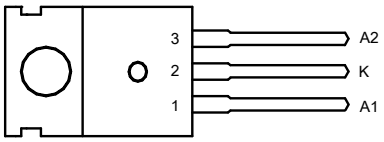
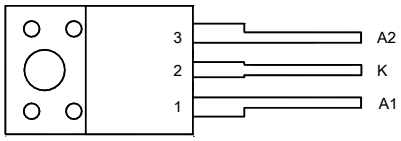
Pin Assignments

(Front View)



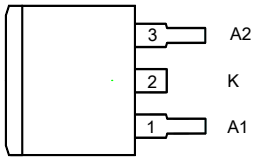
TO-220-3 (2)

(Front View)



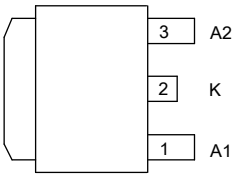
TO-220F-3 (Option 1)

(Top View)

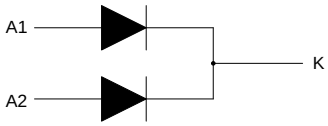


TO-263-2

(Top View)

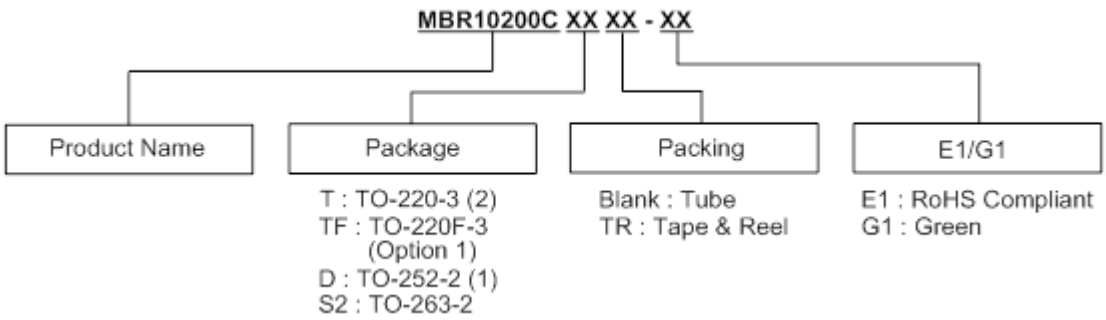


TO-252-2 (1)



Internal Structure of MBR10200C

Ordering Information (Note 4)



	Package	Part Number	Marking ID	Packing
Pb	TO-220-3 (2)	MBR10200CT-E1	MBR10200CT-E1	50 Pieces/Tube
Pb Green	TO-220-3 (2)	MBR10200CT-G1	MBR10200CT-G1	50 Pieces/Tube
Pb	TO-220F-3 (Option 1)	MBR10200CTF-E1	MBR10200CTF-E1	50 Pieces/Tube
Pb Green	TO-220F-3 (Option 1)	MBR10200CTF-G1	MBR10200CTF-G1	50 Pieces/Tube
Pb	TO-263-2	MBR10200CS2-E1	MBR10200CS2-E1	50 Pieces/Tube
Pb Green	TO-263-2	MBR10200CS2-G1	MBR10200CS2-G1	50 Pieces/Tube
Pb	TO-263-2	MBR10200CS2TR-E1	MBR10200CS2-E1	800 Pieces/Tape & Reel
Pb Green	TO-263-2	MBR10200CS2TR-G1	MBR10200CS2-G1	800 Pieces/Tape & Reel

Ordering Information (Cont. Note 4)

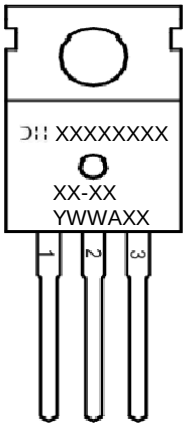
Package	Part Number	Marking ID	Packing
TO-252-2 (1)	MBR10200CD-E1	MBR10200CD-E1	80 Pieces/Tube
TO-252-2 (1)	MBR10200CD-G1	MBR10200CD-G1	80 Pieces/Tube
TO-252-2 (1)	MBR10200CDTR-E1	MBR10200CD-E1	2500 Pieces/Tape & Reel
TO-252-2 (1)	MBR10200CDTR-G1	MBR10200CD-G1	2500 Pieces/Tape & Reel

Note 4: Diodes IC's Pb-free products, as designated with "E1" suffix in the part number, are RoHS compliant. Products with "G1" suffix are available in green packages.

