TAIWAN SEMICONDUCTOR

The Smartest Choice

MBRS10H100CT - MBRS10H200CT

10.0AMPS Surface Mount Schottky Barrier Rectifiers

D²PAK



Pb-Free

RoHS COMPLIANT

Features

- ✧ UL Recognized File # E-326854
- ✧ Plastic material used carriers Underwriters Laboratory Classification 94V-0
- ✧ Metal silicon junction, majority carrier conduction
- ✧ Low power loss, high efficiency
- ✧ High current capability, low forward voltage drop
- ✧ High surge capability
- ✧ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ✧ Guard-ring for overvoltage protection
- ✧ High temperature soldering guaranteed: 260℃/10 seconds
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- ✧ Case: D²PAK molded plastic body
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- ✧ Polarity: As marked
- ✧ Mounting position:Any
- ✧ Weight: 1.41 grams

Ordering Information

Part No.	Package	Packing	Packing code	Packing code (Green)
MBRS10H100CT	D2PAK	800 / 13" REEL	RN	RNG

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ ambient temperature unless otherwise specified.

Parameter	Symbol	MBRS 10H100CT	MBRS 10H150CT	MBRS 10H200CT	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	100	150	200	V
Maximum RMS Voltage	V_{RMS}	70	105	140	V
Maximum DC Blocking Voltage	V_{DC}	100	150	200	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	10			A
Peak Repetitive Surge Current (Rated V_R, Square Wave, 20KHz)	I_{FRM}	10			A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	120			A
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	1		0.5	A
Maximum Instantaneous Forward Voltage (Note 2) IF=5A, T_A=25℃ IF=5A, T_A=125℃ IF=10A, T_A=25℃ IF=10A, T_A=125℃	V_F	 0.85 0.75 0.95 0.85	 0.88 0.75 0.97 0.85		V
Maximum Reverse Current @ Rated V_R T_A=25 ℃	I_R	5			uA
T_A=125 ℃		1			mA
Voltage Rate of Change,(Rated V_R)	dV/dt	10000			V/us
Typical Thermal Resistance	$R_{\theta jC}$	3.5			^{O}C/W
Operating Temperature Range	T_J	- 55 to + 175			^{O}C
Storage Temperature Range	T_{STG}	- 55 to + 175			^{O}C

Note 1: 2.0uS Pulse Width, f=1.0KHz

Note 2: Pulse Test : 300uS Pulse Width, 1% Duty Cycle

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RATINGS AND CHARACTERISTIC CURVES (MBRS10H100CT THRU MBRS10H200CT)

