

# OM SENI

## MBRAF260T3G

## MBRAF2H100T3G

### 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

- Low Profile Package for Space Constrained Applications
- Rectangular Package for Automated Handling
- Highly Stable Oxide Passivated Junction
- 150°C Operating Junction Temperature
- Guard-Ring for Stress Protection
- These are Pb-Free and Halide-Free Devices

#### Mechanical Characteristics

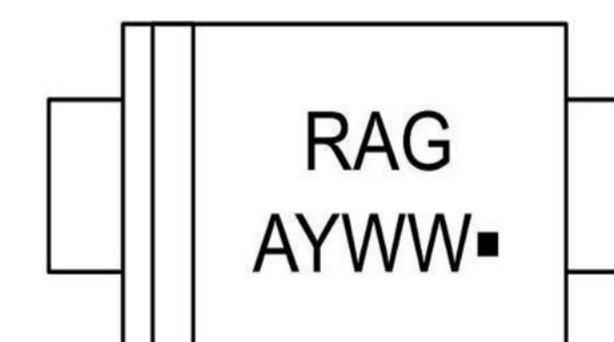
- Weight: 95 mg (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Cathode Polarity Band
- Device Meets MSL 1 Requirements
- ESD Ratings: Machine Model = C  
Human Body Model = 3B

### SCHOTTKY BARRIER RECTIFIER 2.0 AMPERE 60-100 VOLTS



SMA-FL  
CASE 403AA  
STYLE 6

#### MARKING DIAGRAM



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

#### ORDERING INFORMATION

Device	Package	Shipping†
MBRAF260T3G	SMA-FL (Pb-Free)	5000 / Tape & Reel
MBRAF2H100T3G	SMA-FL (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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## MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	60	V
Average Rectified Forward Current (At Rated $V_R$ , $T_L = 120^\circ\text{C}$ )	$I_O$	2.0	A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20 kHz) $T_L = 90^\circ\text{C}$	$I_{FRM}$	4.0	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	$I_{FSM}$	60	A
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$
Operating Junction Temperature	$T_J$	-55 to +150	$^\circ\text{C}$
Voltage Rate of Change (Rated $V_R$ , $T_J = 25^\circ\text{C}$ )	dv/dt	10,000	V/ $\mu\text{s}$
Controlled Avalanche Energy (see test conditions in Figures 6 and 7)	$W_{AVAL}$	10	mJ

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

## THERMAL CHARACTERISTICS

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

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

## ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value		Unit
Maximum Instantaneous Forward Voltage (Note 2)  ( $i_F = 1.0\text{ A}$ ) ( $i_F = 2.0\text{ A}$ )	$V_F$	$T_J = 25^\circ\text{C}$	$T_J = 125^\circ\text{C}$	V
		0.51 0.63	0.475 0.55	
Maximum Instantaneous Reverse Current (Note 2)  ( $V_R = 60\text{ V}$ )	$I_R$	$T_J = 25^\circ\text{C}$	$T_J = 125^\circ\text{C}$	mA
		0.2	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.

