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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

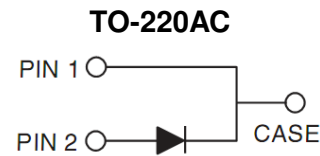
Meet JESD 201 class 1A whisker test,

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

Polarity: As marked

Mounting torque: 5 in-lbs maximum

Weight: 1.88 g (approximately)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)											
PARAMETER	SYMBOL	MBR 1035	MBR 1045	MBR 1050	MBR 1060	MBR 1090	MBR 10100	MBR 10150	MBR 10200	UNIT	
Maximum repetitive peak reverse voltage	V _{RRM}	35	45	50	60	90	100	150	200	V	
Maximum RMS voltage	V _{RMS}	24	31	35	42	63	70	105	140	V	
Maximum DC blocking voltage	V _{DC}	35	45	50	60	90	100	150	200	V	
Maximum average forward rectified current	I _{F(AV)}	10								A	
Peak repetitive forward current (Rated VR, Square Wave, 20KHz)	I _{FRM}	20								A	
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	150								A	
Peak repetitive reverse surge current (Note 1)	I _{RRM}	1.0		0.5							A
Maximum instantaneous forward voltage (Note 2) I _F =10A, T _J =25°C I _F =10A, T _J =125°C	V _F	0.70		0.80		0.85		1.05		V	
		0.57		0.70		0.71		-			
Maximum reverse current @ rated VR T _J =25 °C T _J =125 °C	I _R	0.1								mA	
		15		10		6					
Voltage rate of change (Rated V _R)	dV/dt	10000								V/μs	
Typical thermal resistance	R _{θJC}	3								°C/W	
Operating junction temperature range	T _J	- 55 to +150								°C	
Storage temperature range	T _{STG}	- 55 to +175								°C	

Note 1: t_p = 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
MBR10xx (Note 1)	Prefix "H"	C0	Suffix "G"	TO-220AC	50 / Tube

Note 1: "xx" defines voltage from 35V (MBR1035) to 200V (MBR10200)

EXAMPLE

PREFERRED P/N	PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
MBR1060 C0	MBR1060		C0		
MBR1060 C0G	MBR1060		C0	G	Green compound
MBR1060HC0	MBR1060	H	C0		AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG. 1- FORWARD CURRENT DERATING CURVE

