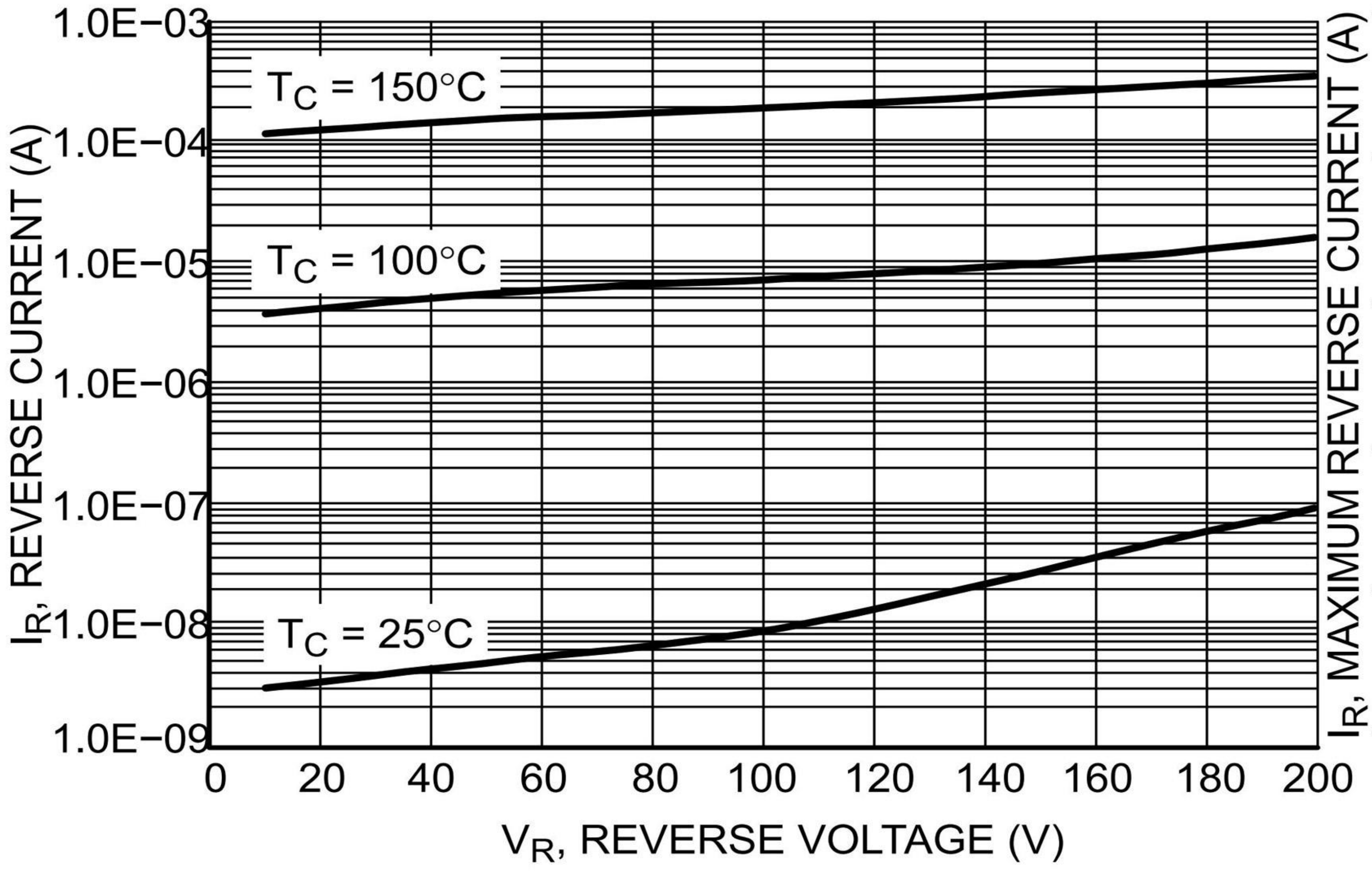


Figure 3. Typical Reverse Current

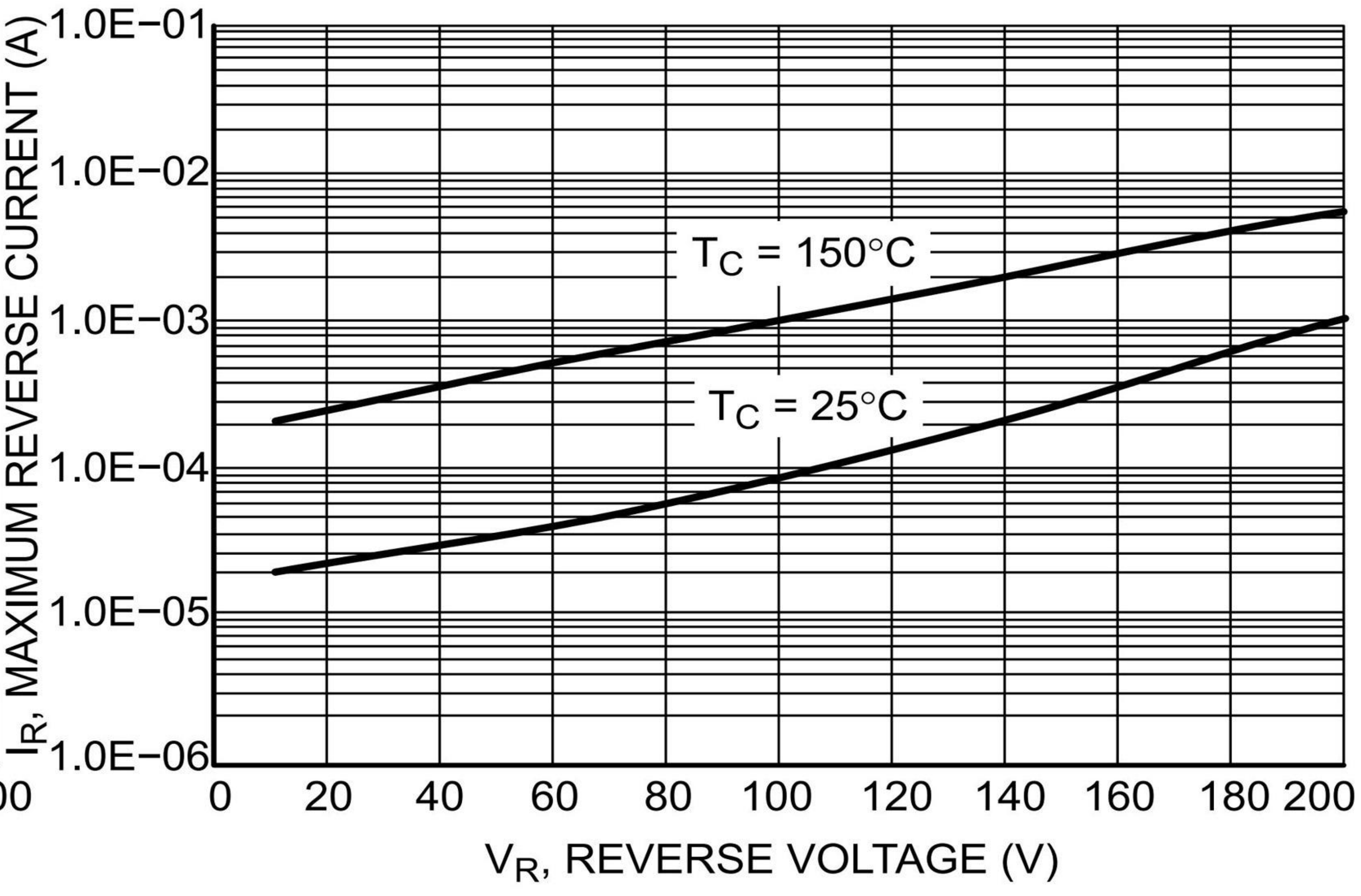