2. Pulse Test: Pulse Width  $\leq 250\ \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

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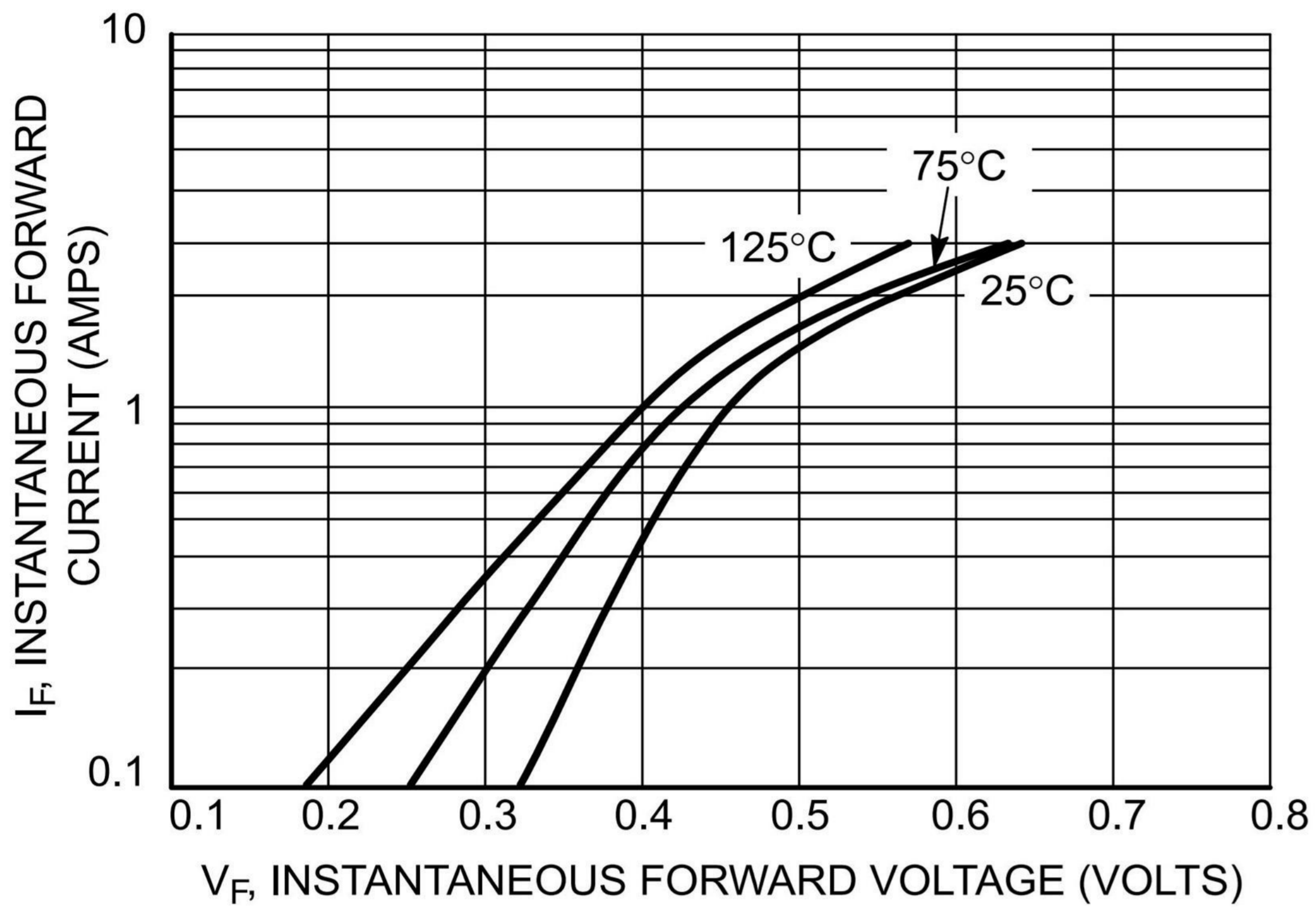


