

OM SENI

MBRA320T3G

Surface Mount Schottky Power Rectifier SMA Power Surface Mount Package

Employing 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 diodes in surface mount applications where compact size and weight are critical to the system.

Features

- Small Compact Surface Mountable Package with J-Bent Leads
- Rectangular Package for Automated Handling
- Highly Stable Oxide Passivated Junction
- Very Low Forward Voltage Drop
- Guardring for Stress Protection
- These are Pb-Free Devices

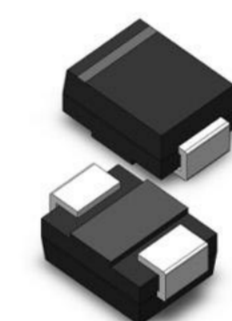
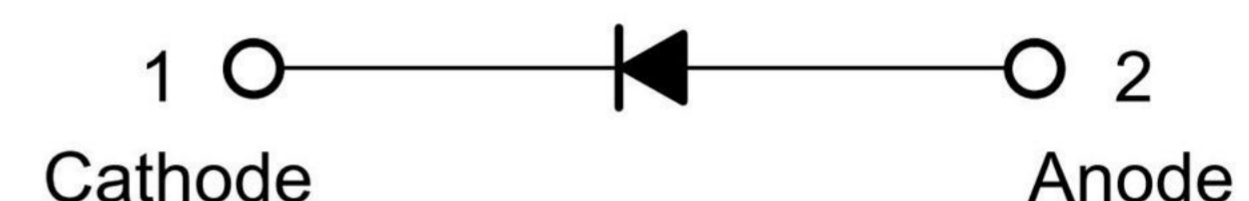
Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 70 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
- Shipped in 12 mm tape, 5000 units per 13 inch reel
- Polarity: Cathode Lead Indicated by Polarity Band
- ESD Ratings: Machine Model = C
Human Body Model = 3B
- Device Meets MSL 1 Requirements

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	V
Average Rectified Forward Current (At Rated V_R , $T_L = 100^\circ\text{C}$)	I_O	3.0	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	80	A
Storage Temperature	T_{stg}	-65 to +150	$^\circ\text{C}$
Operating Junction Temperature	T_J	-65 to +125	$^\circ\text{C}$
Voltage Rate of Change (Rated V_R , $T_J = 25^\circ\text{C}$)	dv/dt	10,000	V/ μs

SCHOTTKY BARRIER RECTIFIER 3.0 AMPERES 20 VOLTS



SMA
CASE 403D

MARKING DIAGRAM



- A32 = Device Code
A = Assembly Location
Y = Year
WW = Work Week
■ = Pb-Free Package

ORDERING INFORMATION

Device	Package	Shipping†
MBRA320T3G	SMA (Pb-Free)	5000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

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THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance - Junction-to-Lead (Note 1)	$R_{\theta JL}$	15	$^{\circ}\text{C}/\text{W}$
Thermal Resistance - Junction-to-Ambient (Note 1)	$R_{\theta JA}$	80	$^{\circ}\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 2)	$(I_F = 3.0 \text{ A}, T_J = 25^{\circ}\text{C})$	V_F	0.50	Volts
Maximum Instantaneous Reverse Current (Note 2)	$(V_R = 20 \text{ V})$	I_R	$T_J = 25^{\circ}\text{C}$	mA
			$T_J = 100^{\circ}\text{C}$	
			2.0	20

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.

1. Mounted on 2" Square PC Board with 1" Square Total Pad Size, PC Board FR4.
2. Pulse Test: Pulse Width = 300 s, Duty Cycle $\leq 2.0\%$.