Figure 4. Maximum Reverse Current

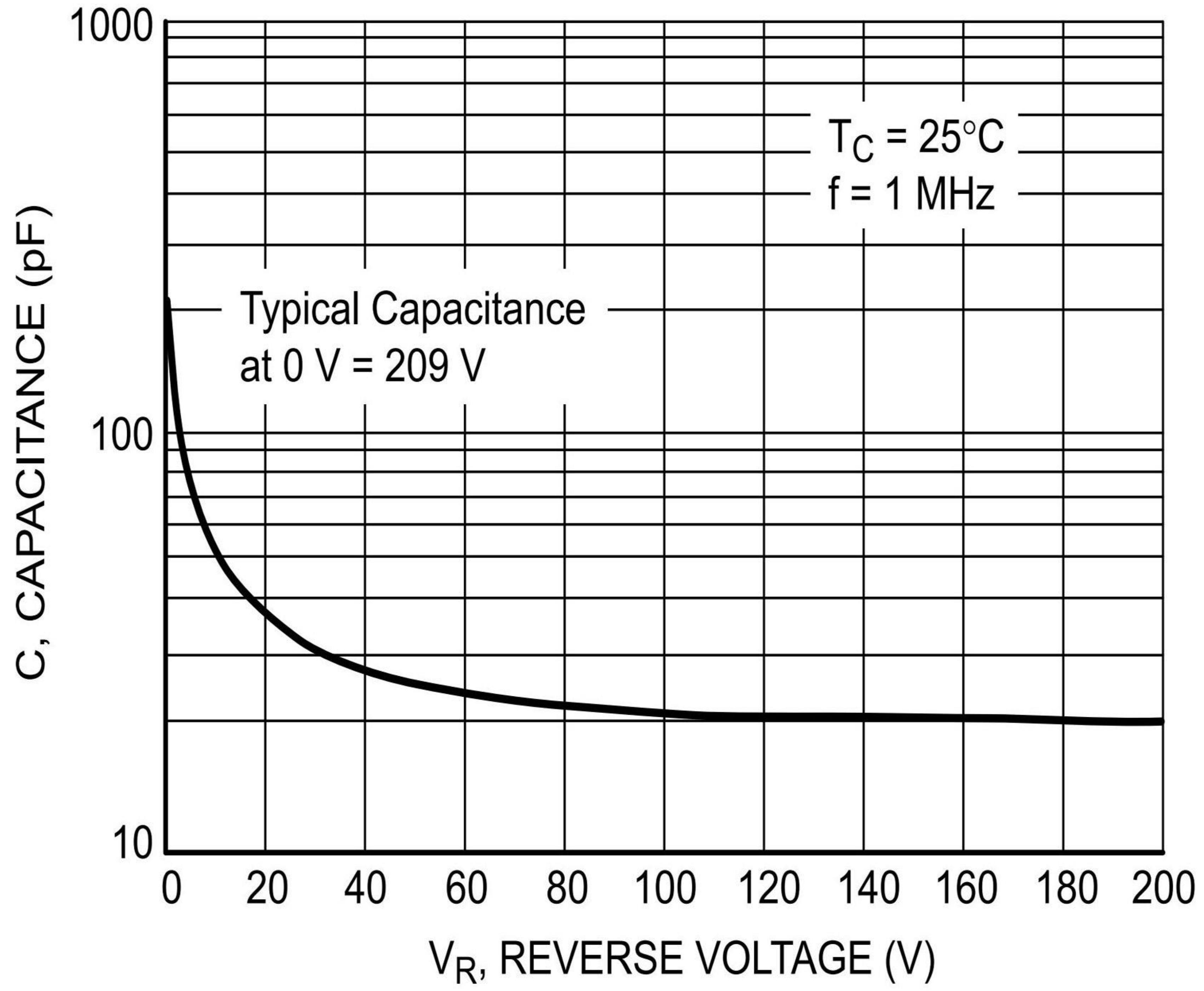