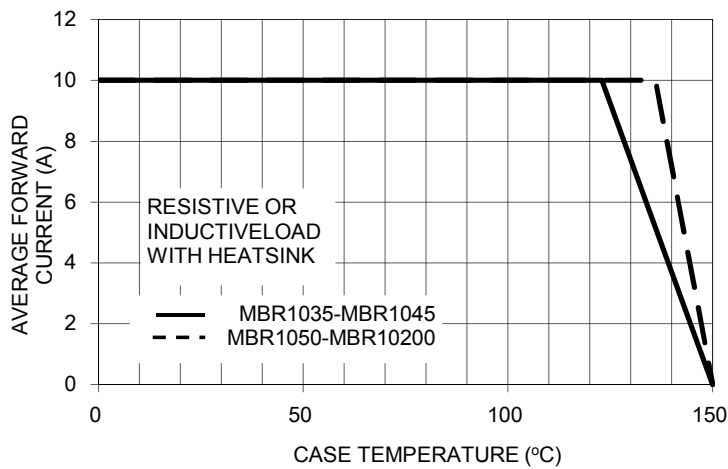


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

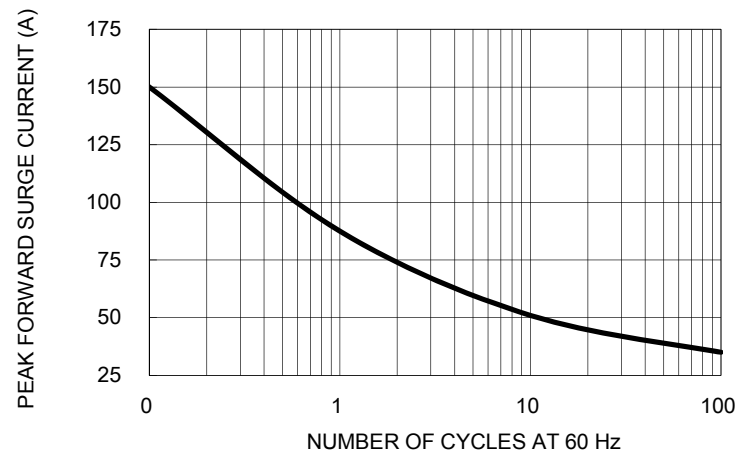


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

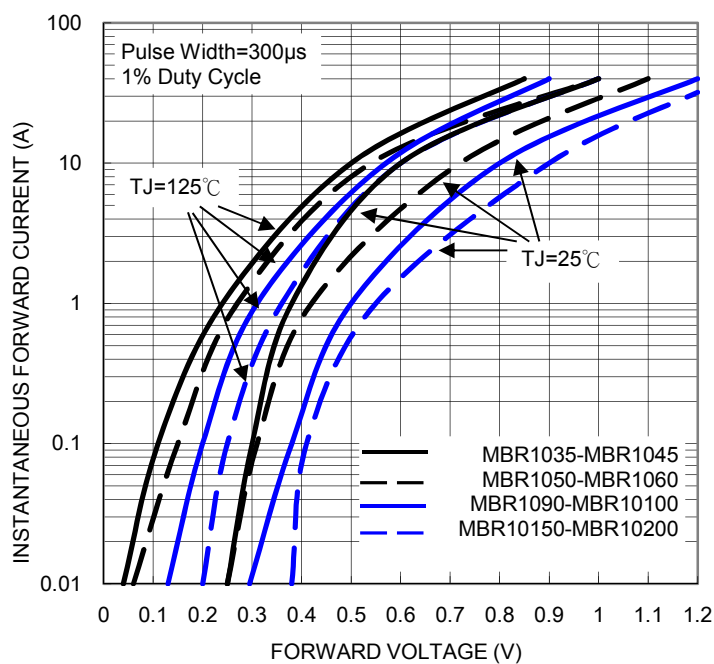


FIG. 4- TYPICAL REVERSE CHARACTERISTICS

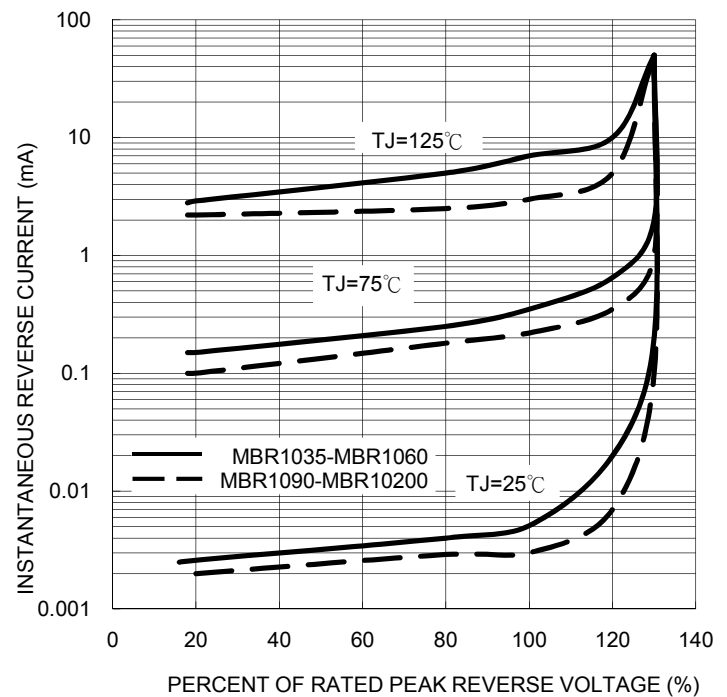