Marking Information

(1) TO-220-3 (2)

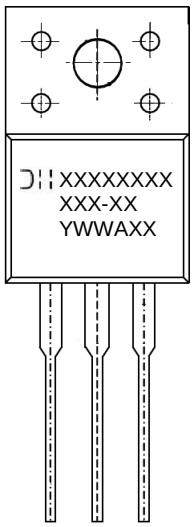
(Front View)



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

(2) TO-220F-3 (Option 1)

(Front View)

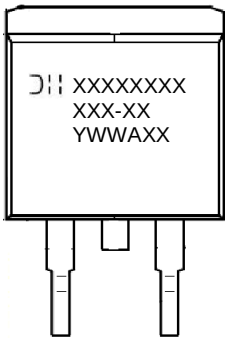


First and Second Lines: Logo and Marking ID
(See Ordering Information)
Third Line: Date Code
Y: Year
WW: Work Week of Molding
A: Assembly House Code
XX: 7th and 8th Digits of Batch Number

Marking Information (Cont.)

(3) TO-263-2

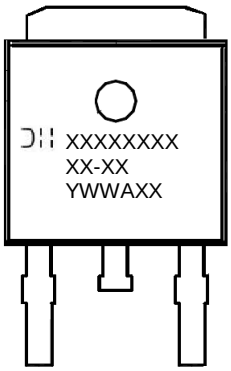
(Top View)



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

(4) TO-252-2 (1)

(Top 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) (Note 5)

Characteristic	Symbol	Rating	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	200	V
Average Rectified Forward Current (Rated V_R) T_C = +140°C	$I_{F(AV)}$	5	A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20kHz) T_C = +138°C	I_{FRM}	10	A
Non Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Half Wave, Single Phase, 60Hz)	I_{FSM}	100	A
Operating Junction Temperature (Note 6)	T_J	+150	°C
Storage Temperature Range	T_{STG}	-50 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

Notes: 5. Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "Recommended Operating Conditions" is not implied. Exposure to "Absolute Maximum Ratings" for extended periods may affect device reliability.

6. 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 7)	$R_{\theta JC}$	TO-220-3 (2)	3.0	°C/W
		TO-220F-3 (Option 1)	4.5	
		TO-252-2 (1)	2.0	
		TO-263-2	2.0	
Maximum Thermal Resistance (Junction to Ambient) (Note 7)	$R_{\theta JA}$	TO-220-3 (2)	60	°C/W
		TO-220F-3 (Option 1)	60	
		TO-252-2 (1)	50	
		TO-263-2	50	

Note 7: Device mounted on heat sink, with minimum recommended pad layout per http://www.diodes.com.

Electrical Characteristics (Each Diode Leg)

Characteristic	Symbol	Rating	Unit	Test Condition
Maximum Instantaneous Forward Voltage Drop (Note 8)	V_F	0.95	V	I_F = 5A, T_C = +25°C
		0.85		I_F = 5A, T_C = +125°C
Maximum Instantaneous Reverse Current (Note 8)	I_R	0.15	mA	Rated DC Voltage, T_C = +25°C
		15		Rated DC Voltage, T_C = +125°C

Note 8: Short duration pulse test used to minimize self-heating effect, Pulse Test Width = 300µs, Duty Cycle < 2.0%.

