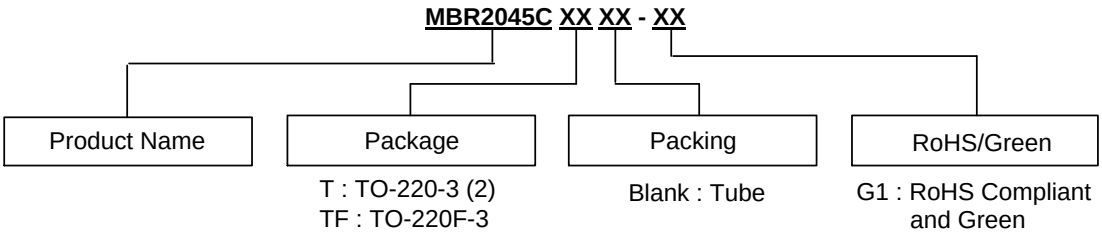
Ordering Information (Note 4)



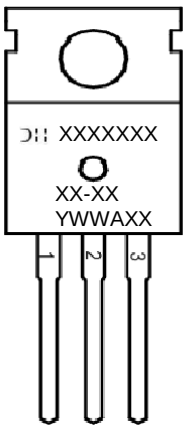
Package	Part Number	Marking ID	Packing
TO-220-3 (2)	MBR2045CT-G1	MBR2045CT-G1	50 Pieces/Tube
TO-220F-3	MBR2045CTF-G1	MBR2045CTF-G1	50 Pieces/Tube

Note: 4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information

(1) TO-220-3 (2)

(Front View)

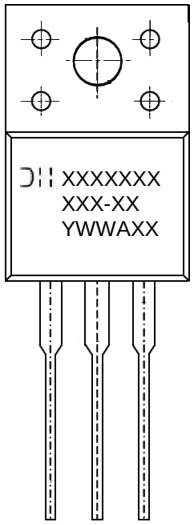


First and Second Lines: Logo and Marking ID
(See Ordering Information)
Third Line: Date Code
Y: Year
WW: Work Week of Molding
A: Assembly House Code
XX: 7th and 8th Digits of Batch Number

Marking Information (continued)

(2) TO-220F-3

(Front View)



First and Second Lines: Logo and Marking ID
(See Ordering Information)
Third Line: Date Code
Y: Year
WW: Work Week of Molding
A: Assembly House Code
XX: 7th and 8th Digits of Batch Number

Maximum Ratings (Each Diode Leg)

Characteristic	Symbol	Rating	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	45	V
Average Rectified Forward Current (Rated V_R) T_C = +139°C	$I_{F(AV)}$	10	A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20kHz) T_C = +137°C	I_{FRM}	20	A
Non Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Half Wave, Single Phase, 60Hz)	I_{FSM}	150	A
Peak Repetitive Reverse Surge Current (2.0µs,1.0kHz)	I_{RRM}	1.0	A
Operating Junction Temperature (Note 5)	T_J	+150	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C
Voltage Rate of Change (Rated V_R)	dv/dt	10000	V/µs
ESD (Machine Model = C)	—	>400	V
ESD (Human Body Model = 3B)	—	>8000	V

Note: 5. The heat generated must be less than the thermal conductivity from Junction to Ambient: $dP_D/dT_J < 1/\theta_{JA}$.

Thermal Characteristics

Characteristic	Symbol	Rating		Unit
Maximum Thermal Resistance (Junction to Case) (Note 6)	$R_{\theta JC}$	TO-220-3 (2)	2.2	°C/W
		TO-220F-3	4.5	
Maximum Thermal Resistance (Junction to Ambient) (Note 6)	$R_{\theta JA}$	TO-220-3 (2)	60	
		TO-220F-3	60	

Note: 6. Device mounted on heat sink, with minimum recommended pad layout per http://www.diodes.com/package-outlines.html.

Electrical Characteristics (Each Diode Leg)

Characteristic	Symbol	Typ	Max	Rating	Test Condition
Maximum Instantaneous Forward Voltage Drop (Note 7)	V_F	0.59	0.65	V	I_F = 10A, T_C = +25°C
		0.50	0.57		I_F = 10A, T_C = +125°C
Maximum Instantaneous Reverse Current (Note 7)	I_R	5	15	mA	Rated DC Voltage, T_C = +125°C
		0.01	0.1		Rated DC Voltage, T_C = +25°C

Note: 7. Short duration pulse test used to minimize self-heating effect, Pulse Test Width = 300µs, Duty Cycle < 2.0%.

