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## Schottky Barrier 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



### MECHANICAL DATA

**Case:** TO-220AC

Molding compound, UL flammability classification rating 94V-0

Base P/N with suffix "G" on packing code - halogen-free

Base P/N with prefix "H" on packing code - AEC-Q101 qualified

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

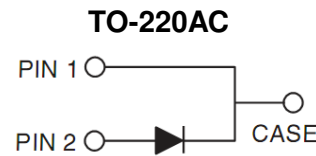
Meet JESD 201 class 1A whisker test,

with prefix "H" on packing code meet JESD 201 class 2 whisker test

**Polarity:** As marked

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

**Weight:** 1.85 g (approximately)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)									
PARAMETER	SYMBOL	MBR 735	MBR 745	MBR 750	MBR 760	MBR 790	MBR 7100	MBR 7150	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	35	45	50	60	90	100	150	V
Maximum RMS voltage	V <sub>RMS</sub>	24	31	35	42	63	70	105	V
Maximum DC blocking voltage	V <sub>DC</sub>	35	45	50	60	90	100	150	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	7.5							A
Peak repetitive forward current (Rated VR, Square Wave, 20KHz)	I <sub>FRM</sub>	15							A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	150							A
Peak repetitive reverse surge current (Note 1)	I <sub>RRM</sub>	1		0.5					A
Maximum instantaneous forward voltage (Note 2) I <sub>F</sub> =7.5 A, T <sub>J</sub> =25°C I <sub>F</sub> =7.5 A, T <sub>J</sub> =125°C I <sub>F</sub> =15 A, T <sub>J</sub> =25°C I <sub>F</sub> =15 A, T <sub>J</sub> =125°C	V <sub>F</sub>	-		0.75		0.92		0.95	V
		0.57		0.65		0.82		0.92	
		0.84		-		-		-	
		0.72		-		-		-	
Maximum reverse current @ rated VR    T <sub>J</sub> =25 °C T <sub>J</sub> =125 °C	I <sub>R</sub>	0.1							mA
		15		10		5			
Voltage rate of change (Rated V <sub>R</sub> )	dV/dt	10000							V/μs
Typical thermal resistance	R <sub>θJC</sub>	5							°C/W
	R <sub>θJA</sub>	15							
Operating junction temperature range	T <sub>J</sub>	- 55 to +150							°C
Storage temperature range	T <sub>STG</sub>	- 55 to +175							°C

Note 1: tp = 2.0 μs, 1.0KHz

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



ORDERING INFORMATION					
PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
MBR7xx (Note 1)	Prefix "H"	C0	Suffix "G"	TO-220AC	50 / Tube

Note 1: "xx" defines voltage from 35V (MBR735) to 150V (MBR7150)

EXAMPLE					
PREFERRED P/N	PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
MBR760 C0	MBR760		C0		
MBR760 C0G	MBR760		C0	G	Green compound
MBR760HC0	MBR760	H	C0		AEC-Q101 qualified

## RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG.1- FORWARD CURRENT DERATING CURVE

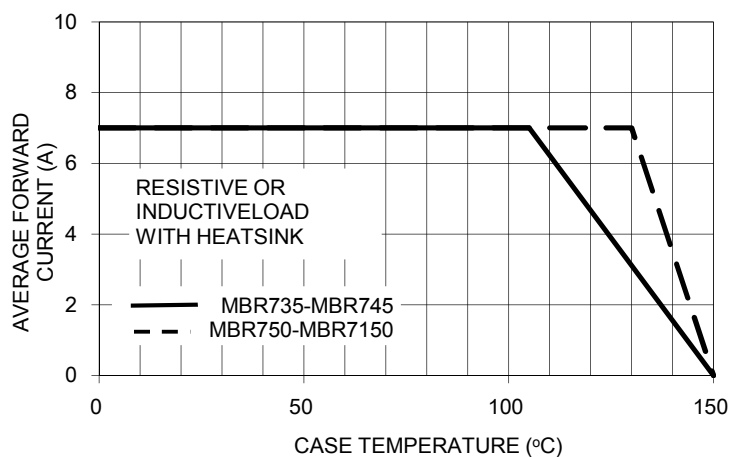


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

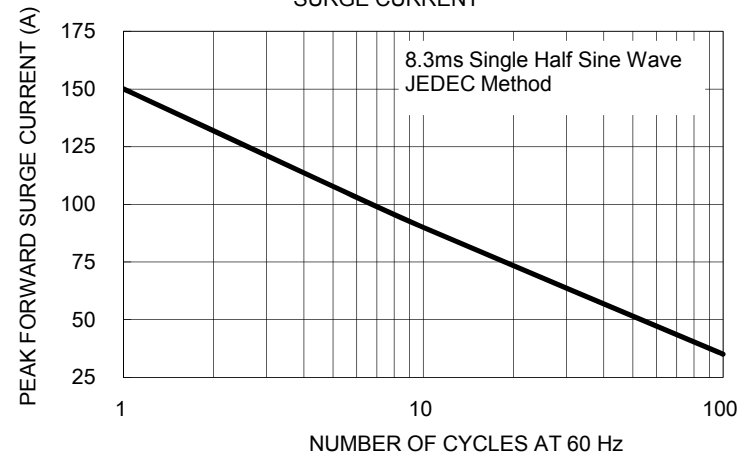


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

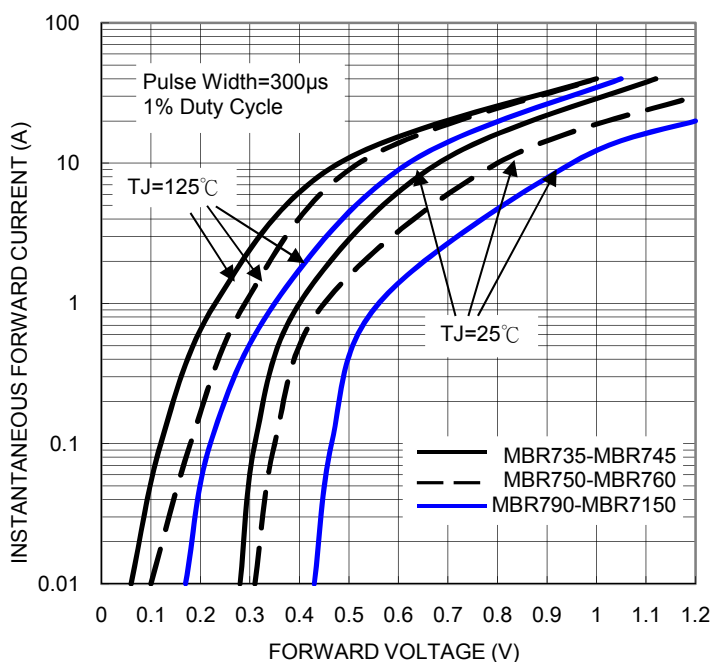


FIG. 4- TYPICAL REVERSE CHARACTERISTICS

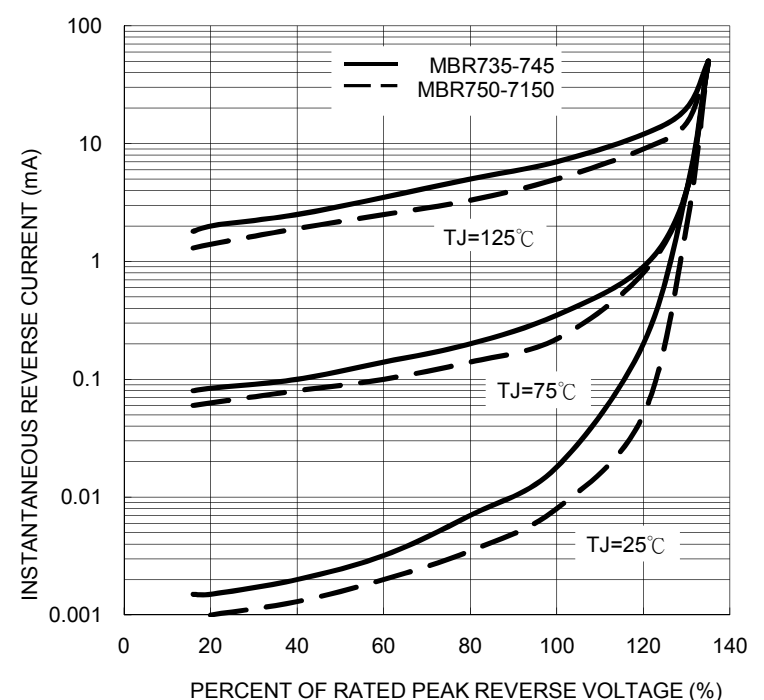


FIG. 5- TYPICAL JUNCTION CAPACITANCE

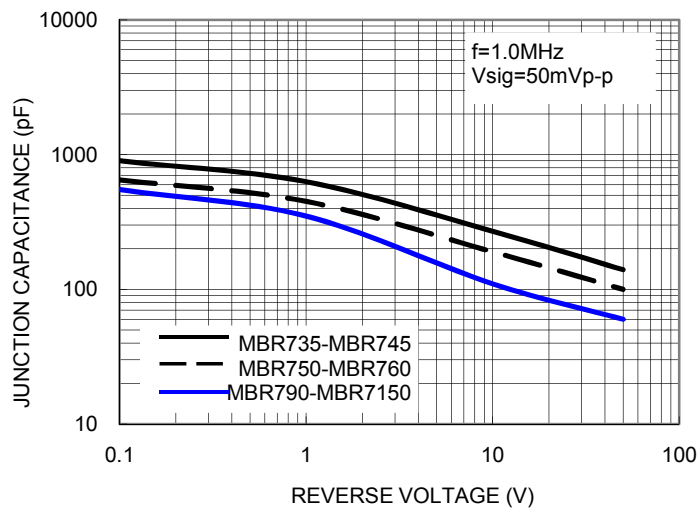