TYPICAL CHARACTERISTICS

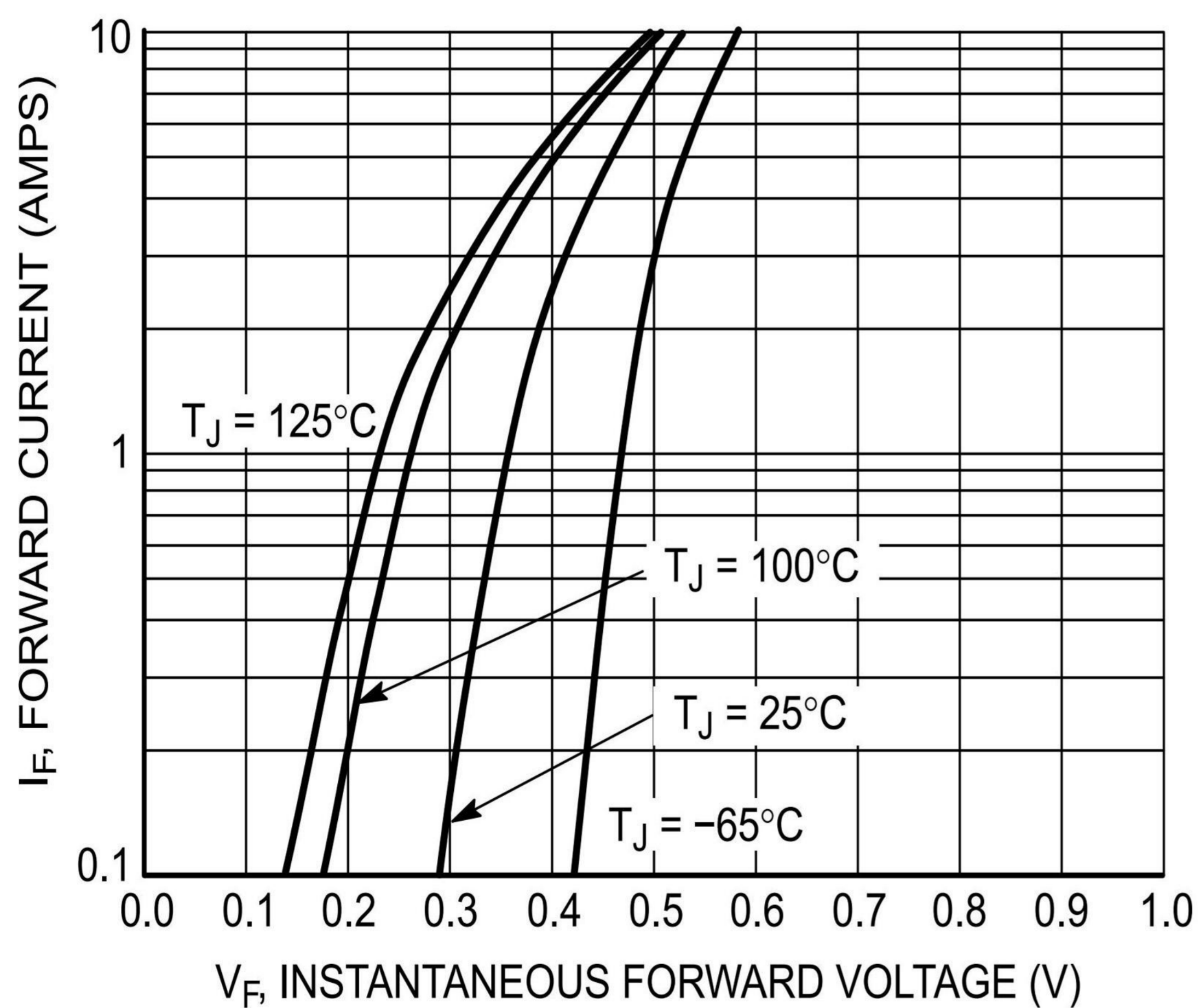


Figure 1. Typical Forward Voltage

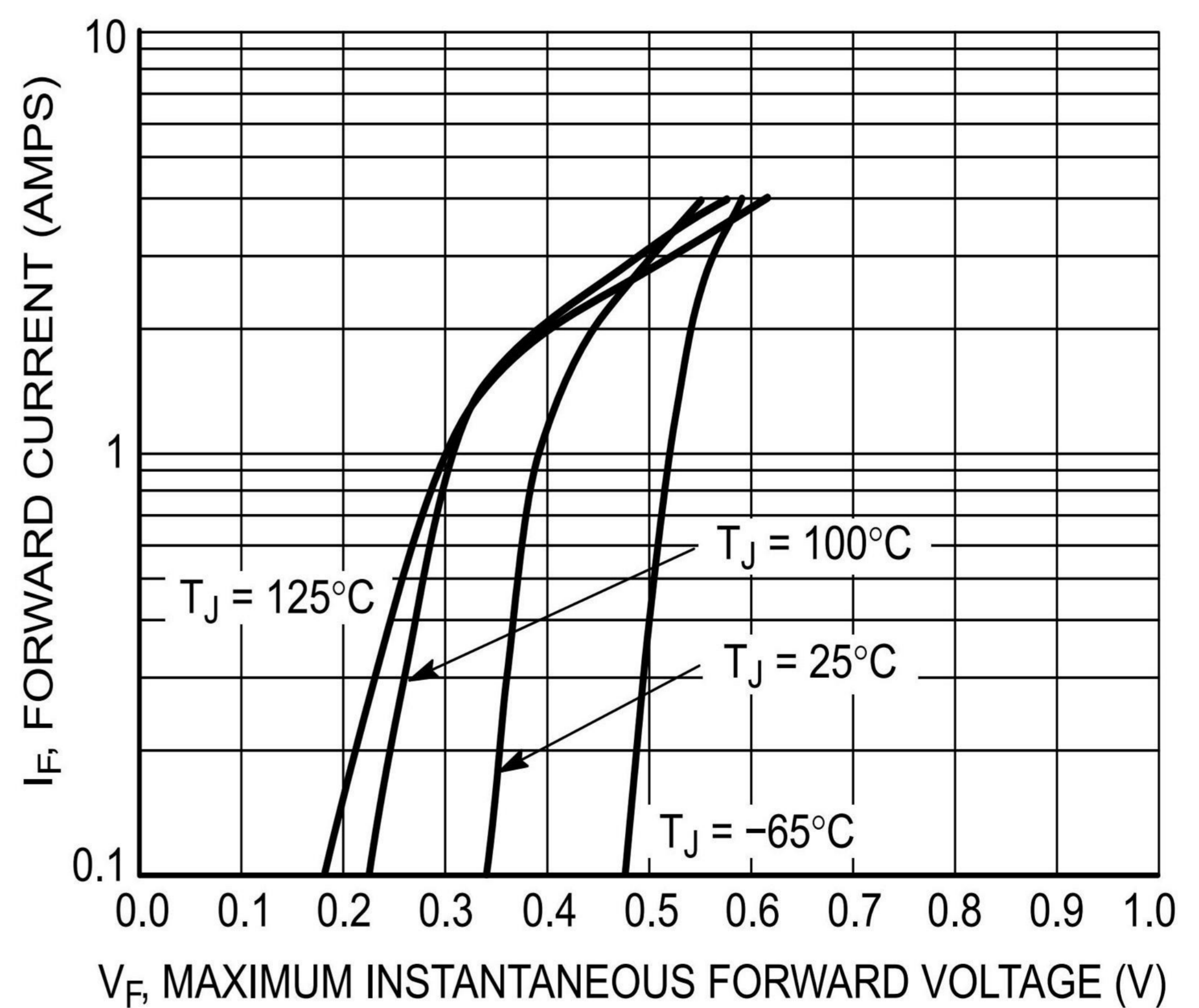