FIG.1 FORWARD CURRENT DERATING CURVE

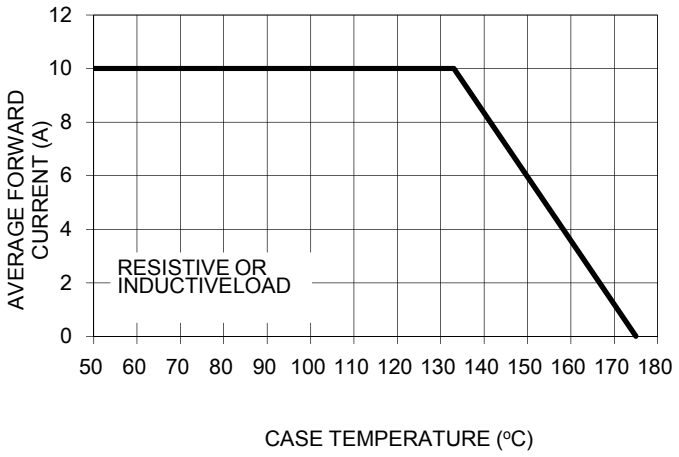


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

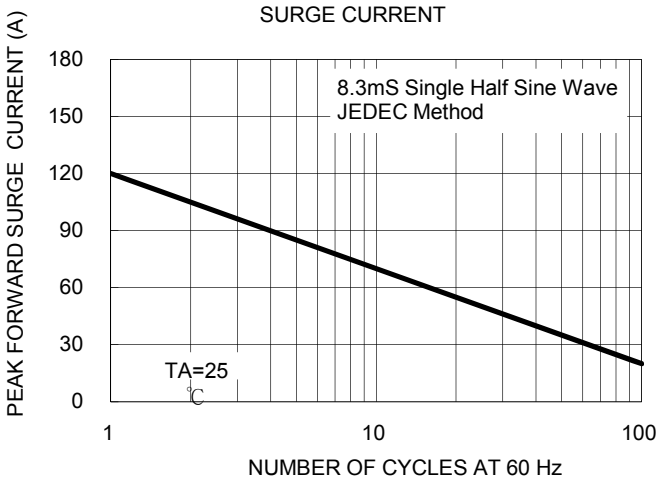


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