Figure 1. Typical Forward Voltage

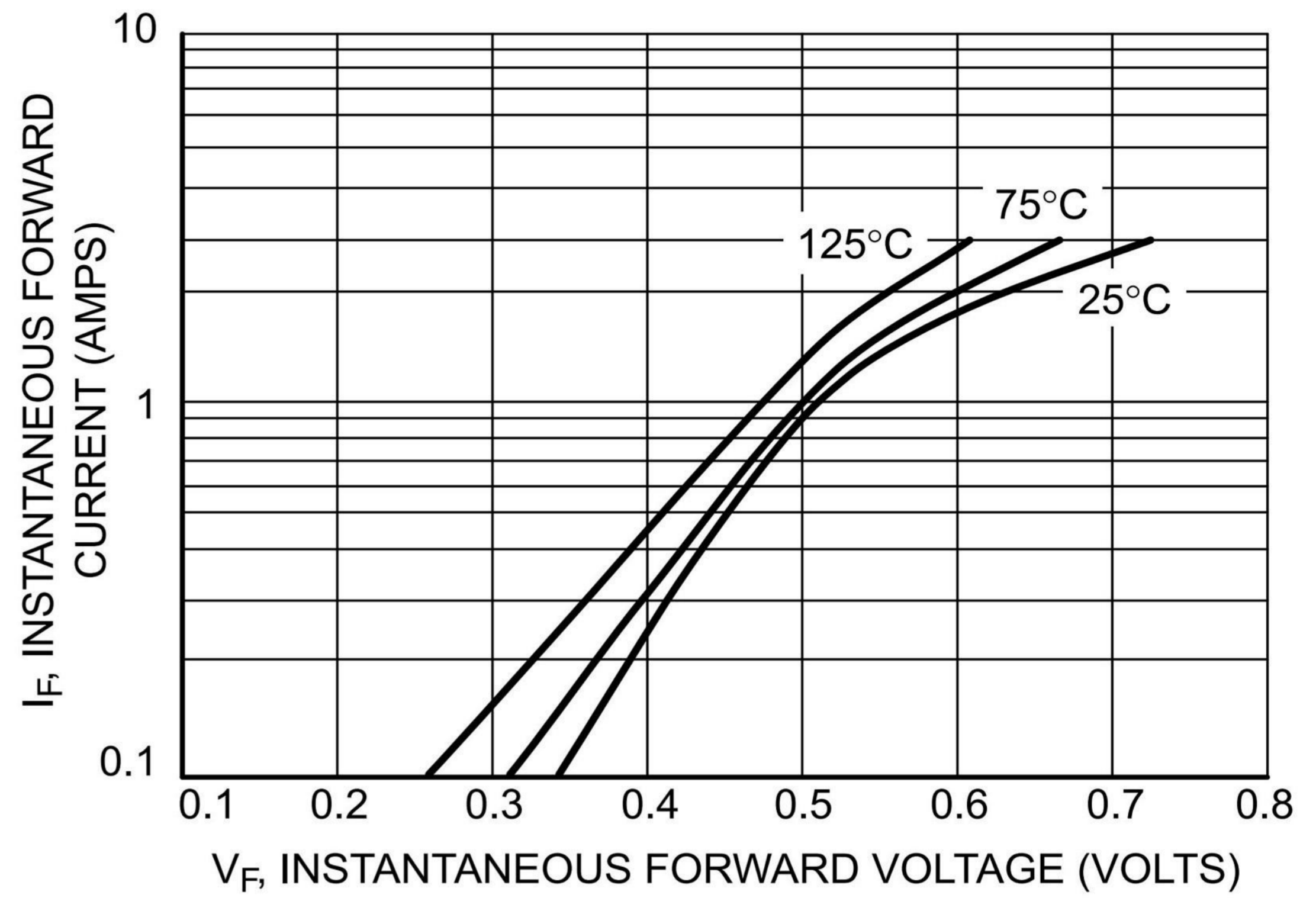


Figure 2. Maximum Forward Voltage

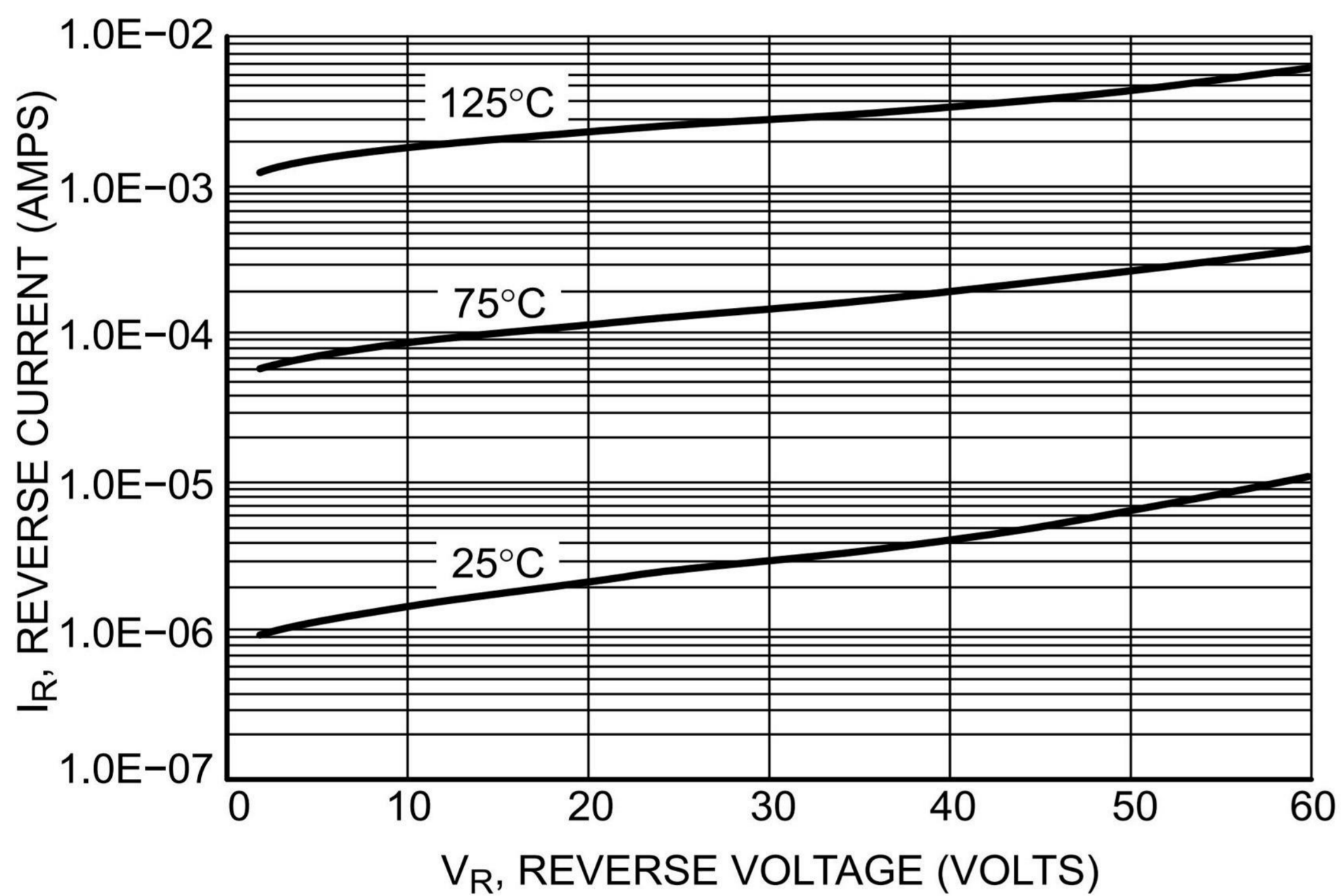


