

## Dual Common Cathode Schottky Rectifier

### FEATURES

- Low power loss, high efficiency
- Guardring for overvoltage protection
- High surge current capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



### TO-220AB



### MECHANICAL DATA

**Case:** TO-220AB

Molding compound, UL flammability classification rating 94V-0

Packing code with suffix "G" means green compound (halogen-free)

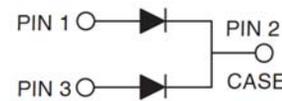
**Terminal:** Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 1A whisker test

**Polarity:** As marked

**Mounting torque:** 5 in-lbs maximum

**Weight:** 1.9 g (approximately)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)								
PARAMETER	SYMBOL	MBR30 45CT-Y	MBR30 60CT-Y	MBR30 80CT-Y	MBR30 100CT-Y	MBR30 150CT-Y	UNIT	
Marking code		MBR30 45CT	MBR30 60CT	MBR30 80CT	MBR30 100CT	MBR30 150CT		
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	45	60	80	100	150	V	
Maximum RMS voltage	V <sub>RMS</sub>	31	42	56	70	105	V	
Maximum DC blocking voltage	V <sub>DC</sub>	45	60	80	100	150	V	
Maximum average forward rectified current	I <sub>F(AV)</sub>	30						A
Peak repetitive forward current (Rated VR, Square wave, 20KHz)	I <sub>FRM</sub>	30						A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	200						A
Peak repetitive reverse surge current (Note 1)	I <sub>RRM</sub>	1.0		0.5				A
Maximum instantaneous forward voltage (Note 2) I <sub>F</sub> =15A, T <sub>J</sub> =25°C I <sub>F</sub> =15A, T <sub>J</sub> =125°C I <sub>F</sub> =30A, T <sub>J</sub> =25°C I <sub>F</sub> =30A, T <sub>J</sub> =125°C	V <sub>F</sub>	0.7 0.6 0.82 0.73	0.77 0.67 - -	0.84 0.70 0.94 0.82		0.95 0.92 1.02 0.98		V
Maximum reverse current @ rated VR T <sub>J</sub> =25°C T <sub>J</sub> =125°C	I <sub>R</sub>	0.2				0.1		mA
		40	10	7.5		5		
Voltage rate of change (Rated V <sub>R</sub> )	dV/dt	10000						V/μs
Typical thermal resistance	R <sub>θJC</sub>	1.0			1.5			°C/W
Operating junction temperature range	T <sub>J</sub>	- 55 to +150						°C
Storage temperature range	T <sub>STG</sub>	- 55 to +150						°C

Note 1: tp = 2.0 μs, 1.0KHz

Note 2: Pulse test with PW=300μs, 1% duty cycle

ORDERING INFORMATION				
PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
MBR30xxCT-Y (Note 1)	C0	G	TO-220AB	50 / Tube

Note 1: "xx" defines voltage from 45V (MBR3045CT-Y) to 150V (MBR30150CT-Y)

EXAMPLE				
PREFERRED PART NO.	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
MBR3060CT-Y C0	MBR3060CT-Y	C0		
MBR3060CT-Y C0G	MBR3060CT-Y	C0	G	Green compound

**RATINGS AND CHARACTERISTICS CURVES**

( $T_A=25^\circ\text{C}$  unless otherwise noted)