Figure 2. Maximum Forward Voltage

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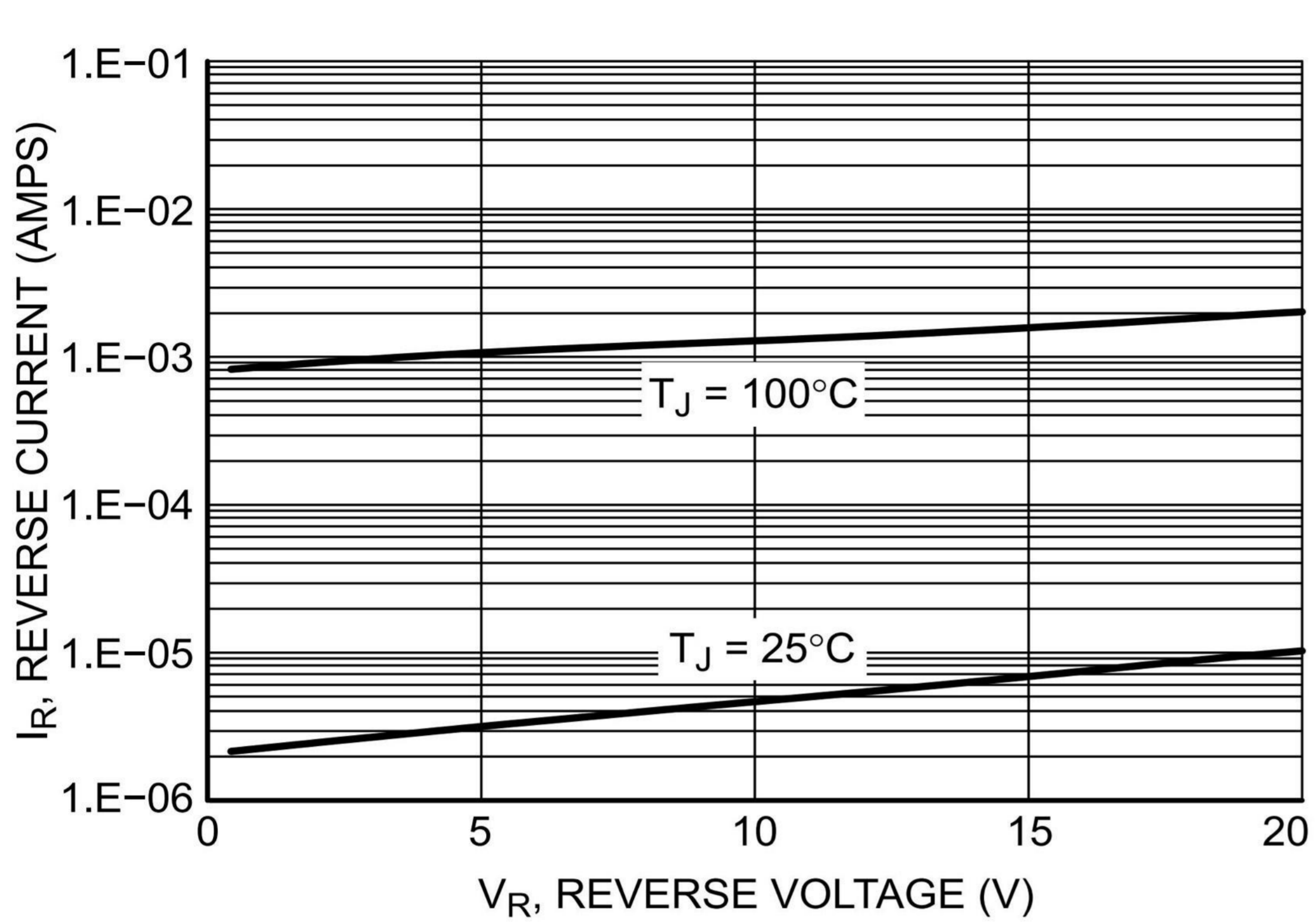