Figure 3. Typical Reverse Current

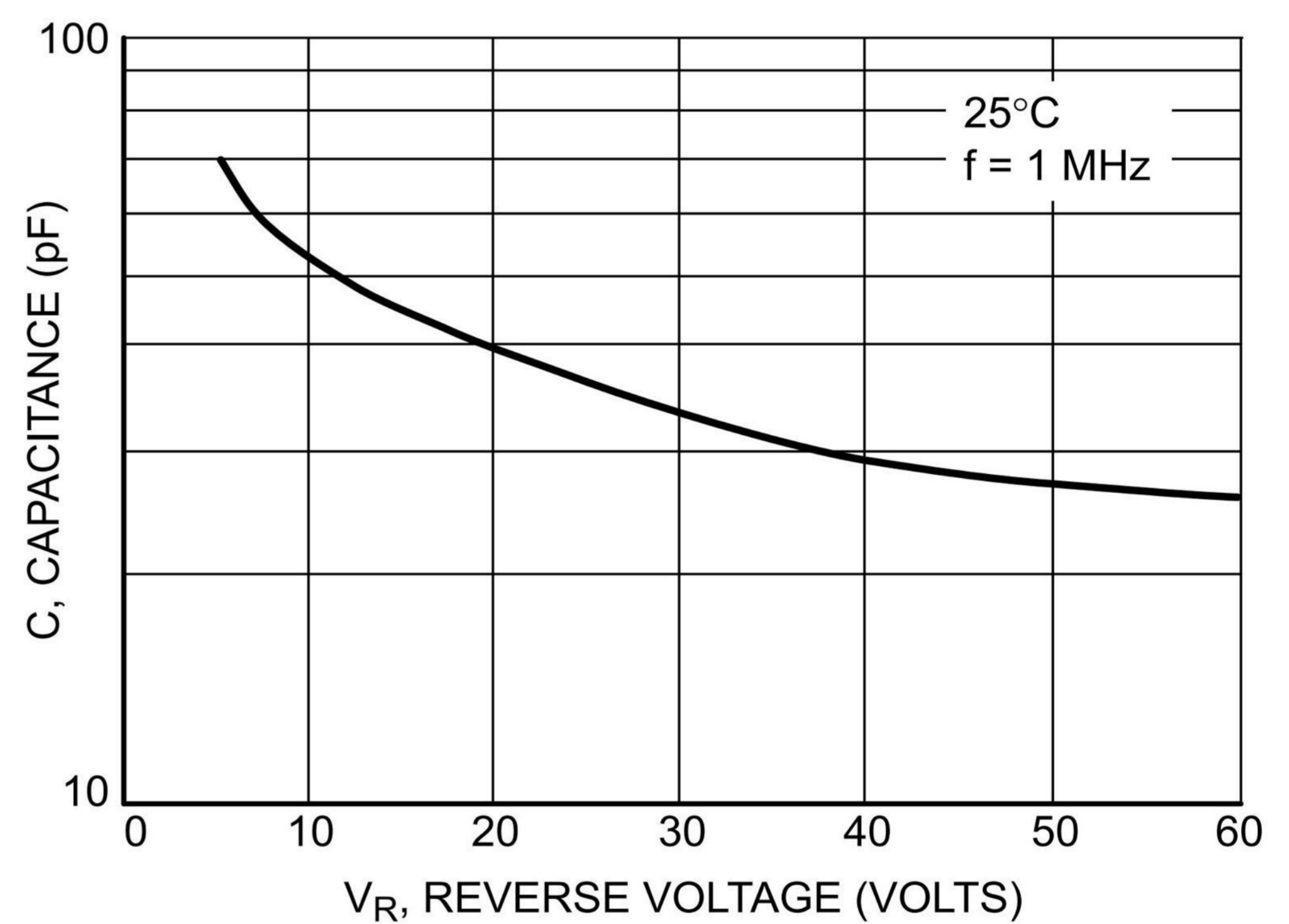


Figure 4. Typical Capacitance

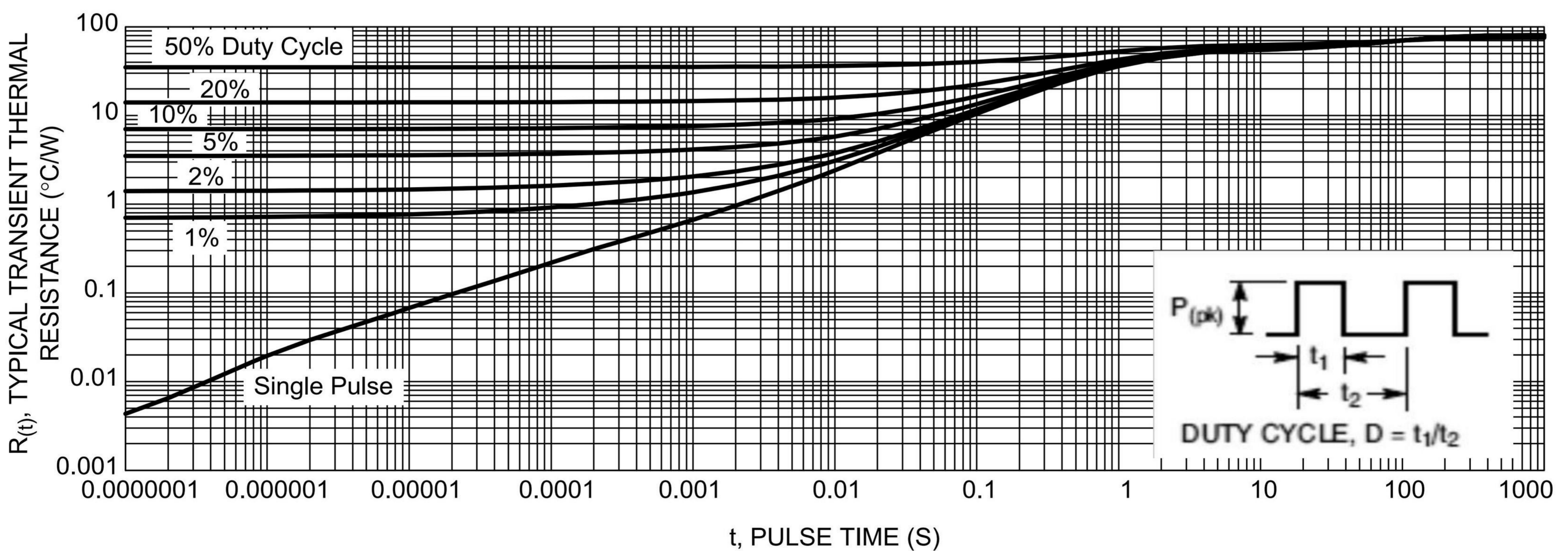