Figure 5. Typical Capacitance

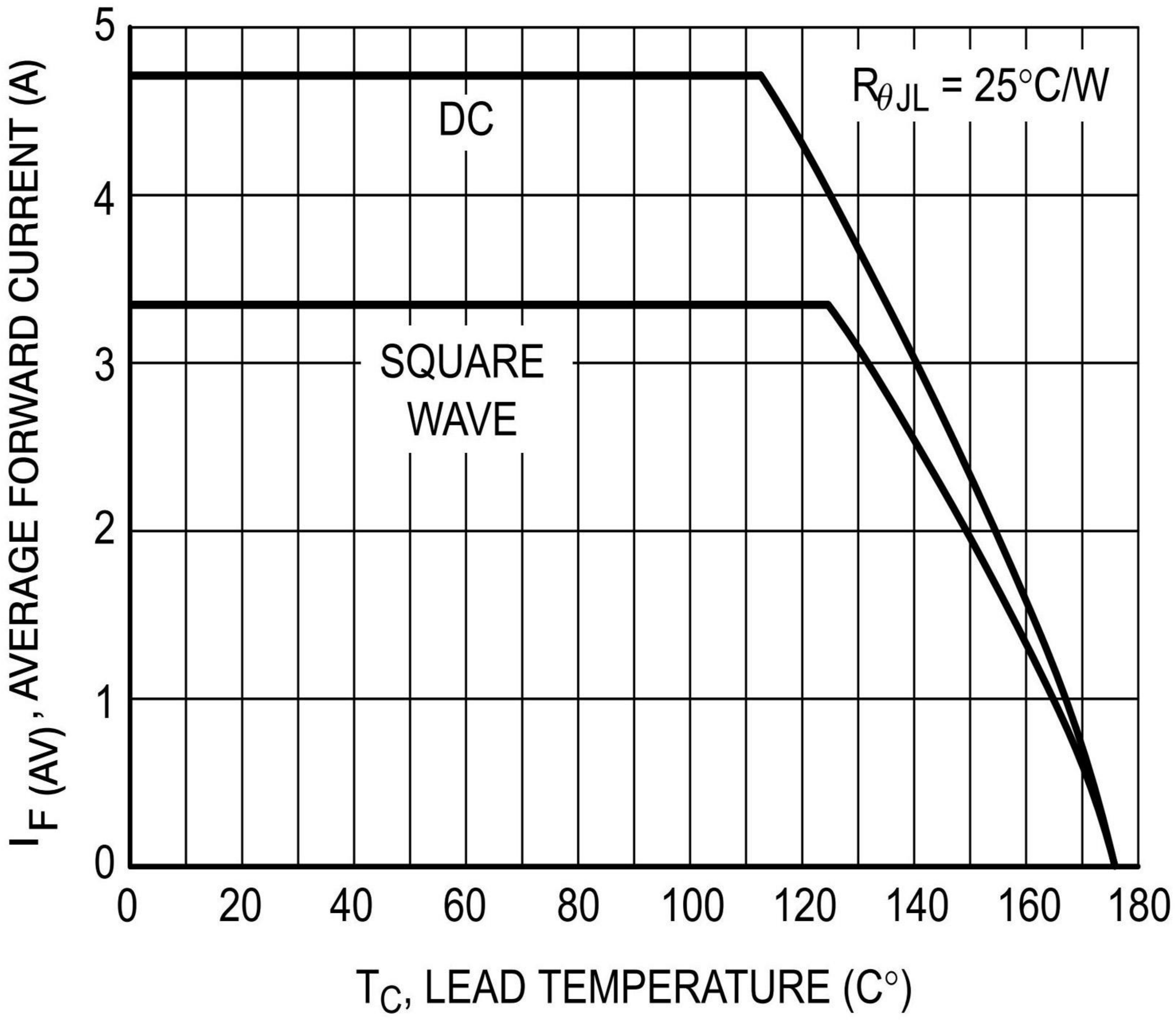


Figure 6. Current Derating

