TAIWAN SEMICONDUCTOR

The Smartest Choice

MBRS4060CT

40.0 AMPS. Surface Mount Schottky Barrier Rectifiers

D²PAK



AEC-Q101 Qualified

Pb-Free

RoHS COMPLIANT

Features

- For surface mounted application
- Plastic material used carriers Underwriters Laboratory Classigication 94V-0
- Metal to silicon junction, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- High surge current capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Guarding for overvoltage protection
- High temperature soldering guaranteed: 260℃/10s at terminals
- Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- Case: JEDEC D²PAK Molded plastic
- Terminal: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- Polarity: As marked
- Mounting position: Any
- Weight: 1.53 gram

Ordering Information

Part No.	Package	Packing	Packing code	Packing code (Green)
MBRS4060CT	D2PAK	800 / 13" REEL	RN	RNG

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ ambient temperature unless otherwise specified.

Parameter	Symbol	MBRS4060CT	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	60	V
Maximum RMS Voltage	V_{RMS}	42	V
Maximum DC Blocking Voltage	V_{DC}	60	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	40	A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	300	A
Maximum Instantaneous Forward Voltage (Note 1) IF=20A @ 25℃ IF=20A @ 125℃ IF=40A @ 25℃ IF=40A @ 125℃	V_F	 0.8 0.7 1.0 0.9	V
Maximum Instantaneous Reverse Current T_A=25 ℃ at Rated DC Blocking Voltage Per Leg T_A=125 ℃	I_R	0.1 20	mA
Voltage Rate of Change (Rated V_R)	dV/dt	10000	V/uS
Typical Thermal Resistance	$R_{\theta jC}$	1.5	^{O}C/W
Operating Junction Temperature Range - In Forward Mode	T_J	- 55 to + 175	^{O}C
Storage Temperature Range	T_{STG}	- 55 to + 175	^{O}C

Note 1: Pulse Test: 300us Pulse Width, 1% Duty Cycle

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RATINGS AND CHARACTERISTIC CURVES (MBRS4060CT)