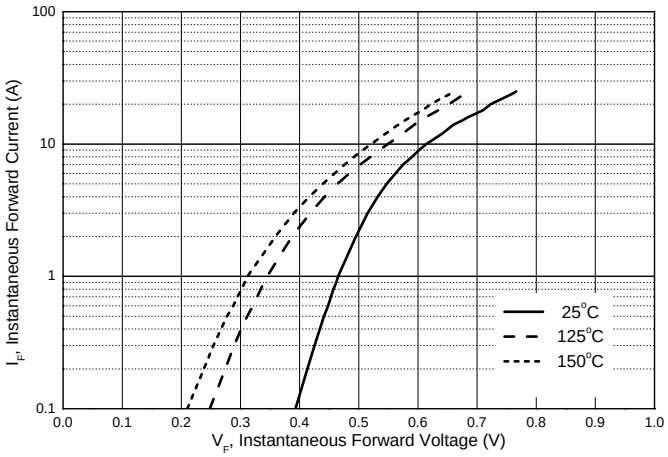


Figure 1. Typical Forward Voltage

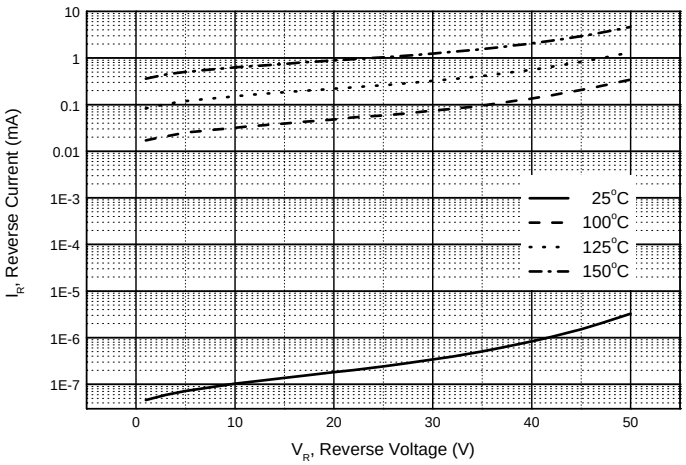


Figure 2. Typical Reverse Current