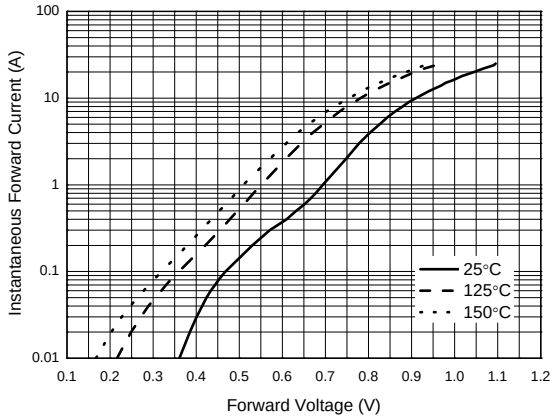


Figure 1. Typical Forward Voltage Per Diode

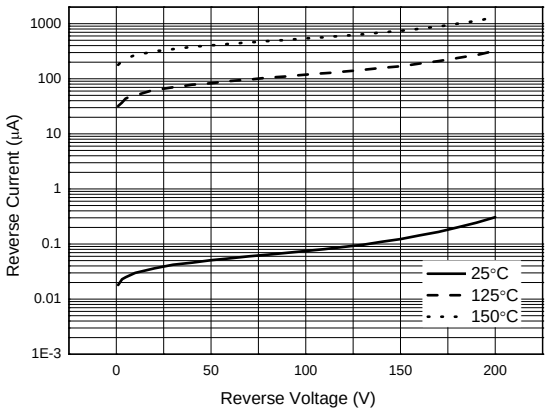


Figure 2. Typical Reverse Current Per Diode

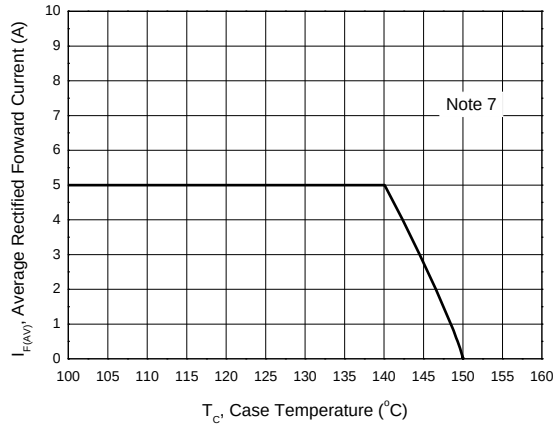
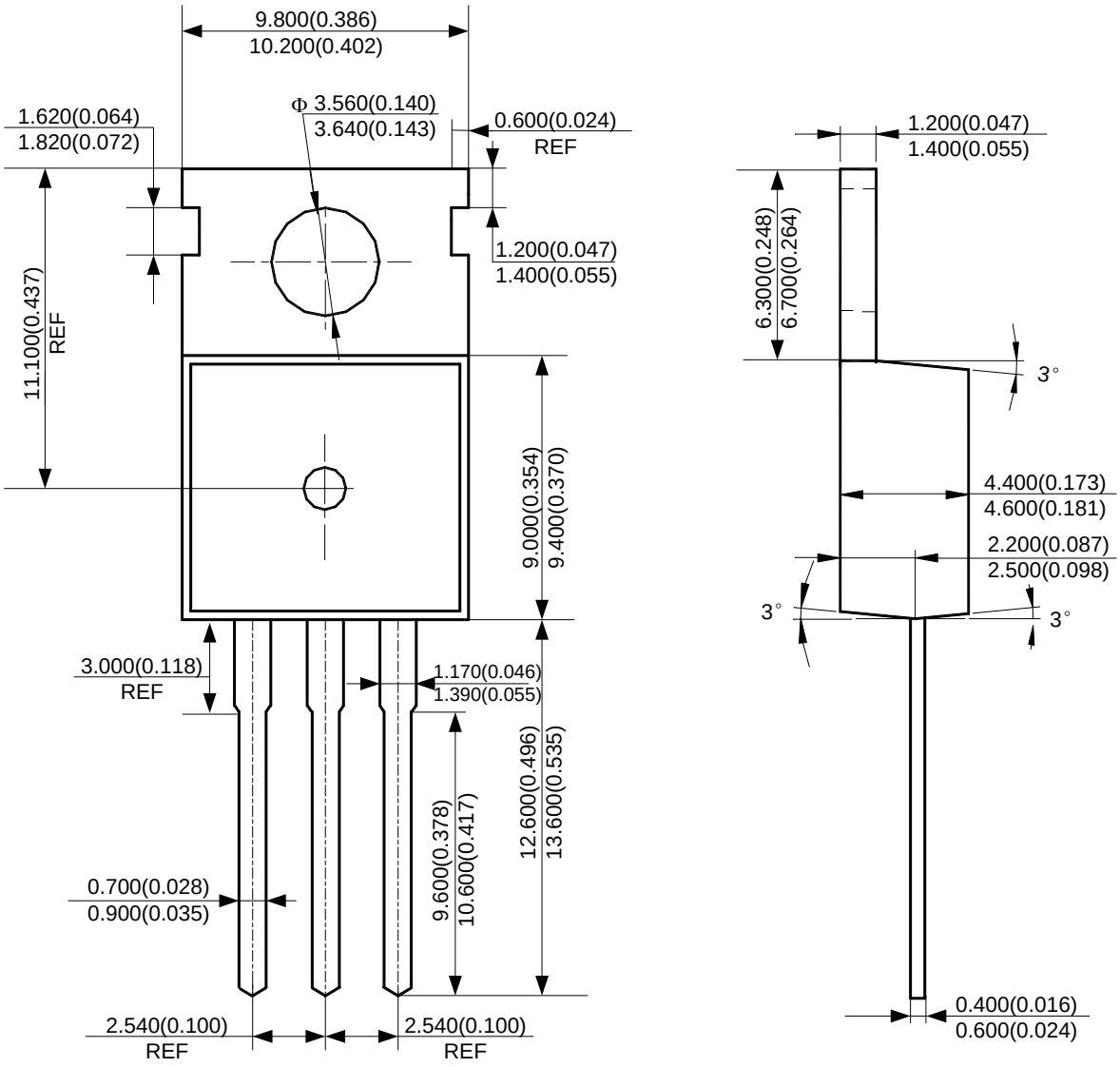