FIG.1 FORWARD CURRENT DERATING CURVE

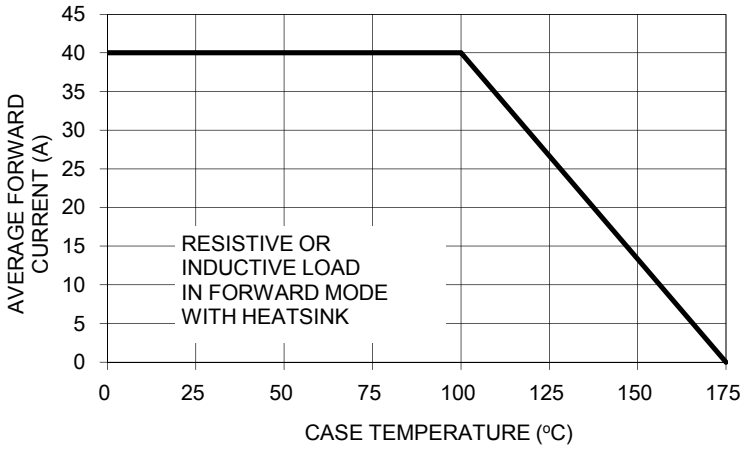


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

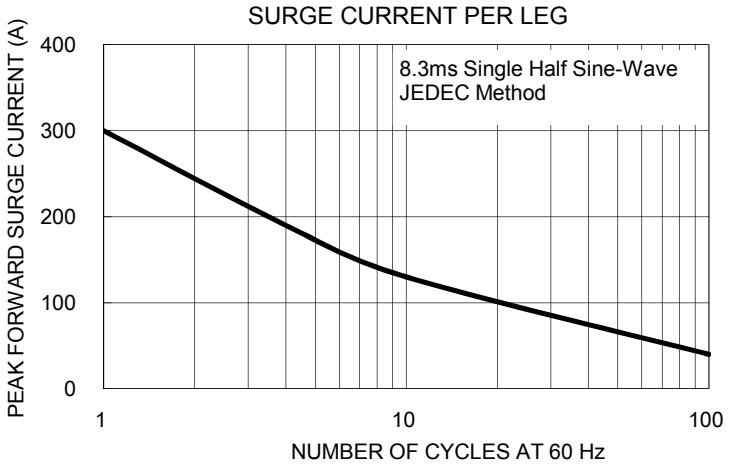


FIG. 3 TYPICAL FORWARD CHARACTERSTICS PER LEG

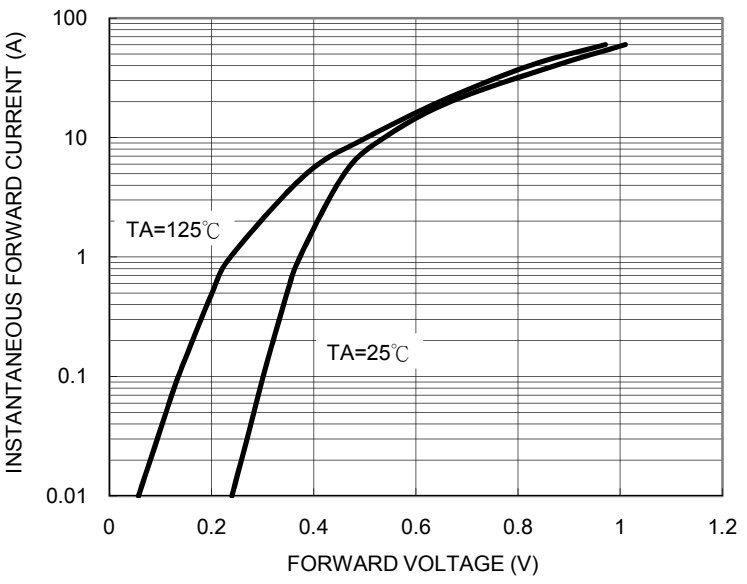


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

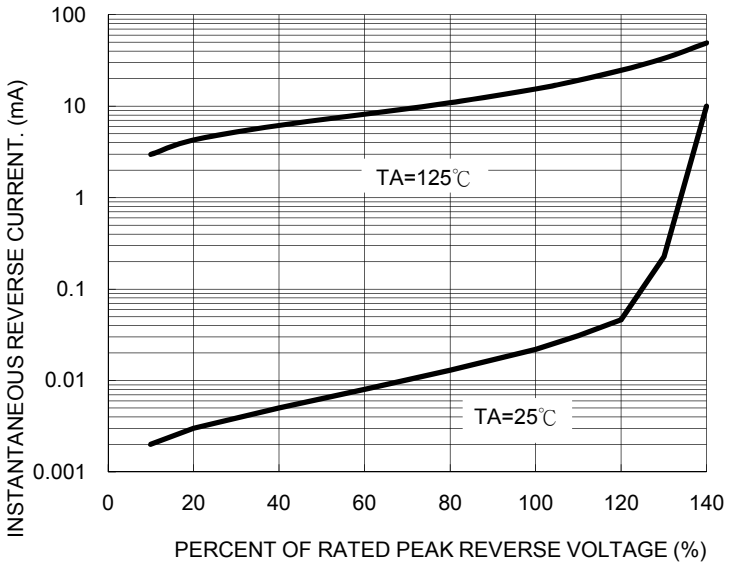


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