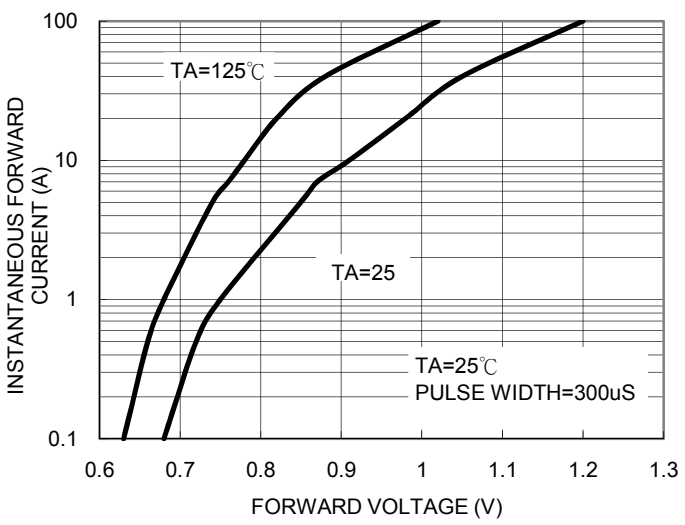


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

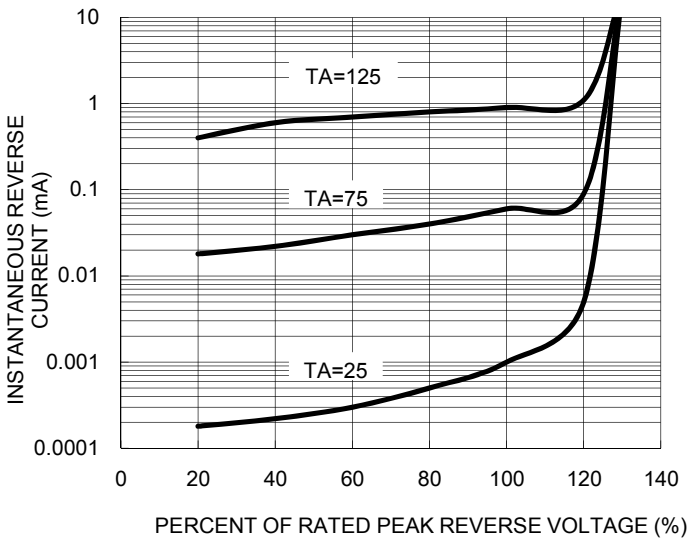


FIG. 5 TYPICAL JUNCTION CAPACITANCE

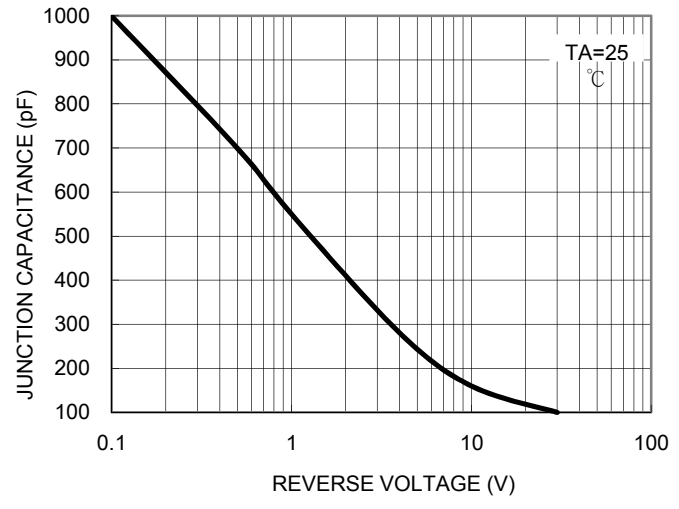
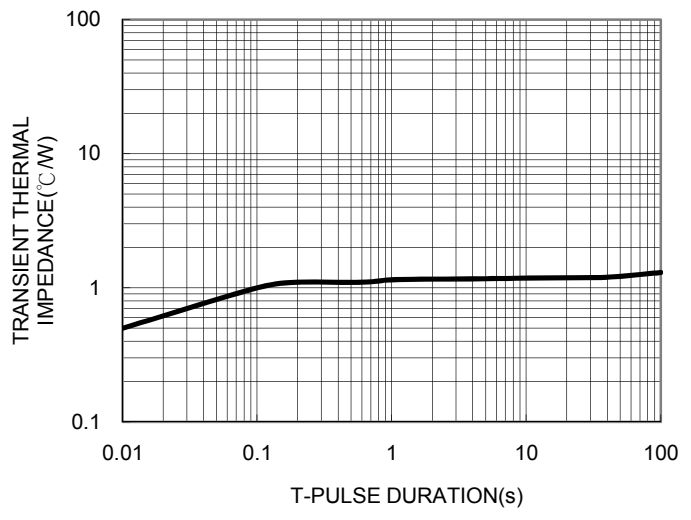