Figure 5. Typical Transient Thermal Response, Junction-to-Ambient

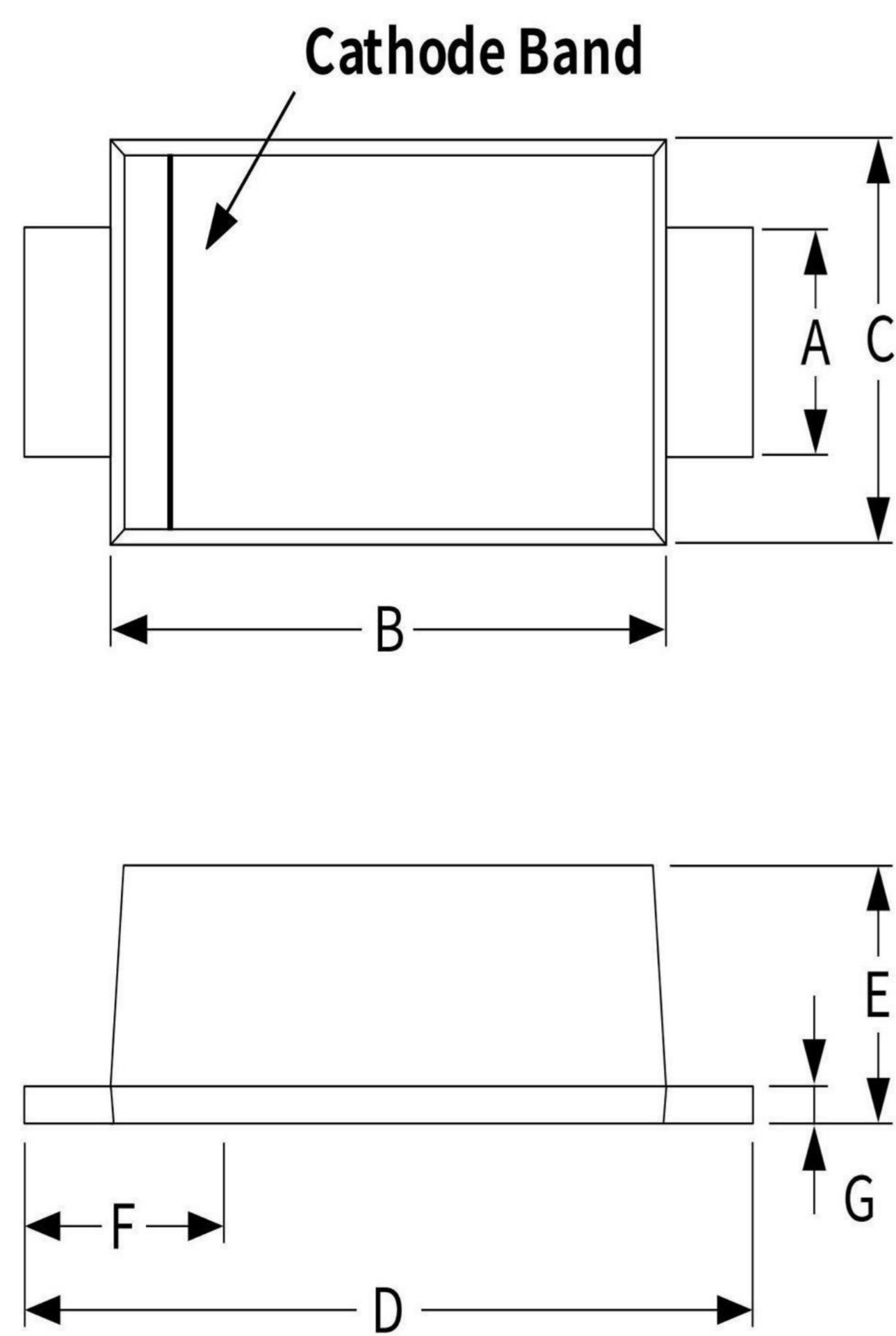
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## Ordering Information

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 Lavout

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