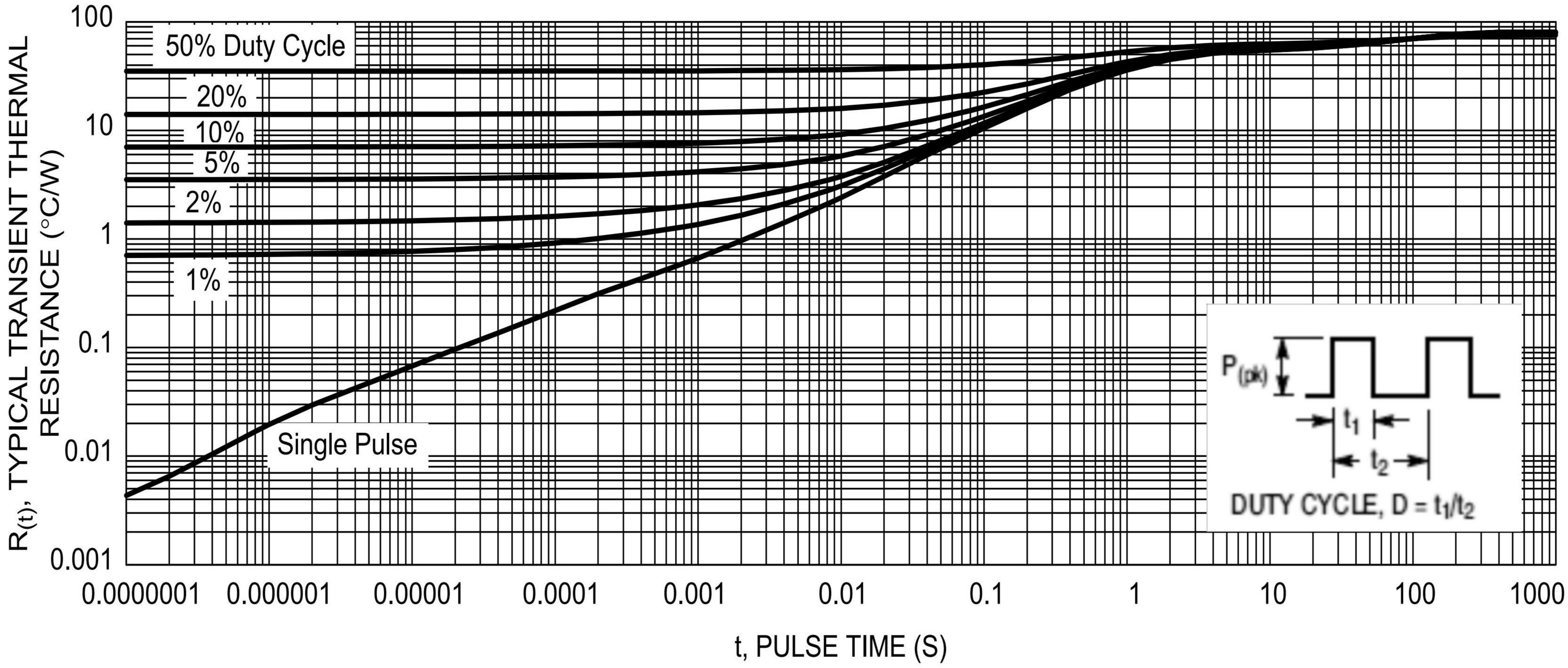


Figure 7. Typical Transient Thermal Response, Junction−to−Ambient