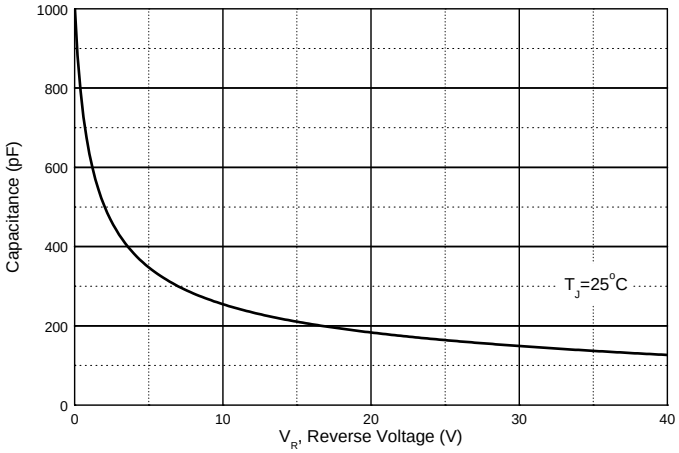


Figure 3. Capacitance vs. V_R, Reverse Voltage

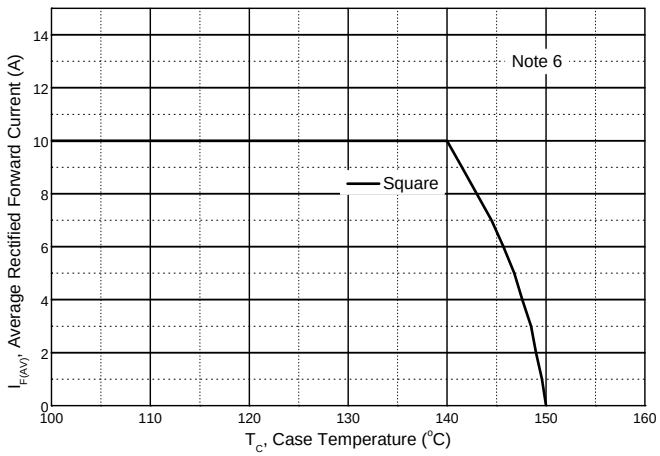
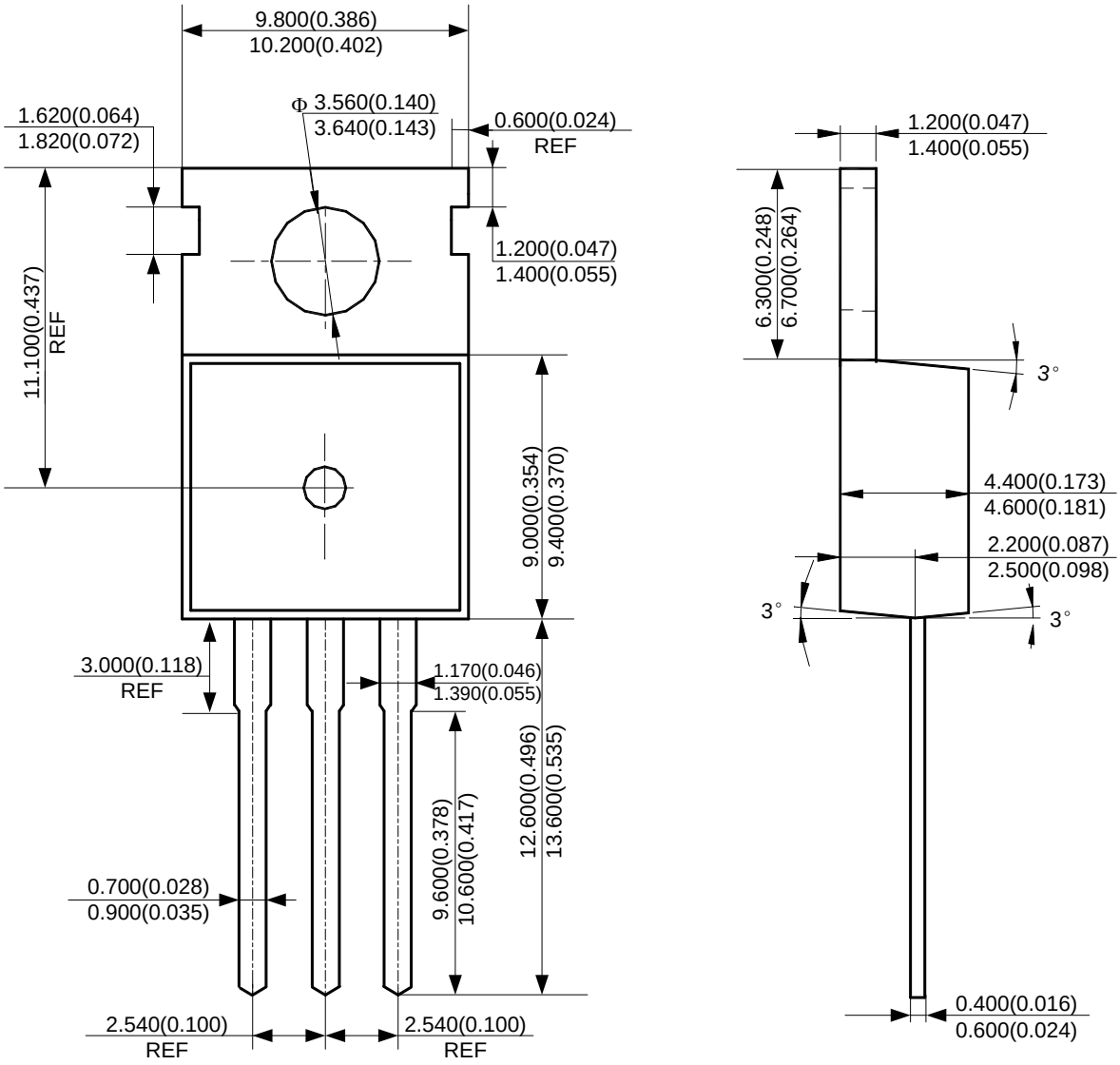