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE



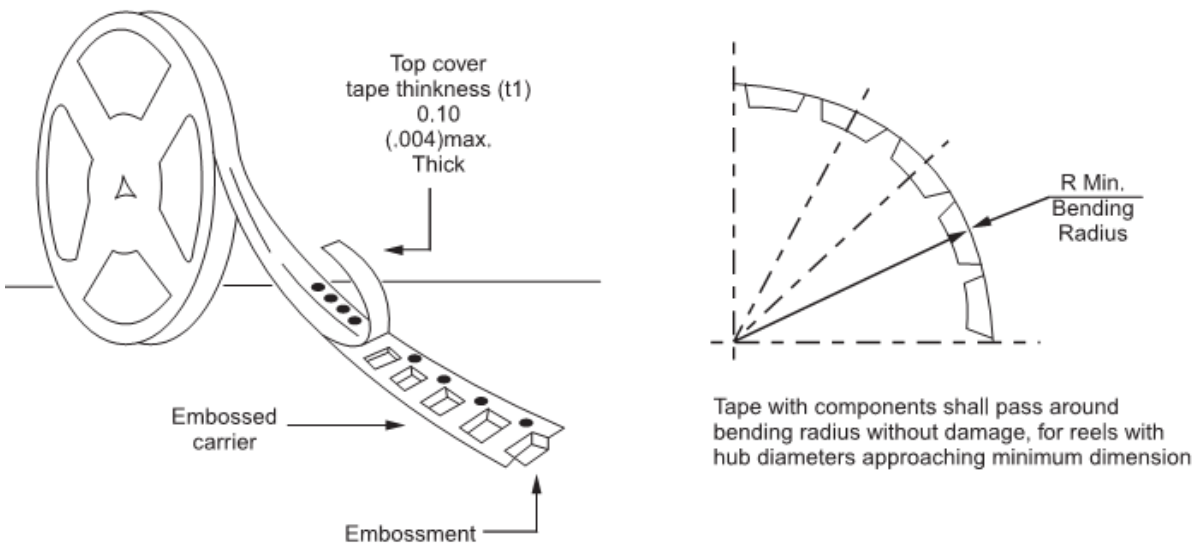
Version:G13

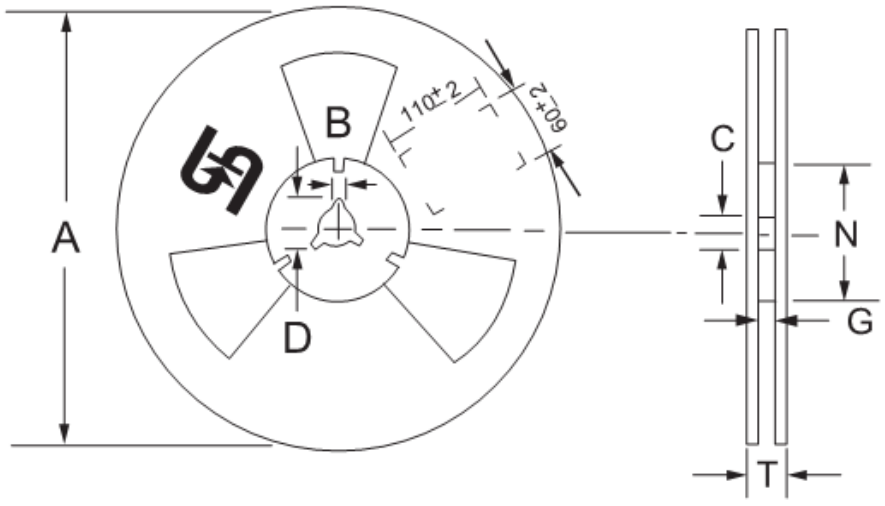
Ordering Information

Part No.	Package	Packing	Packing code	Packing code (Green)
MBRS10HxxCT	D2PAK	800 / 13" REEL	RN	RNG
		50 / Tube	C0	C0G

Note: "x" is Device Code from "100" thru "200".

Tape & Reel specification

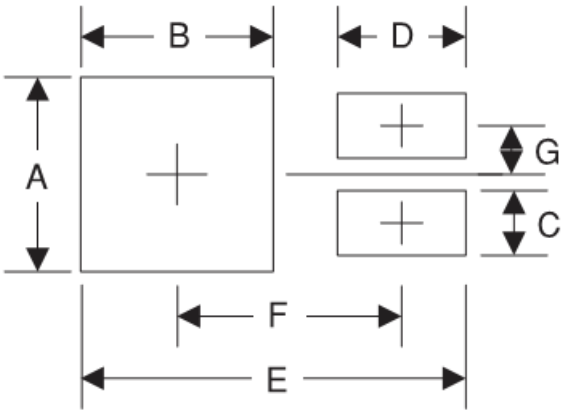




Reel Size	Tape Size	A	B	C	D	N	G	T
		max	±0.5	±0.5	min	±0.5	+2.0;-0	max
13"	24mm	330	2	13	20.2	75	24.4	30.4

Unit (mm)

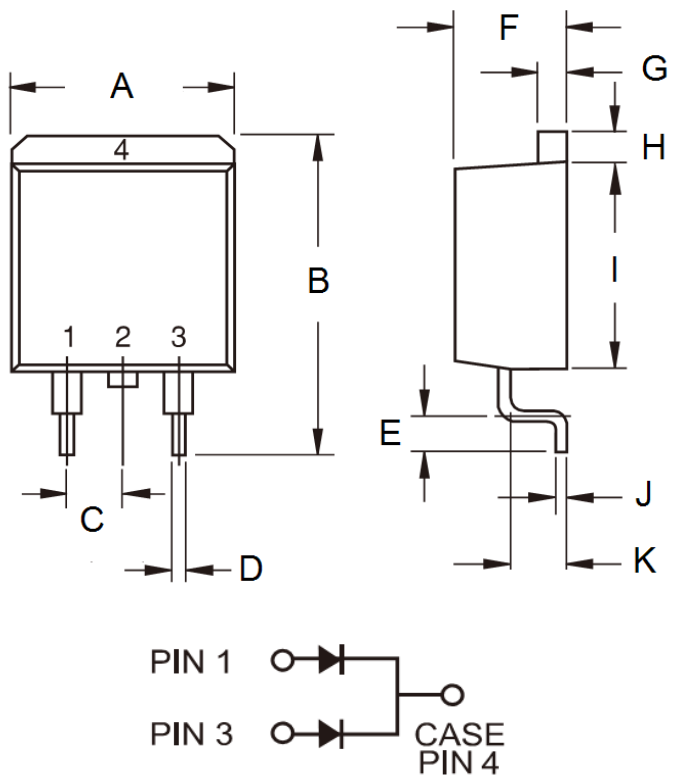
Suggested PAD Layout



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