Figure 3. Typical Reverse Current

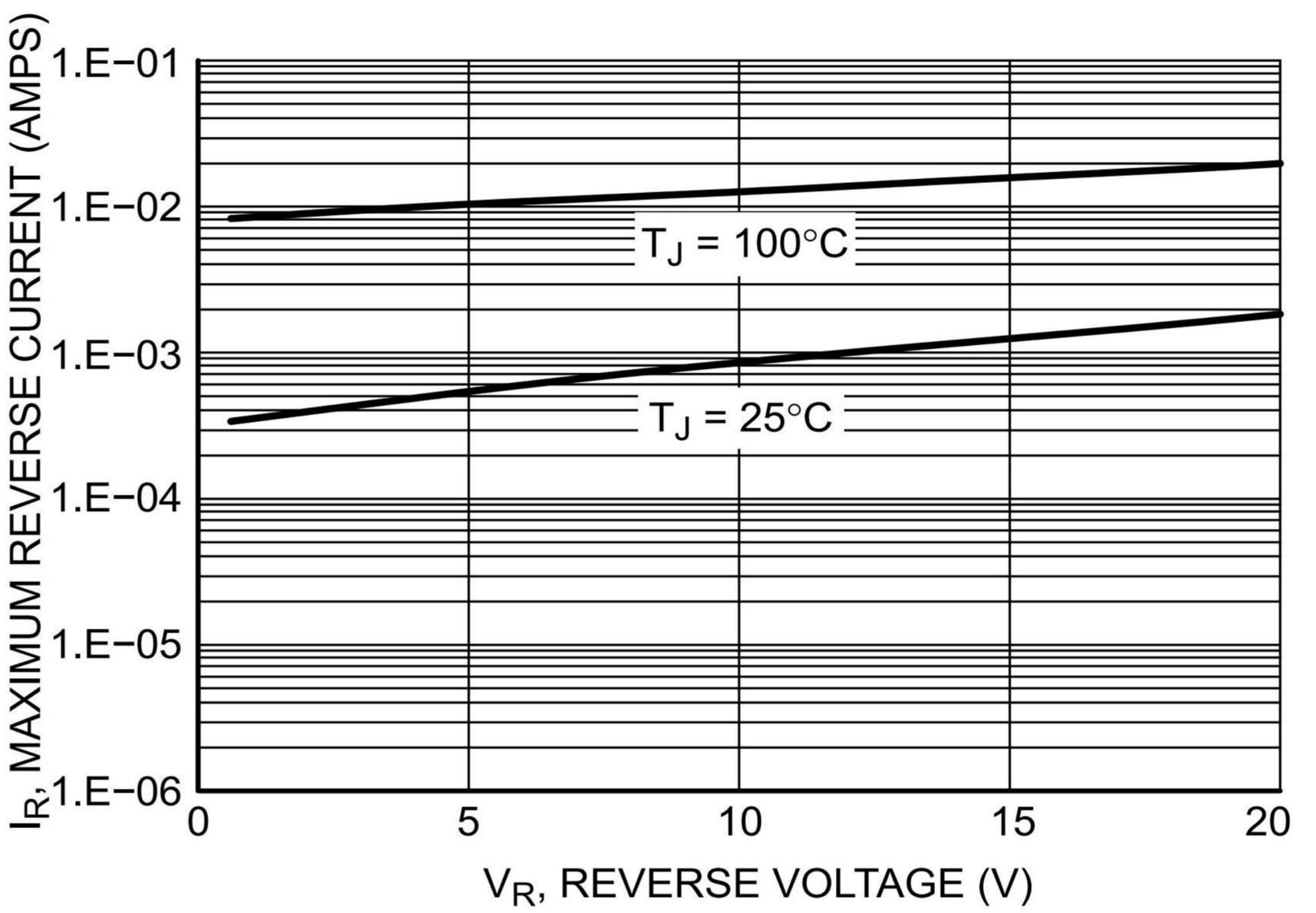


Figure 4. Maximum Reverse Current