Figure 3. Average Rectified Forward Current vs. Case Temperature (Per Diode)

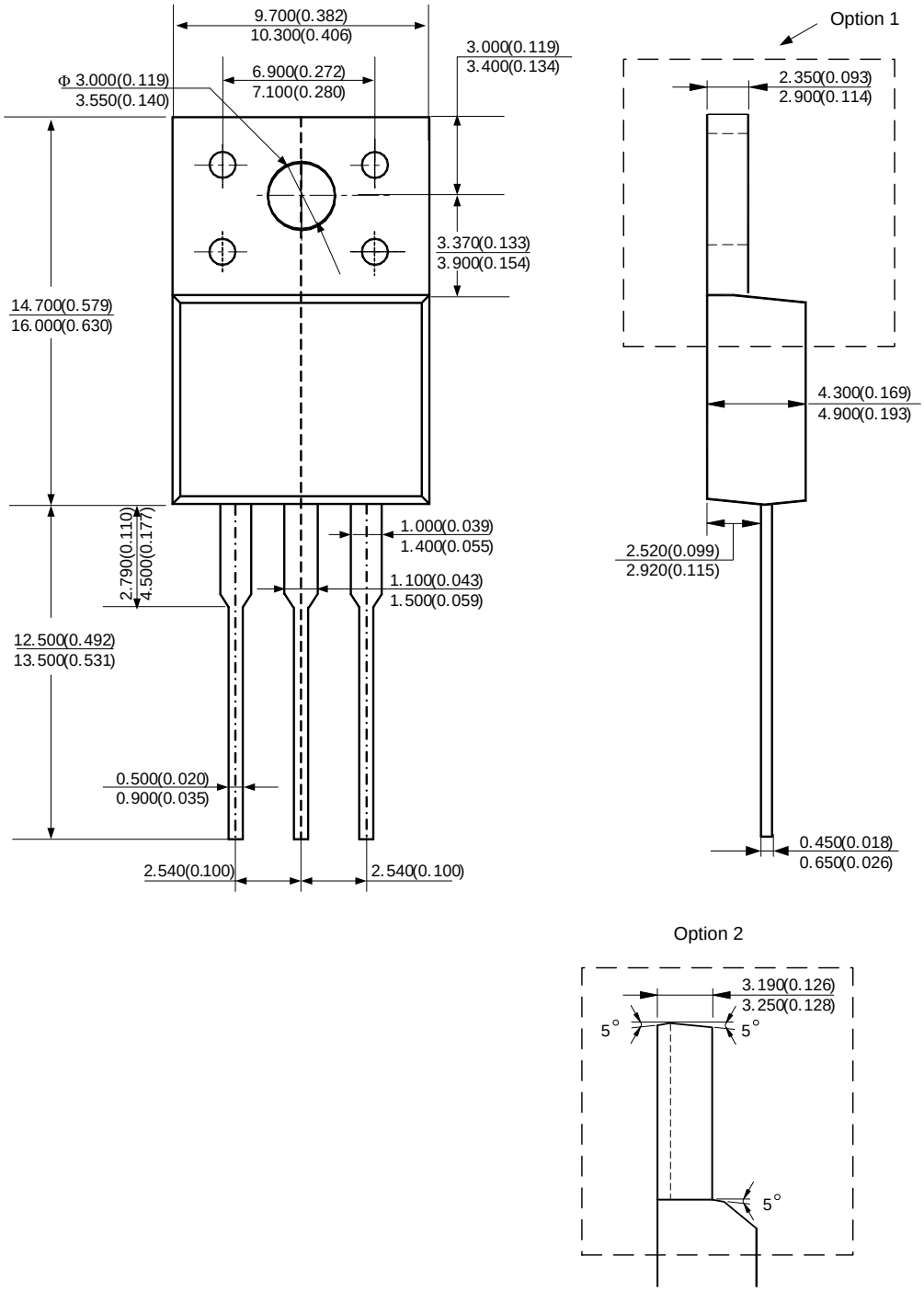
Package Outline Dimensions (All dimensions in mm(inch).)

