



**THE DATASHEET OF  
TSF20U60C**



## 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

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

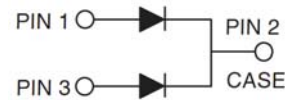
Meet JESD 201 class 1A whisker test,

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 <sub>A</sub> =25°C unless otherwise noted)										
PARAMETER	SYMBOL	MBR 2035 CT	MBR 2045 CT	MBR 2050 CT	MBR 2060 CT	MBR 2090 CT	MBR 20100 CT	MBR 20150 CT	MBR 20200 CT	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	35	45	50	60	90	100	150	200	V
Maximum RMS voltage	V <sub>RMS</sub>	24	31	35	42	63	70	105	140	V
Maximum DC blocking voltage	V <sub>DC</sub>	35	45	50	60	90	100	150	200	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	20								A
Peak repetitive forward current (Rated VR, Square Wave, 20KHz)	I <sub>FRM</sub>	20								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>RSM</sub>	1	0.5						0.15	A
Maximum instantaneous forward voltage (Note 2) I <sub>F</sub> =10A, T <sub>J</sub> =25°C I <sub>F</sub> =10A, T <sub>J</sub> =125°C I <sub>F</sub> =20A, T <sub>J</sub> =25°C I <sub>F</sub> =20A, T <sub>J</sub> =125°C	V <sub>F</sub>	- 0.57 0.84 0.72	- 0.70 0.95 0.85	0.80 0.70 0.95 0.85	0.85 0.75 0.95 0.85	0.85 0.75 0.95 0.85	0.85 0.75 0.95 0.85	0.99 0.87 1.23 1.10	V	
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	0.15					
Voltage rate of change (Rated V <sub>R</sub> )	dV/dt	10000								V/μs
Typical thermal resistance	R <sub>θJC</sub>	1.0				2.0				°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.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
MBR20xxCT	Prefix "H"	C0	Suffix "G"	TO-220AB	50 / Tube

Note 1: "xx" defines voltage from 35V (MBR2035CT) to 200V (MBR20200CT)

EXAMPLE					
PREFERRED P/N	PART NO.	AEC-Q101 QUALIFIED	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
MBR2060CT C0	MBR2060CT		C0		
MBR2060CT C0G	MBR2060CT		C0	G	Green compound
MBR2060CTHC0	MBR2060CT	H	C0		AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