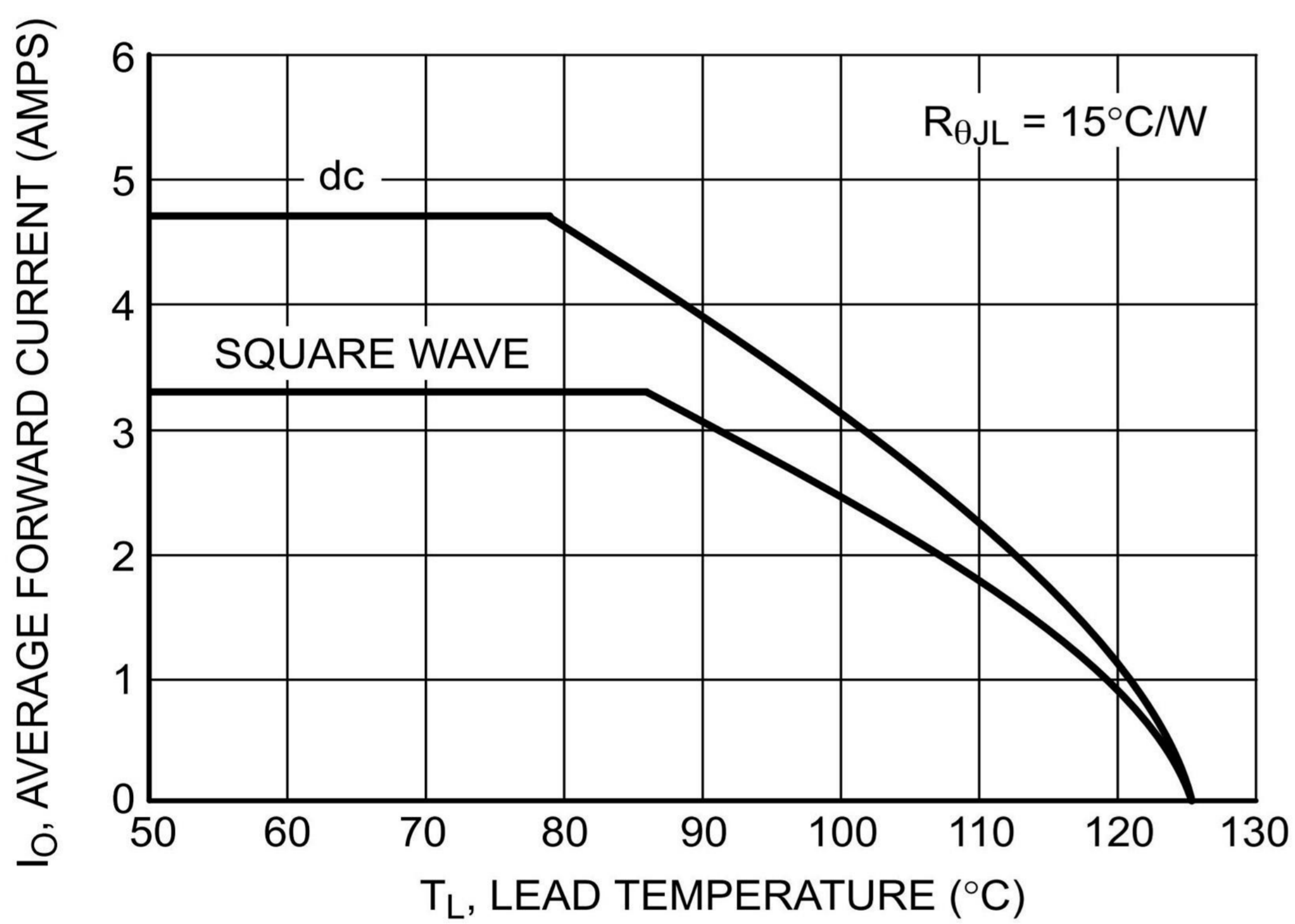


Figure 5. Current Derating

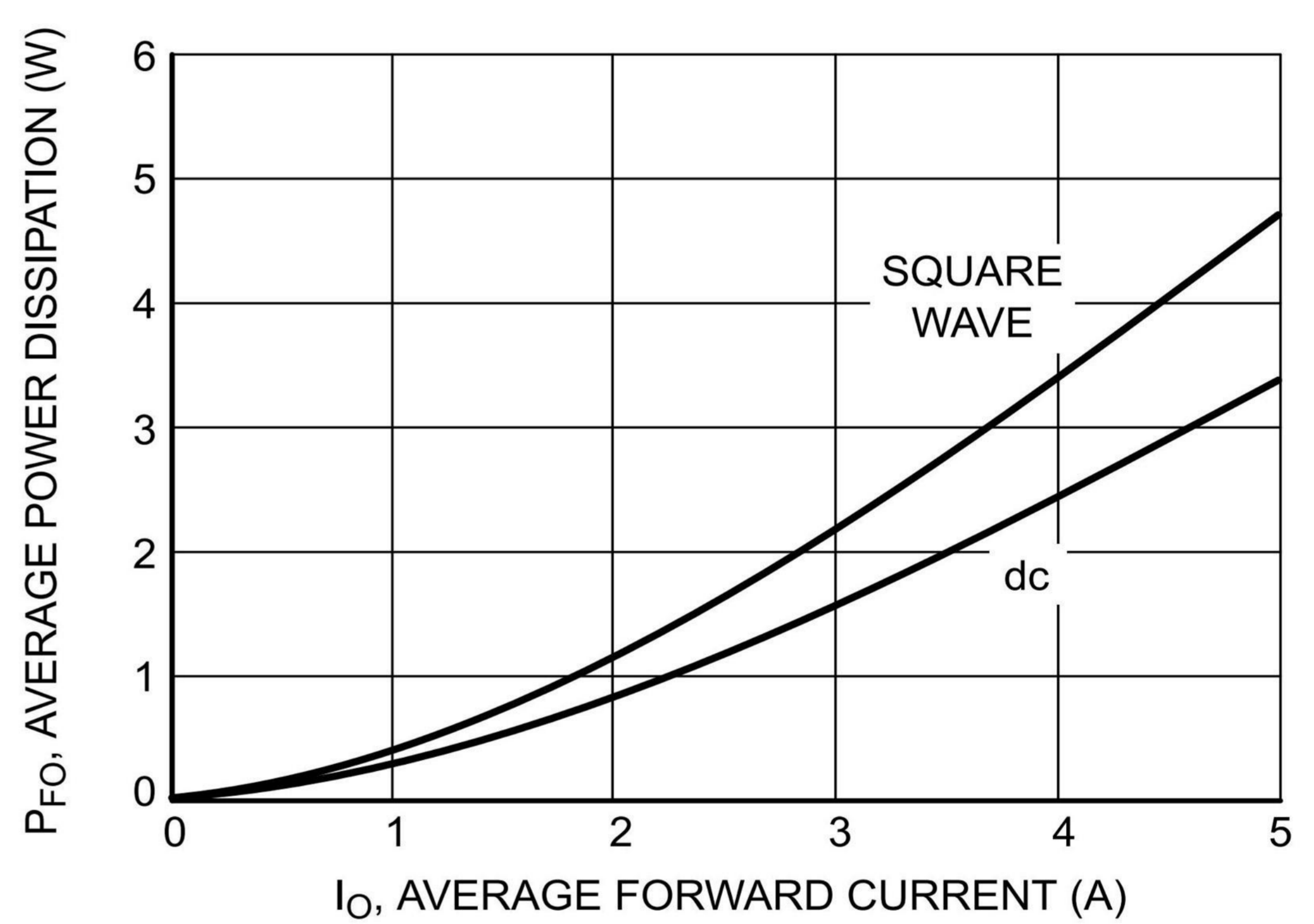


Figure 6. Forward Power Dissipation