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



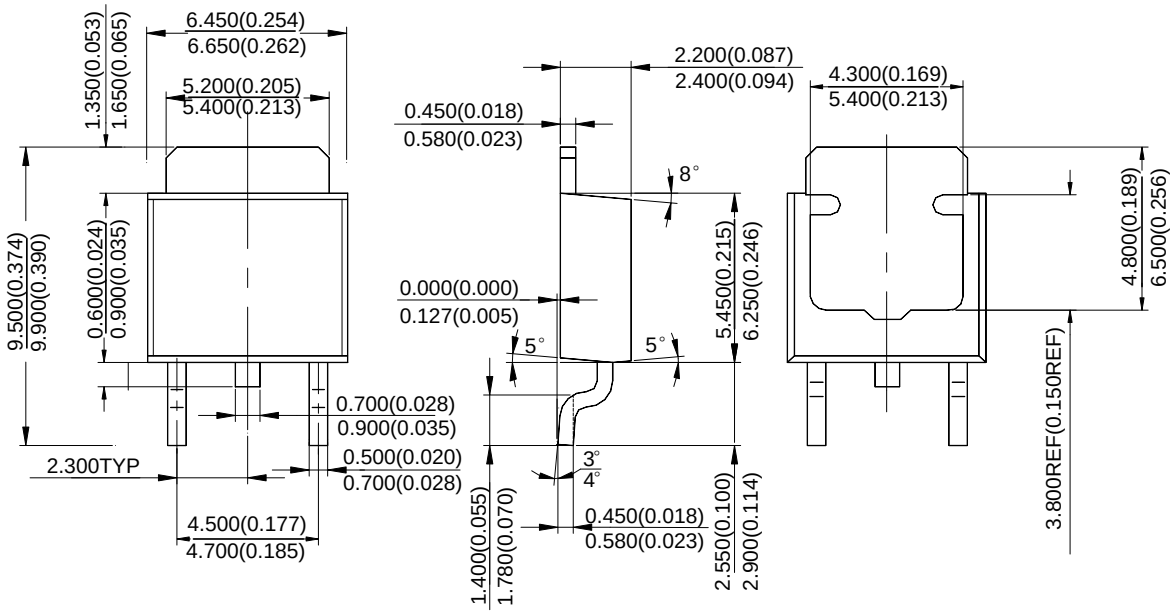
Package Outline Dimensions (Cont. All dimensions in mm(inch).)