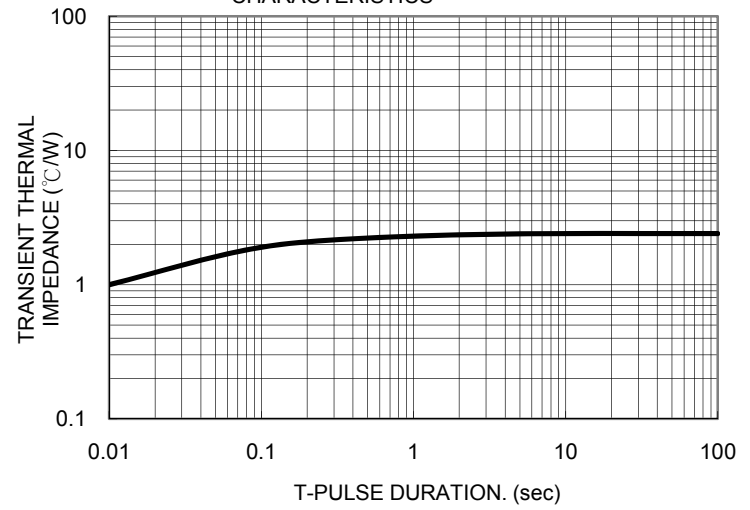
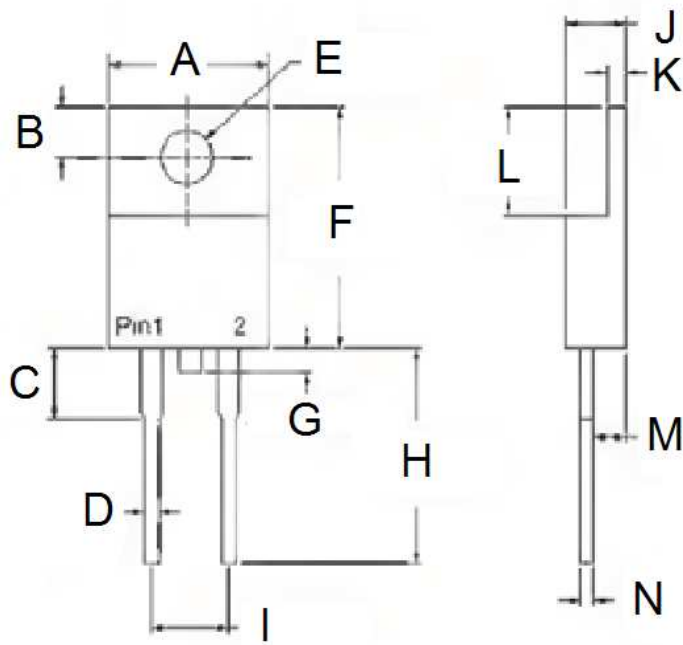


FIG. 6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS




## 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	0.00	1.60	0.000	0.063
H	13.19	14.79	0.519	0.582
I	4.95	5.20	0.195	0.205
J	4.42	4.76	0.174	0.187
K	1.14	1.40	0.045	0.055
L	5.84	6.86	0.230	0.270
M	2.20	2.80	0.087	0.110
N	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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