FIG. 1- FORWARD CURRENT DERATING CURVE

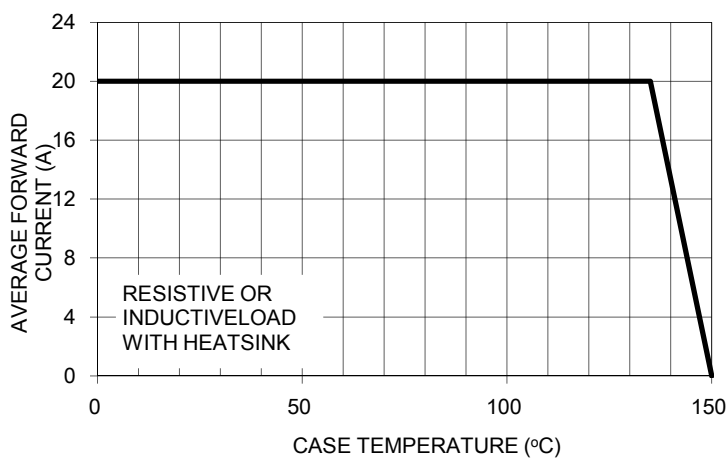


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

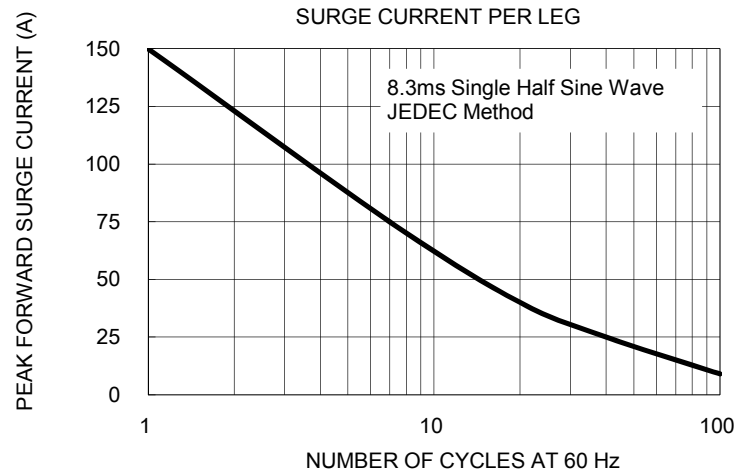


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

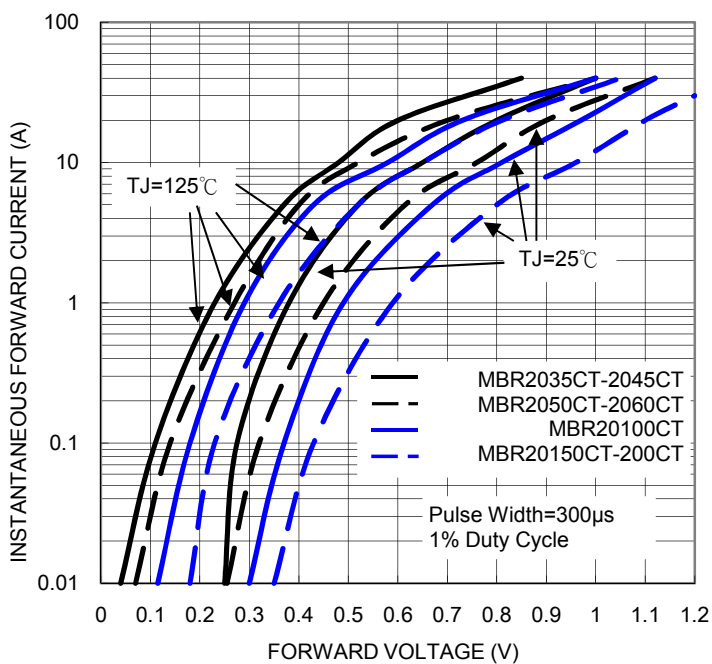


FIG. 4- TYPICAL REVERSE CHARACTERISTICS PER LEG

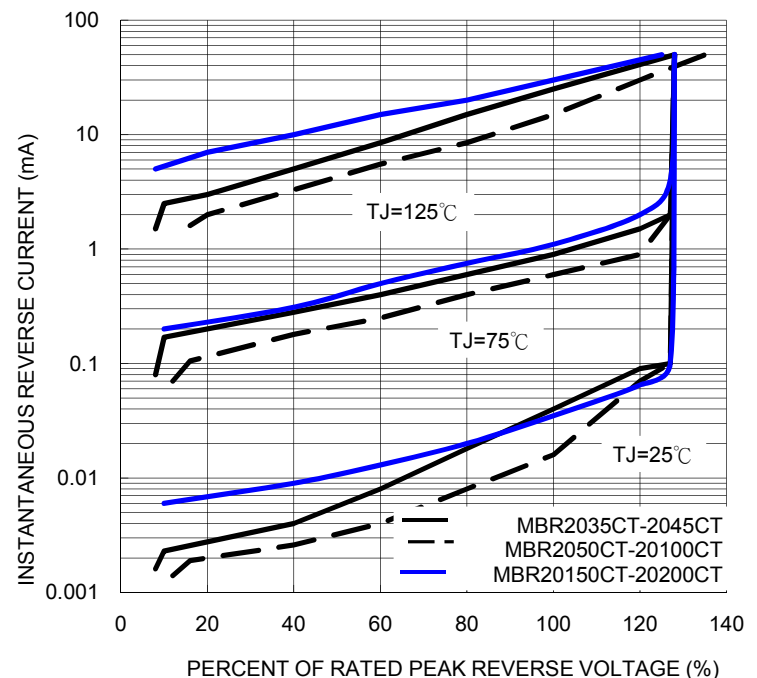