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



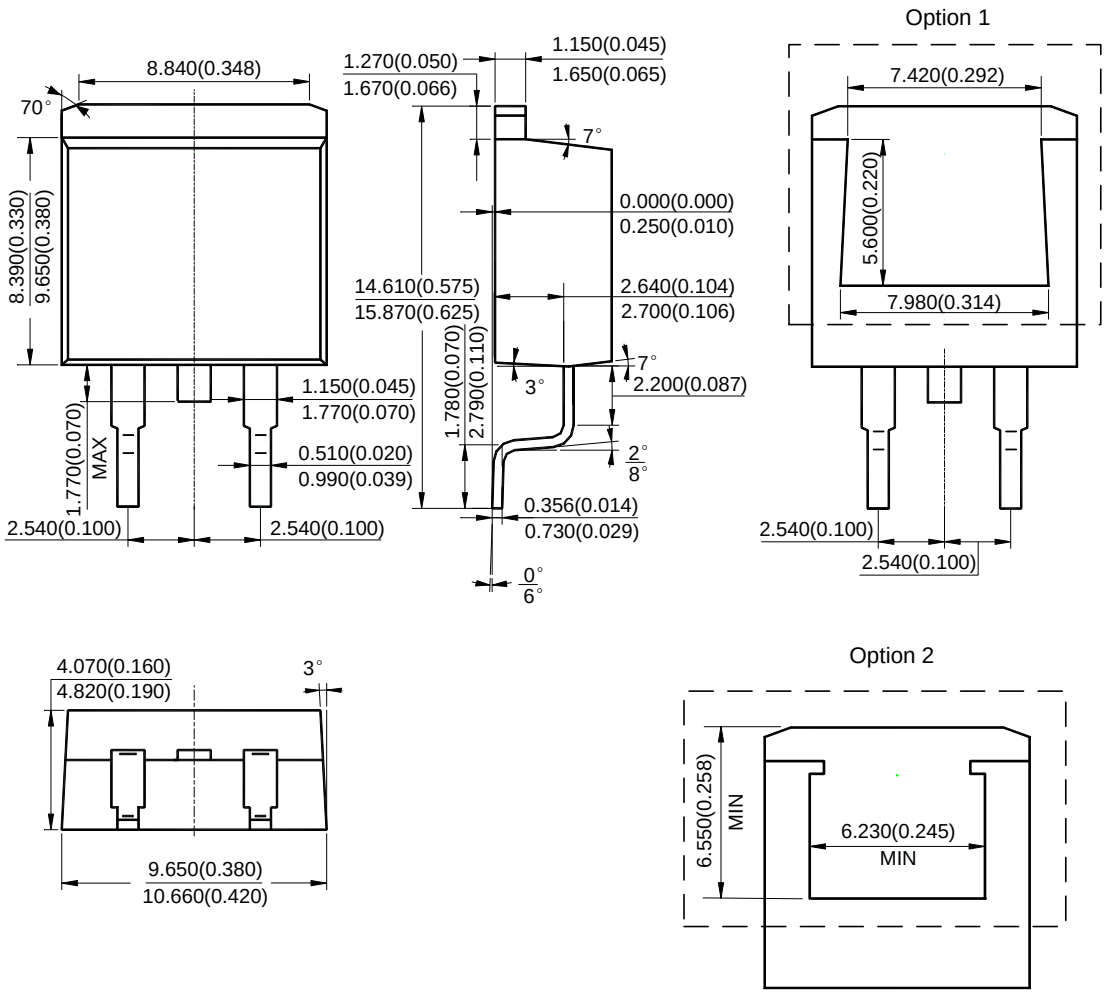
Package Outline Dimensions (Cont. All dimensions in mm(inch).)

(3) Package Type: TO-252-2 (1)