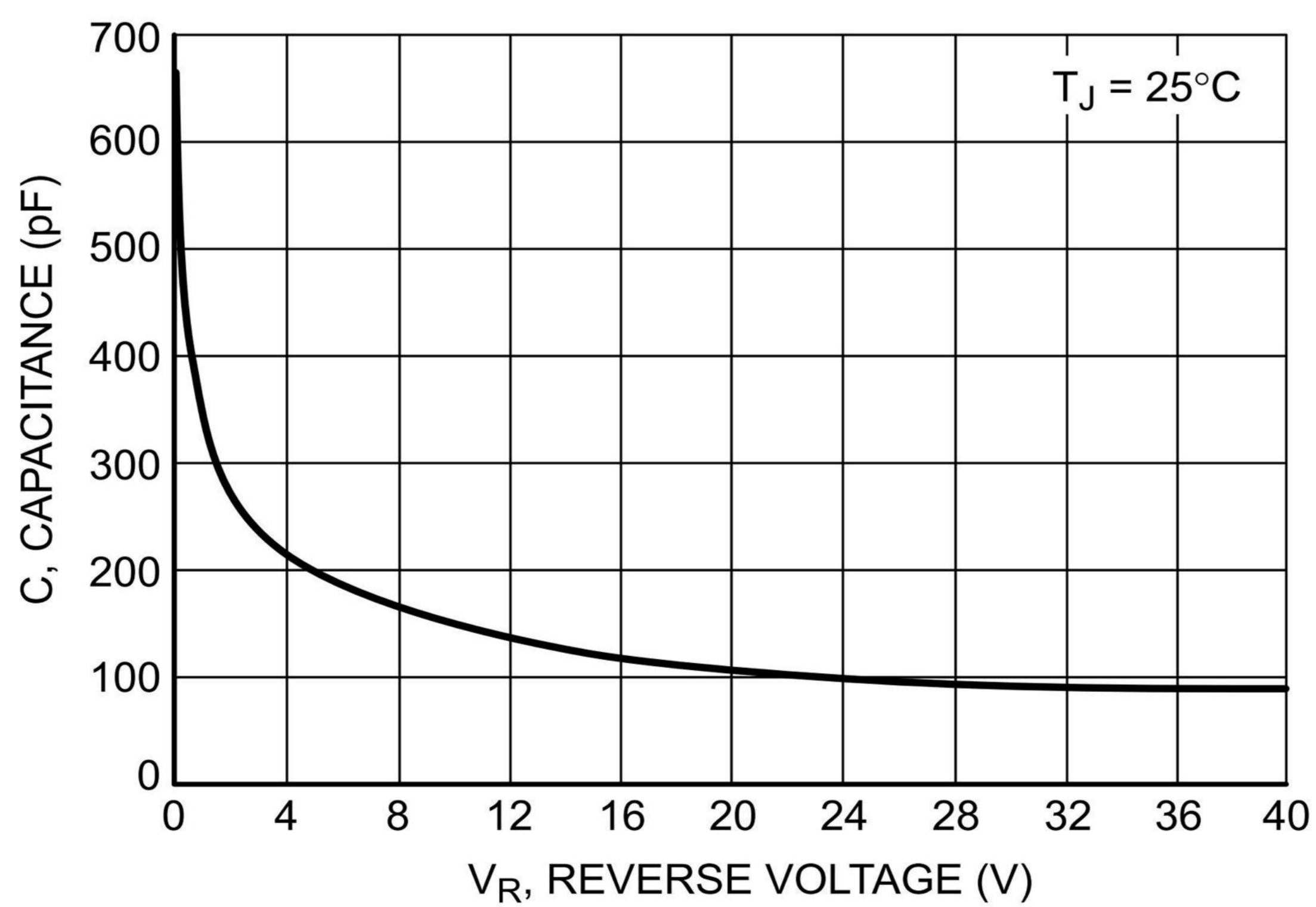


Figure 7. Typical Capacitance

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