FIG. 5- TYPICAL JUNCTION CAPACITANCE

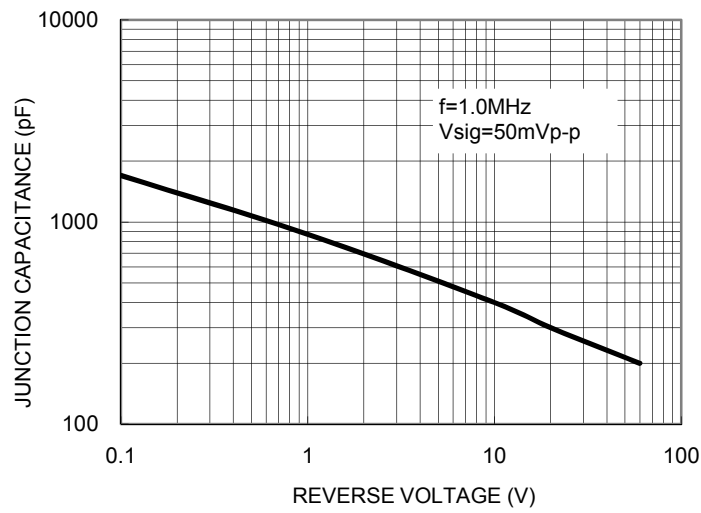
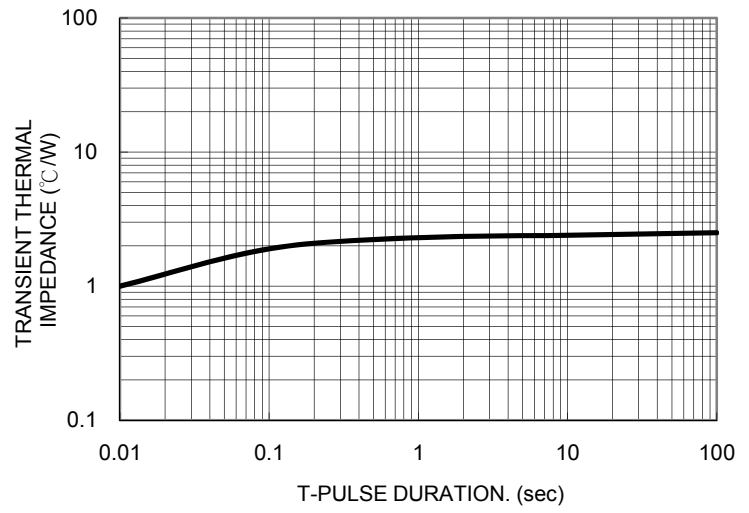
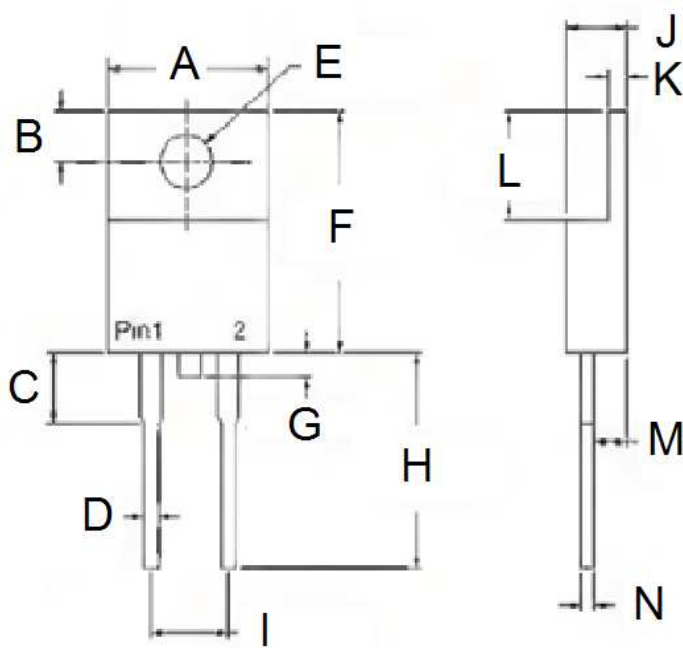


FIG. 6- TYPICAL TRANSIENT THERMAL CHARACTERISTIC



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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