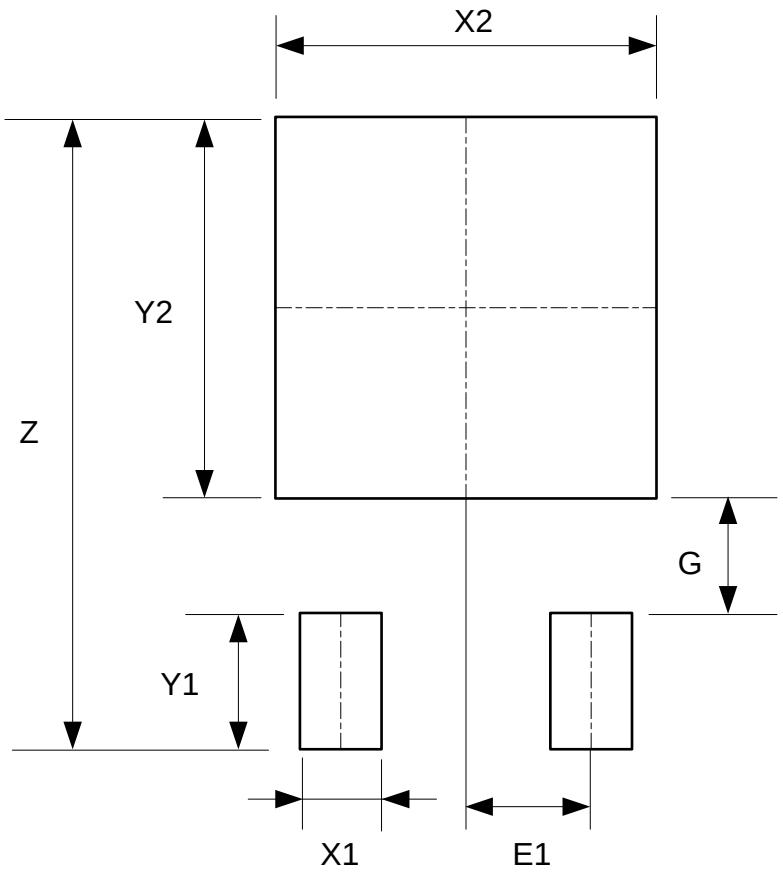
Package Outline Dimensions (Cont. All dimensions in mm(inch).)

(4) Package Type: TO-263-2



Suggested Pad Layout

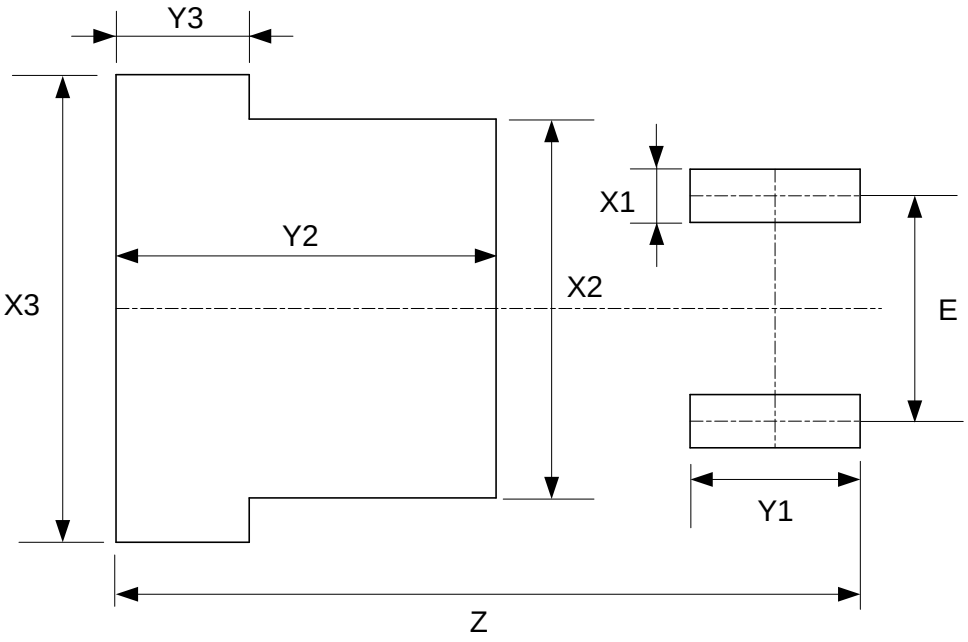
(1) Package Type: TO-252-2 (1)



Dimensions	Z (mm)/(inch)	X1 (mm)/(inch)	X2=Y2 (mm)/(inch)	Y1 (mm)/(inch)	G (mm)/(inch)	E1 (mm)/(inch)
Value	11.600/0.457	1.500/0.059	7.000/0.276	2.500/0.098	2.100/0.083	2.300/0.091

Suggested Pad Layout (Cont.)

(2) Package Type: TO-263-2



Dimensions	Z (mm)/(inch)	X1 (mm)/(inch)	X2 (mm)/(inch)	X3 (mm)/(inch)
Value	16.760/0.660	1.200/0.047	8.540/0.336	10.540/0.415
Dimensions	Y1 (mm)/(inch)	Y2 (mm)/(inch)	Y3 (mm)/(inch)	E (mm)/(inch)
Value	3.830/0.151	8.560/0.337	3.000/0.118	5.080/0.200

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