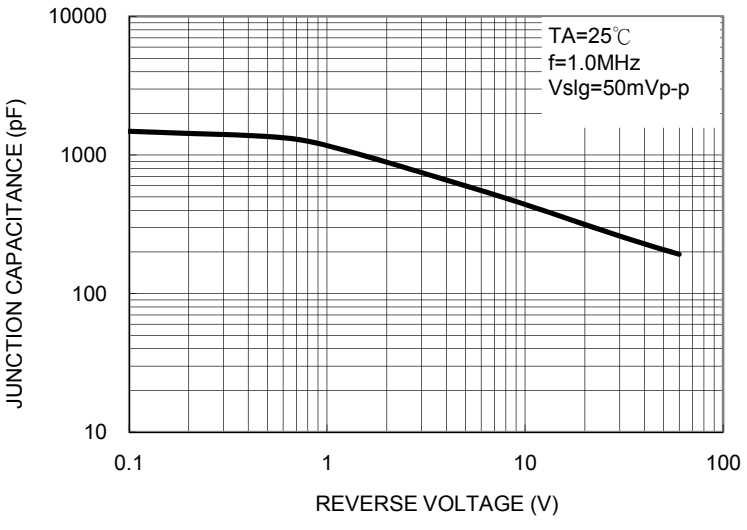
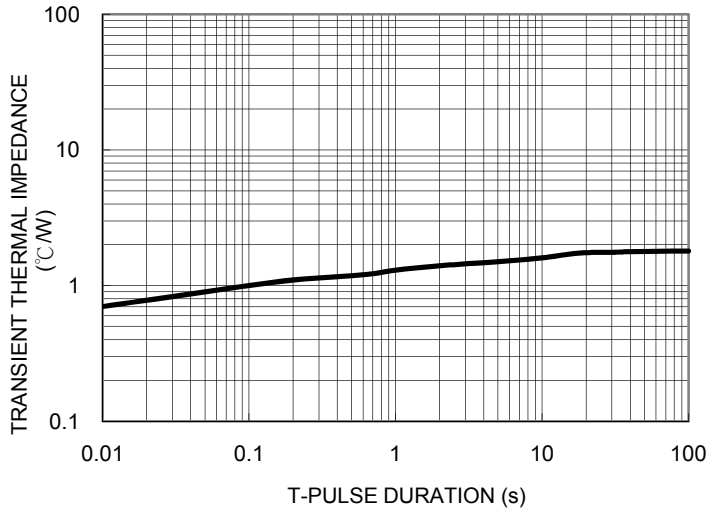


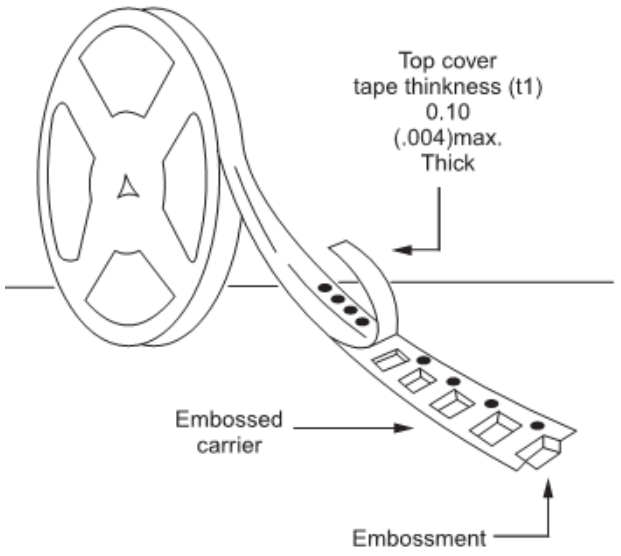
FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

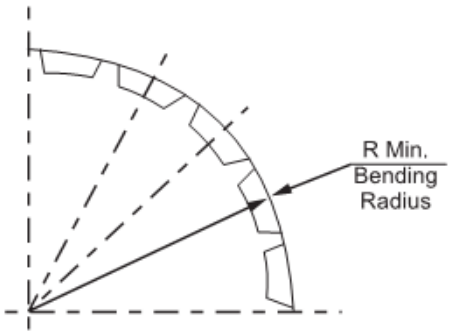


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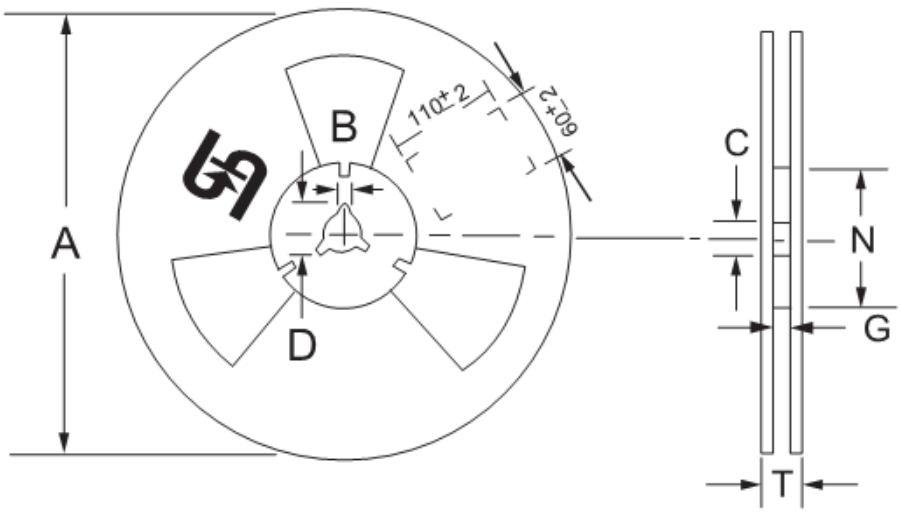
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Tape & Reel specification