Figure 4. Average Rectified Forward Current vs. Case Temperature (Square, Each Diode)

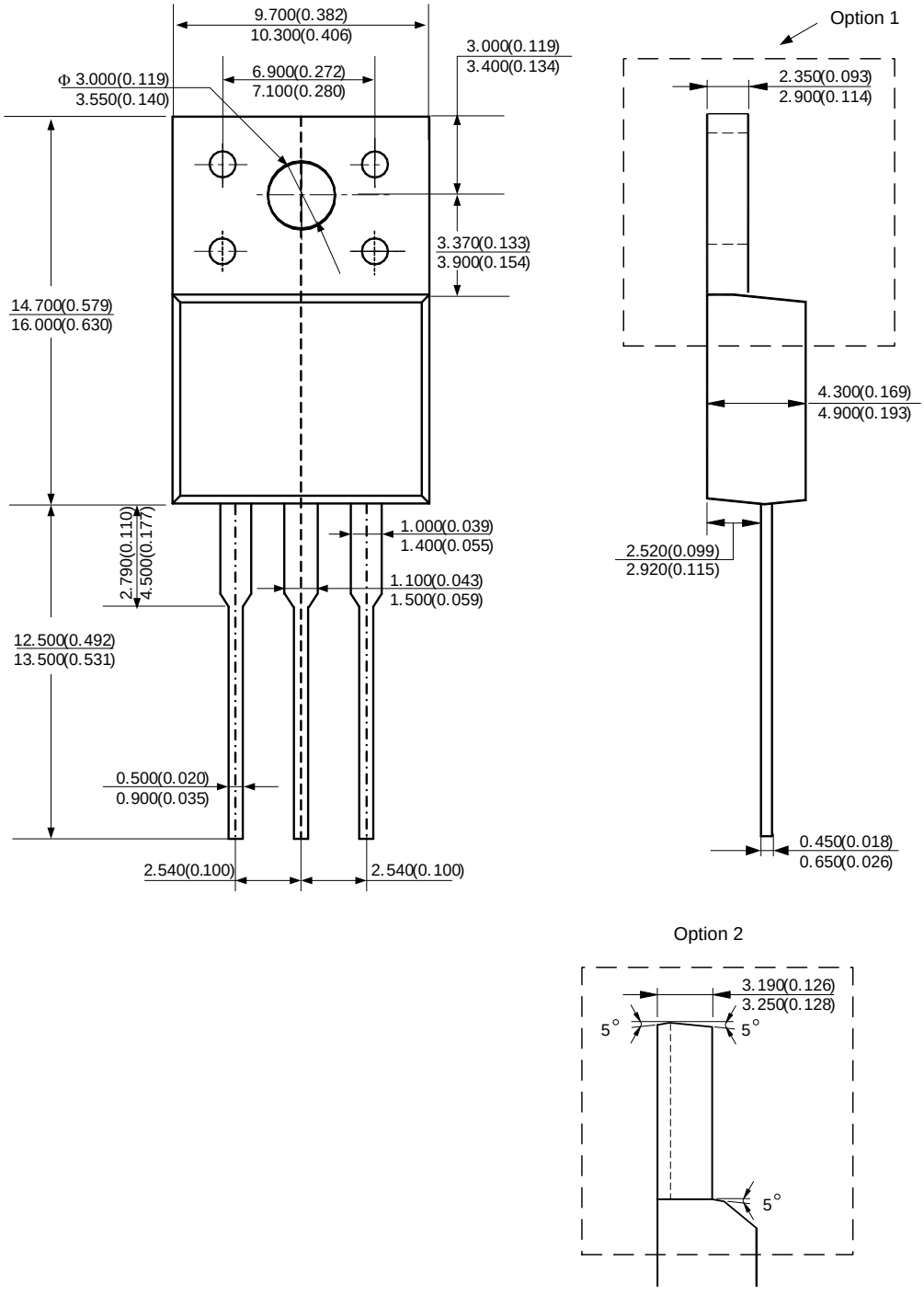
Package Outline Dimensions (All dimensions in mm(inch).)

(1) Package Type: TO-220-3 (2)



Package Outline Dimensions (continued) (All dimensions in mm(inch).)

(2) Package Type: TO-220F-3



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