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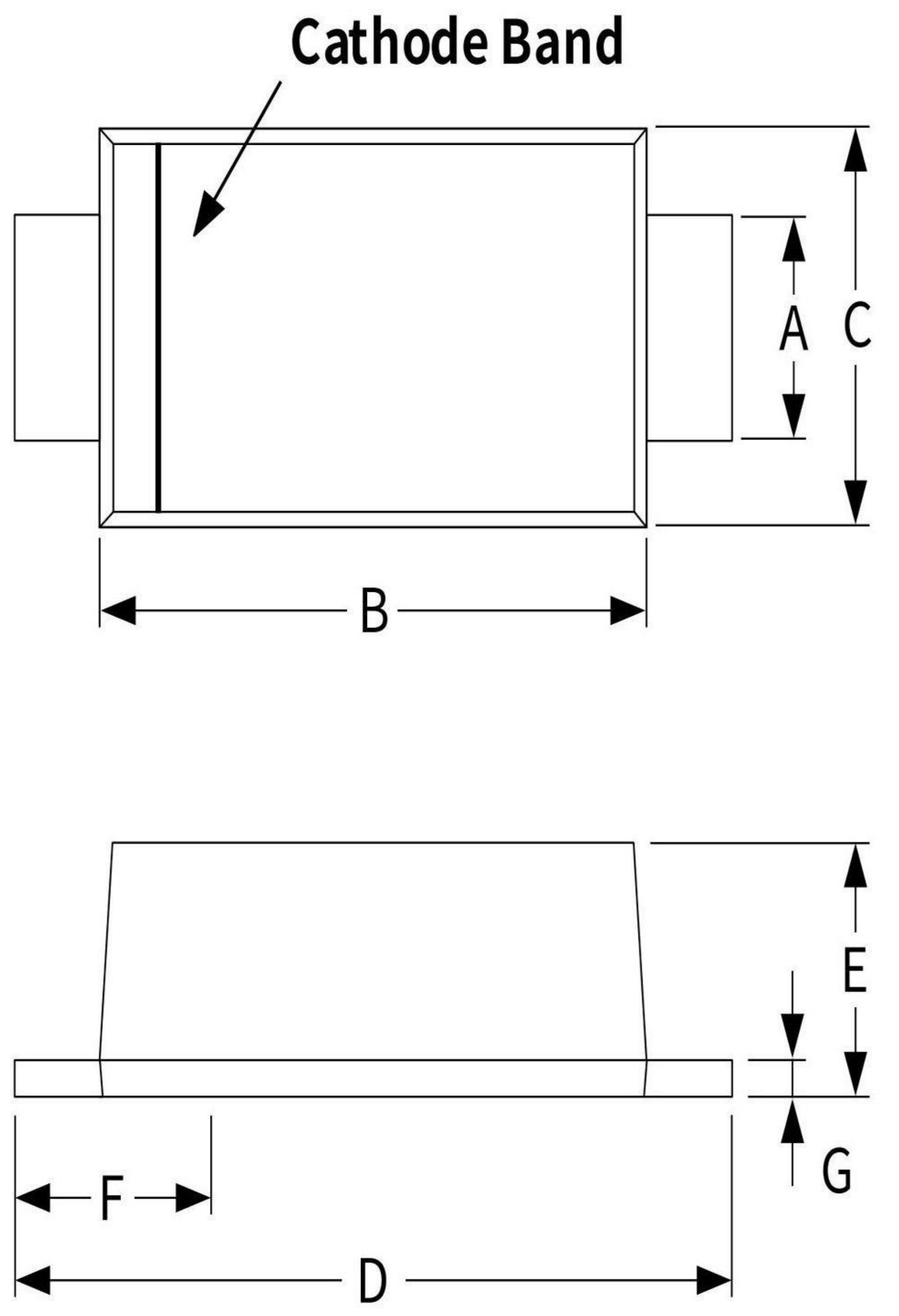
Ordering Information