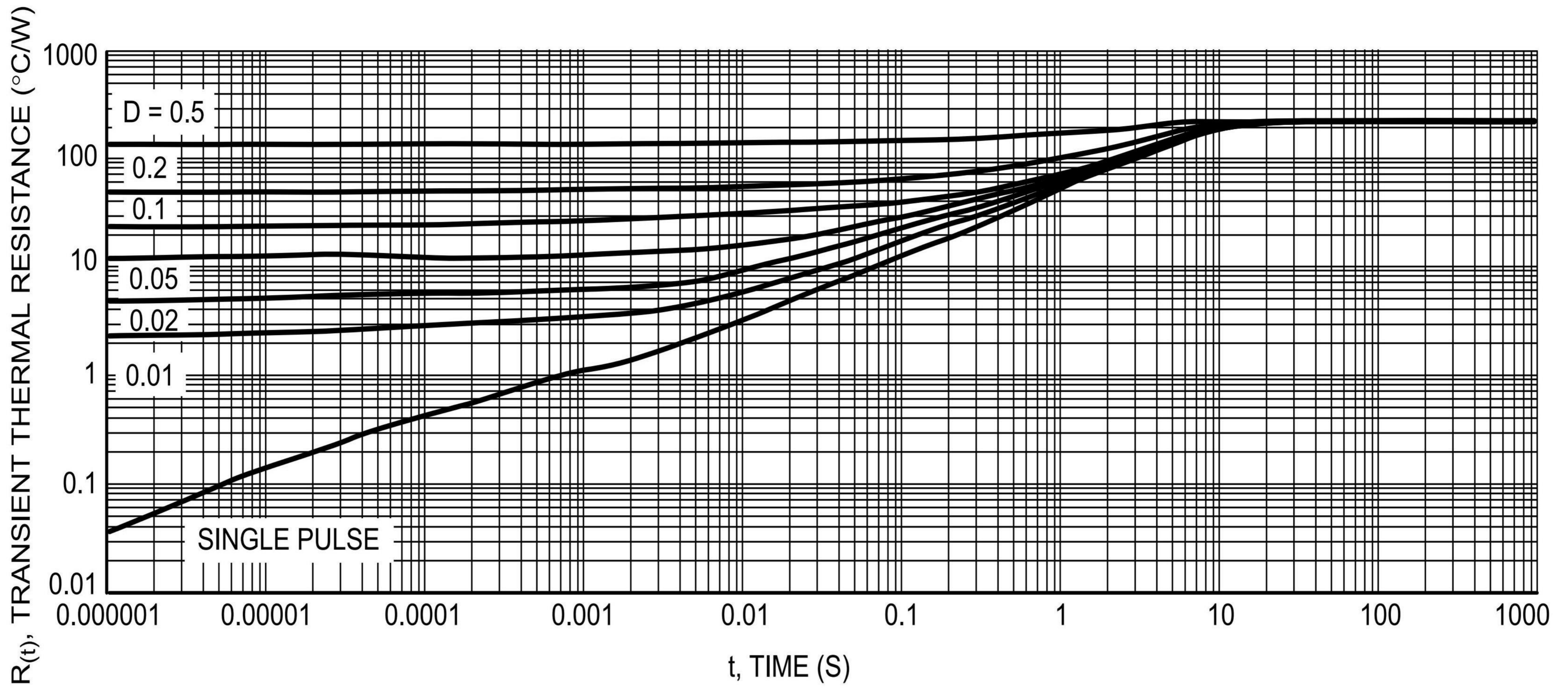


Figure 8. Thermal Response, Junction-to-Ambient (min pad)