FIG. 5- TYPICAL JUNCTION CAPACITANCE PER LEG

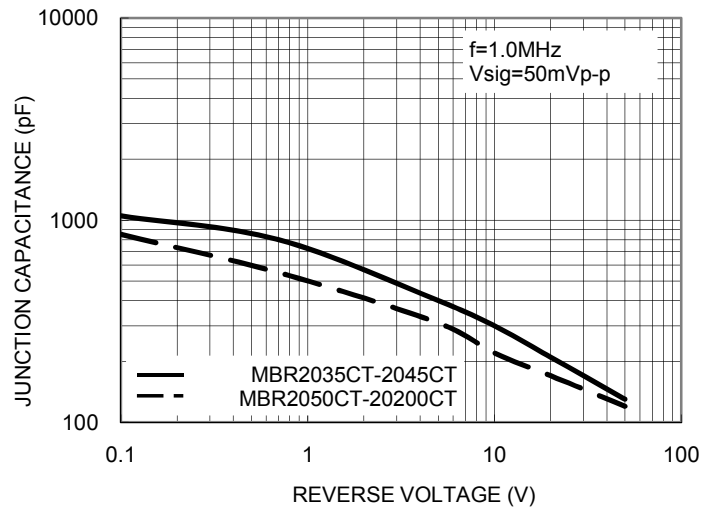
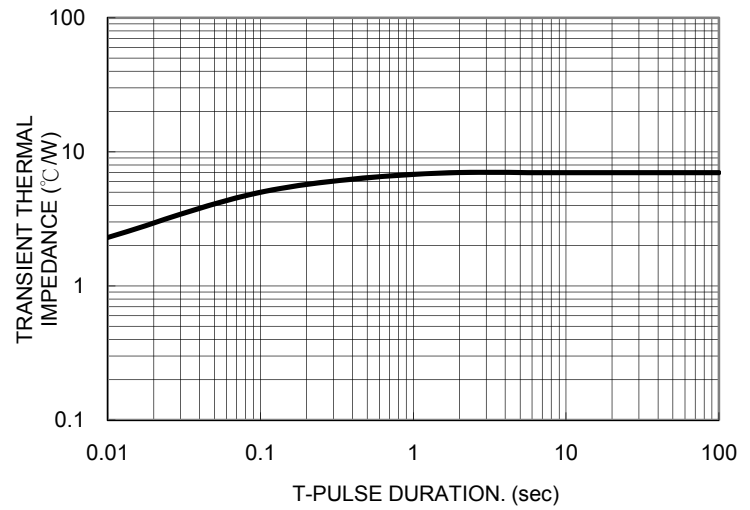
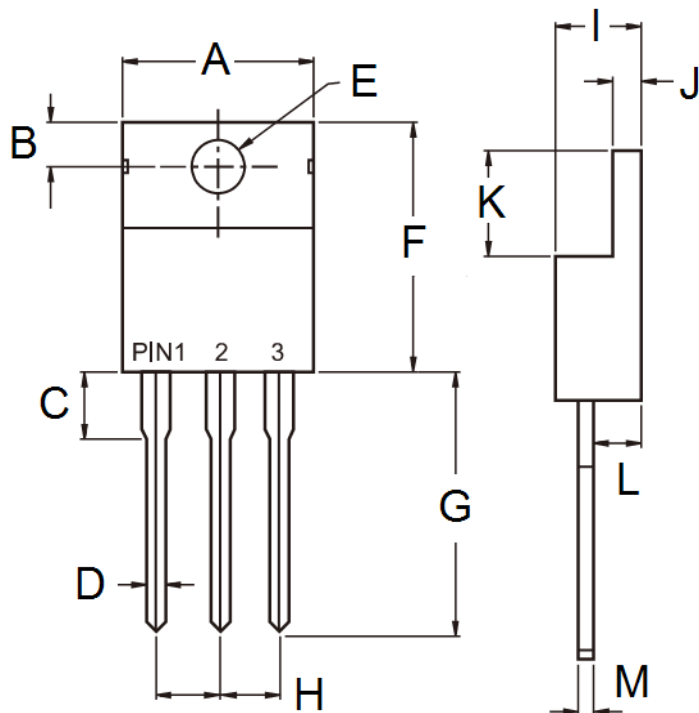


FIG. 6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

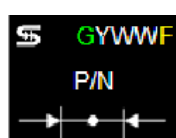


PACKAGE OUTLINE DIMENSIONS



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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