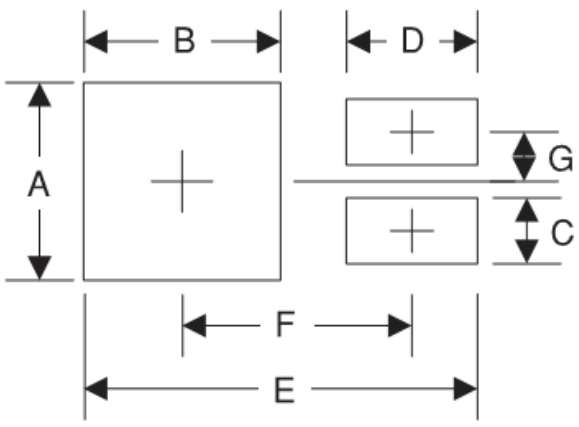
Tape with components shall pass around bending radius without damage, for reels with hub diameters approaching minimum dimension



Reel Size	Tape Size	A	B	C	D	N	G	T
		max	±0.5	±0.5	min	±0.5	+2.0;-0	max
13"	24mm	330	2	13	20.2	75	24.4	30.4

Unit (mm)

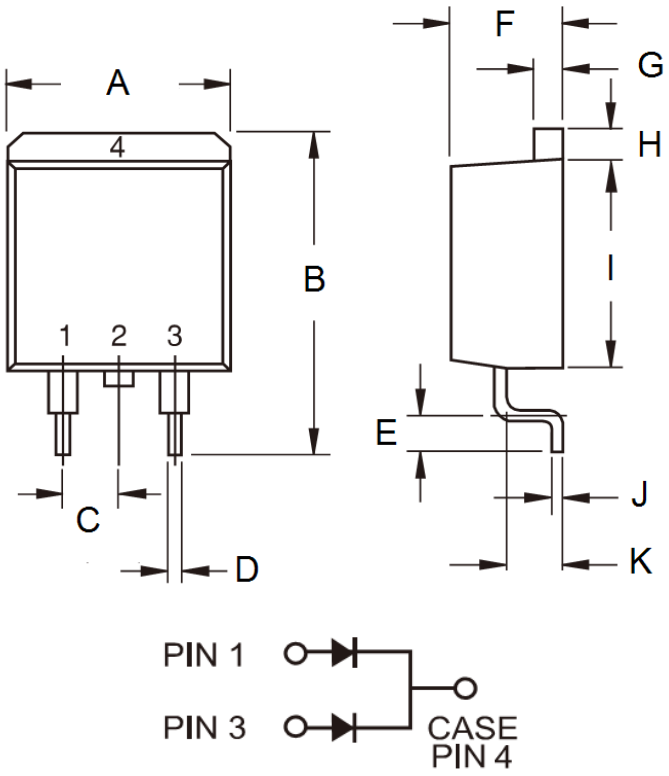
Suggested PAD Layout



Symbol	Unit(mm)
A	10.8
B	7
C	1.1
D	3.5
E	16.9
F	9.5
G	2.5

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Dimensions



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	-	10.5	-	0.413
B	14.60	15.88	0.575	0.625
C	2.41	2.67	0.095	0.105
D	0.68	0.94	0.027	0.037
E	2.29	2.79	0.090	0.110
F	4.44	4.70	0.175	0.185
G	1.14	1.40	0.045	0.055
H	1.14	1.40	0.045	0.055
I	8.25	9.25	0.325	0.364
J	0.36	0.53	0.014	0.021
K	2.03	2.79	0.080	0.110

Marking Diagram



P/N = Specific Device Code
G = Green Compound
YWW = Date Code
F = Factory Code