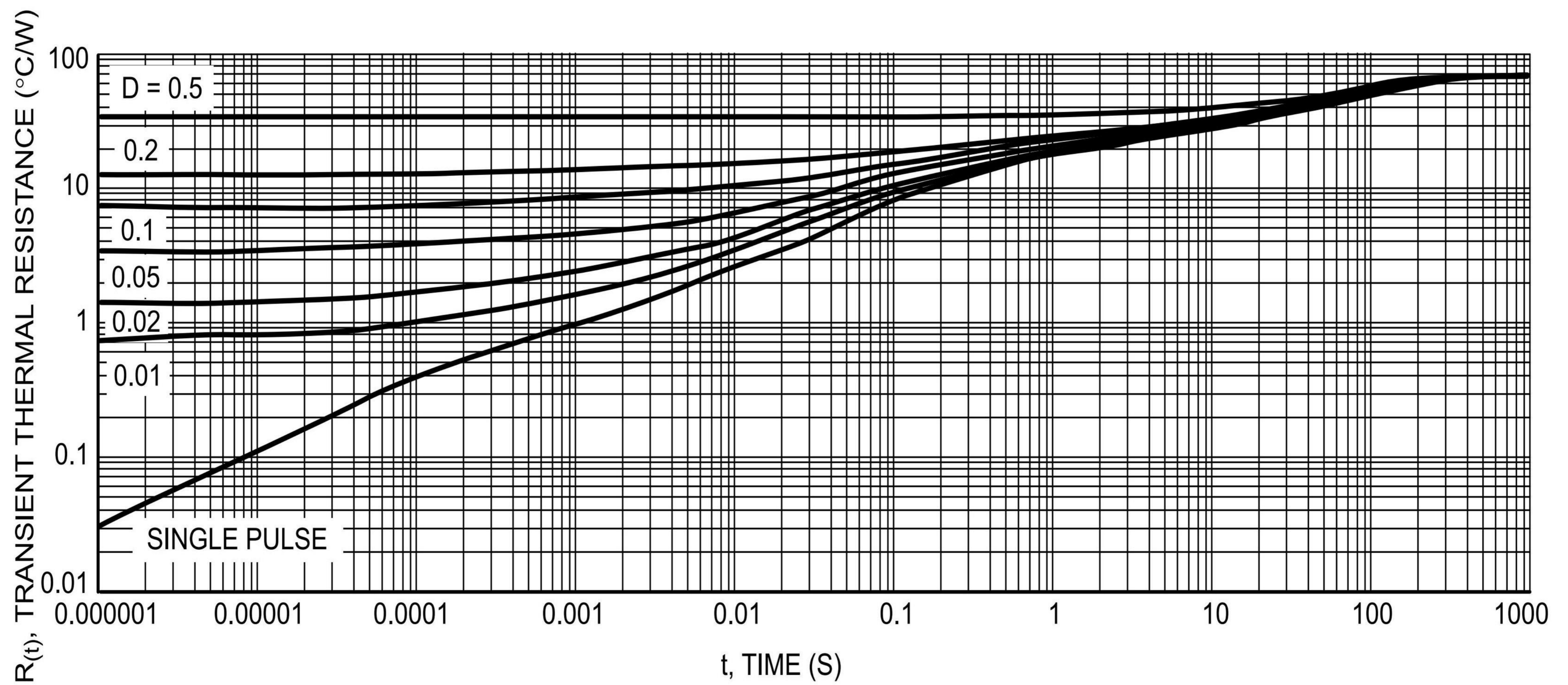


Figure 9. Thermal Response, Junction to Ambient (1 inch pad)

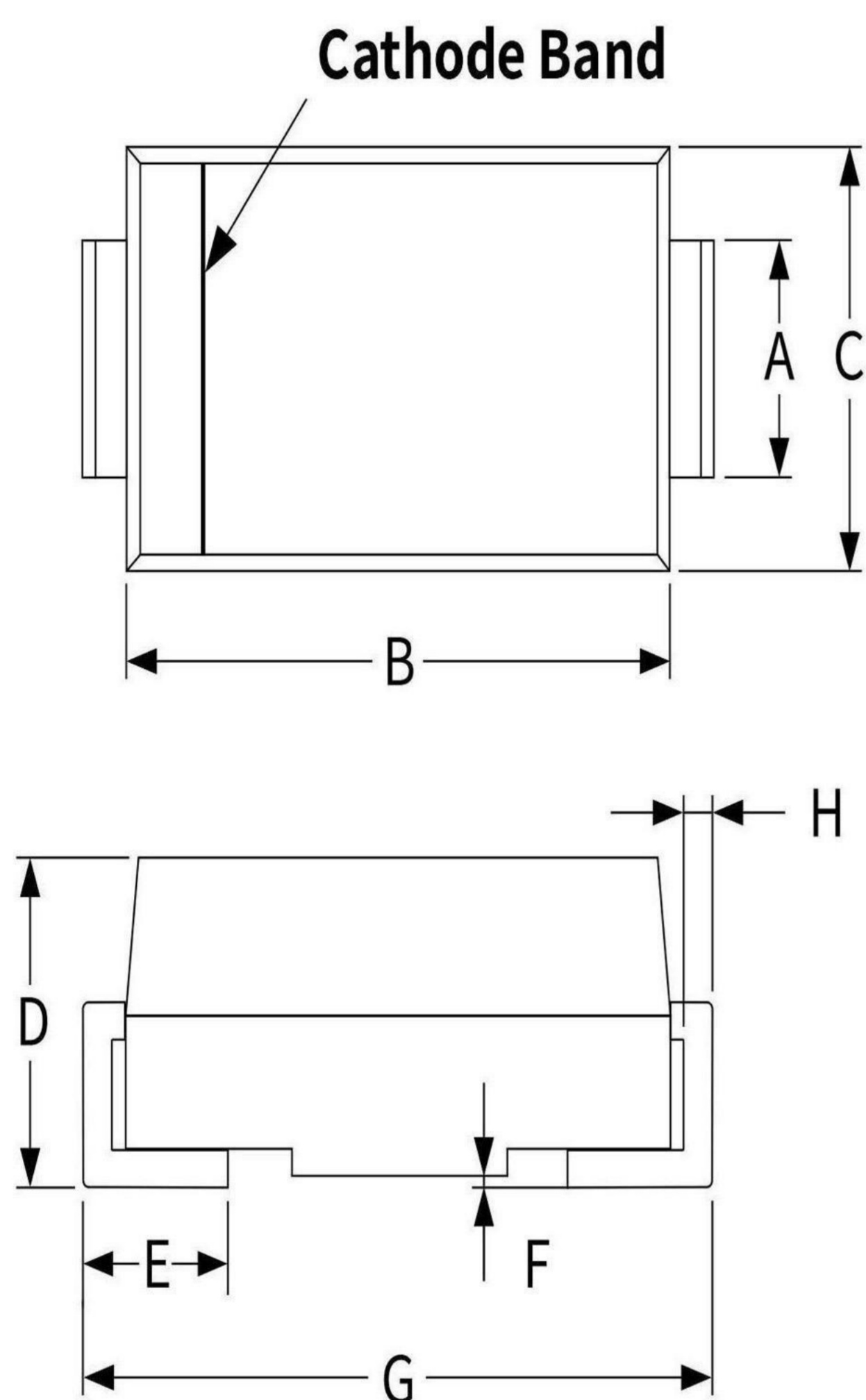
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Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SMA	R2	0.07	5000	10000	80000	13"

Package Outline Dimensions (SMA/DO-214AC)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.25	1.65	0.049	0.065
B	3.95	4.65	0.156	0.183
C	2.35	2.85	0.093	0.112
D	1.98	2.41	0.078	0.095
E	0.76	1.52	0.030	0.060
F	-	0.203	-	0.008
G	4.70	5.30	0.185	0.209
H	0.15	0.31	0.006	0.012



Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
M	1.70	-	0.067	-
J	2.10	-	0.082	-
K	-	2.30	-	0.090