FIG. 1- FORWARD CURRENT DERATING CURVE

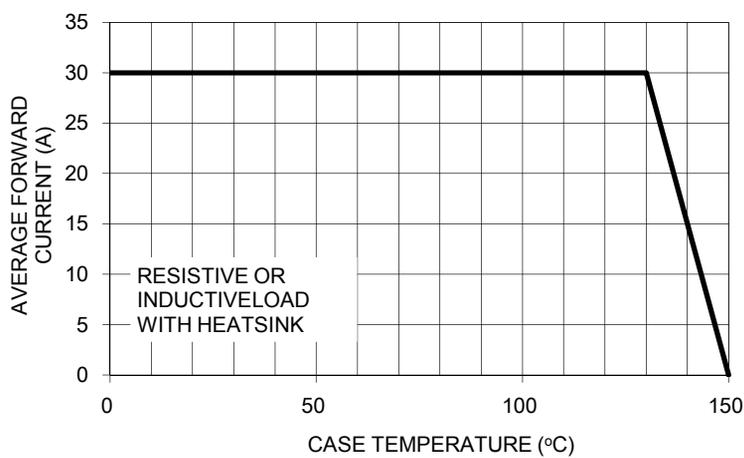


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

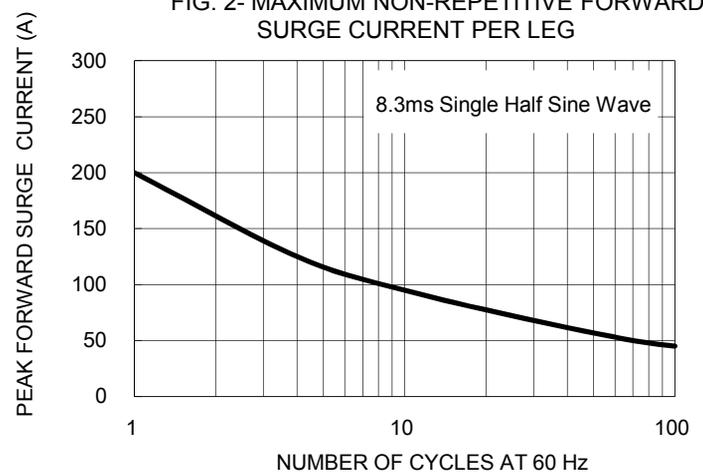


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

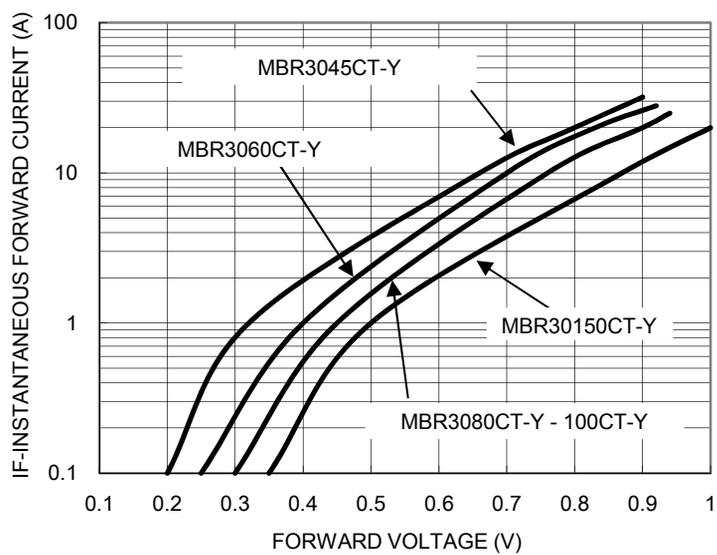


FIG. 4- TYPICAL REVERSE CHARACTERISTICS PER LEG

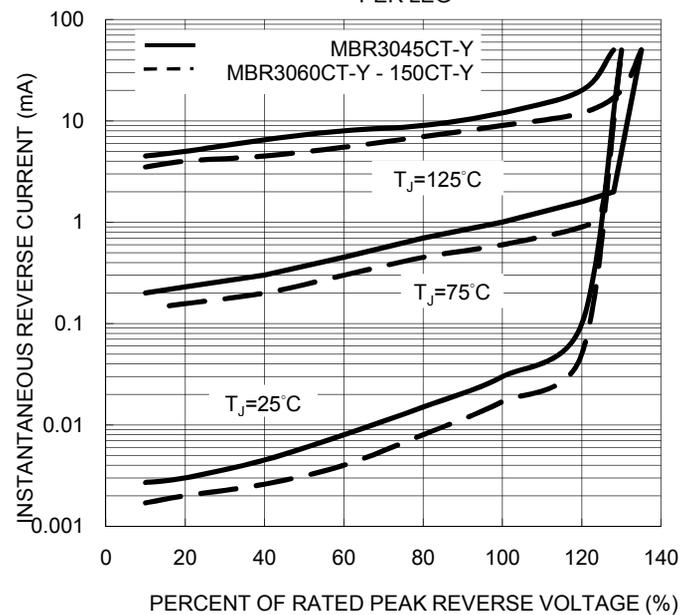


FIG. 5- TYPICAL JUNCTION CAPACITANCE PER LEG

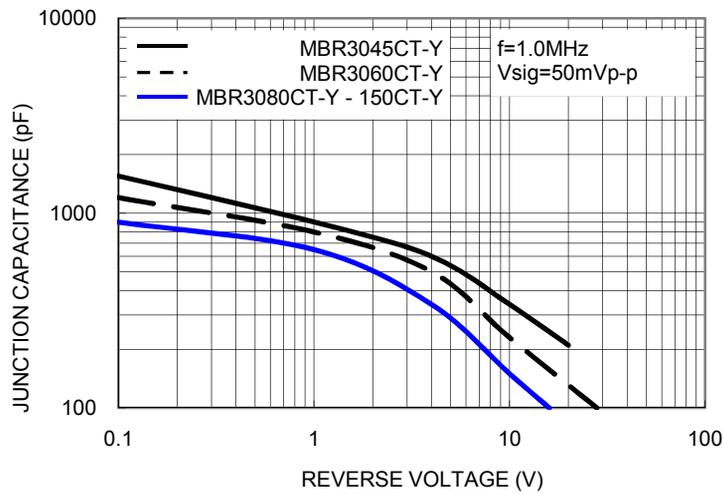
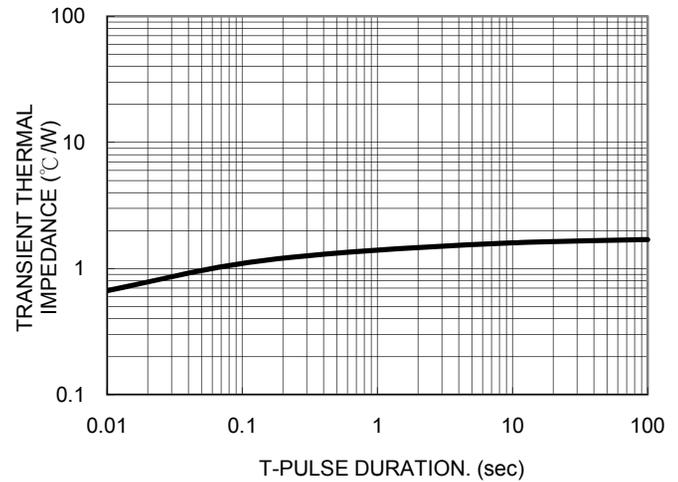
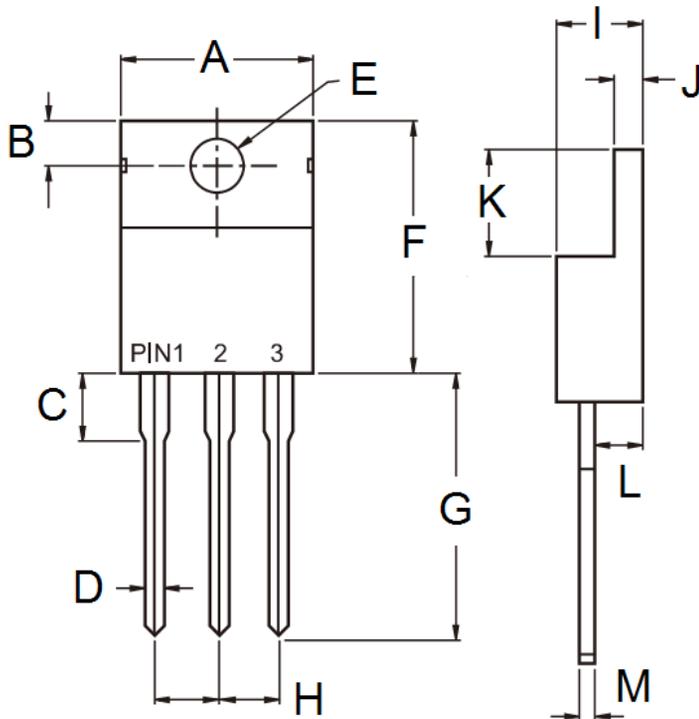


FIG. 6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	-	10.50	-	0.413
B	2.62	3.44	0.103	0.135
C	2.80	4.20	0.110	0.165
D	0.68	0.94	0.027	0.037
E	3.54	4.00	0.139	0.157
F	14.60	16.00	0.575	0.630
G	13.19	14.79	0.519	0.582
H	2.41	2.67	0.095	0.105
I	4.42	4.76	0.174	0.187
J	1.14	1.40	0.045	0.055
K	5.84	6.86	0.230	0.270
L	2.20	2.80	0.087	0.110
M	0.35	0.64	0.014	0.025

MARKING DIAGRAM



- P/N = Marking Code
- G = Green Compound
- YWW = Date Code
- F = Factory Code

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