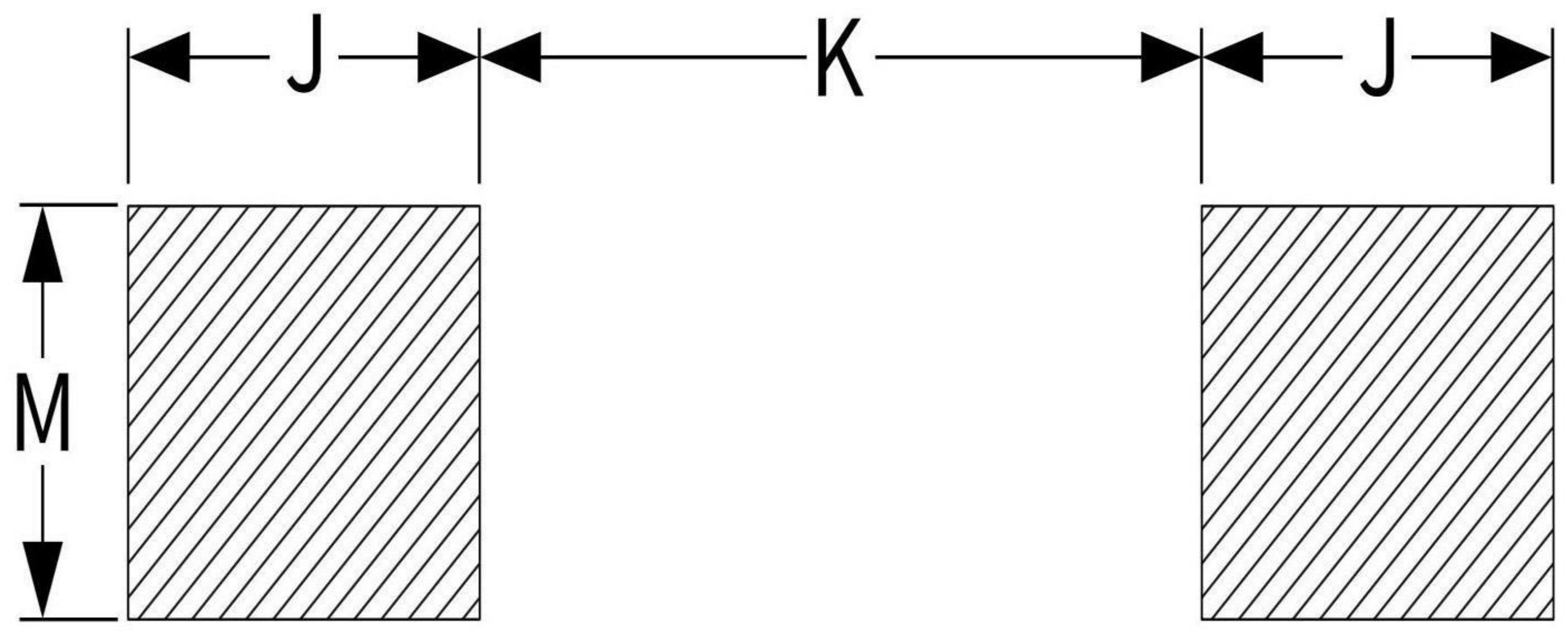
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOD-123FL	R1	0.0169	3000	45000	180000	7''

Package Outline Dimensions (SOD -123FL)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.10	0.035	0.430
B	2.55	2.85	0.100	0.111
C	1.60	1.90	0.063	0.074
D	3.60	3.90	0.031	0.043
E	1.00	1.20	0.031	0.035
F	0.40	0.90	0.047	0.055
G	0.10	0.25	0.003	0.007

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	1.00	-	0.040	-
K	-	1.90	-	0.074
M	1.50	-	0.059	-