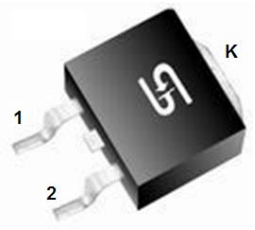
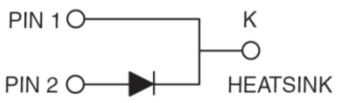
10A, 35V - 150V Surface Mount Schottky Barrier Rectifiers

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- 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



TO-263AB (D^2PAK)



Pb-Free

RoHS COMPLIANT

MECHANICAL DATA

Case: TO-263AB (D^2PAK)

Molding compound, UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

Part no. with suffix "H" means AEC-Q101 qualified

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

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

Meet JESD 201 class 2 whisker test

Polarity: As marked

Weight: 1.37 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	MBRS 1035	MBRS 1045	MBRS 1050	MBRS 1060	MBRS 1090	MBRS 10100	MBRS 10150	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	35	45	50	60	90	100	150	V
Maximum RMS voltage	V_{RMS}	24	31	35	42	63	70	105	V
Maximum DC blocking voltage	V_{DC}	35	45	50	60	90	100	150	V
Maximum average forward rectified current	$I_{F(AV)}$	10							A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	120							A
Peak repetitive reverse surge Current (Note 1)	I_{RRM}	1		0.5					A
Maximum instantaneous forward voltage (Note 2)									
I_F=10A, T_J=25°C	V_F	-		0.80		0.85		1.05	V
I_F=10A, T_J=125°C		0.57		0.70		0.71		-	
I_F=20A, T_J=25°C		0.84		0.95		-		-	
I_F=20A, T_J=125°C		0.72		0.85		-		-	
Maximum reverse current @ rated V_R T_J=25°C	I_R	0.1							mA
Maximum reverse current @ rated V_R T_J=100°C		15		10		-			
Maximum reverse current @ rated V_R T_J=125°C		-				5			
Voltage rate of change (Rated V_R)	dV/dt	10000							V/μs
Typical thermal resistance	$R_{\theta JC}$	2							°C/W
	$R_{\theta JA}$	60							
Operating junction temperature range	T_J	- 55 to +175							°C
Storage temperature range	T_{STG}	- 55 to +175							°C

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

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

ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX (*)	PACKAGE	PACKING
MBRS10xx (Note 1)	H	RN	G	D^2PAK	800 / 13" Paper reel
		MN			800 / 13" Plastic reel

Note 1: "xx" defines voltage from 35V (MBRS1035) to 150V (MBRS10150)

*: Optional available

EXAMPLE					
PREFERRED P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
MBRS1060HRNG	MBRS1060	H	RN	G	AEC-Q101 qualified Green compound

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

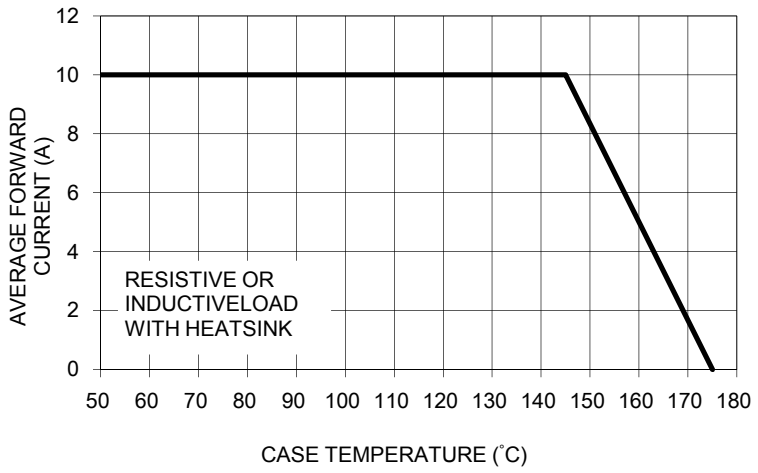


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

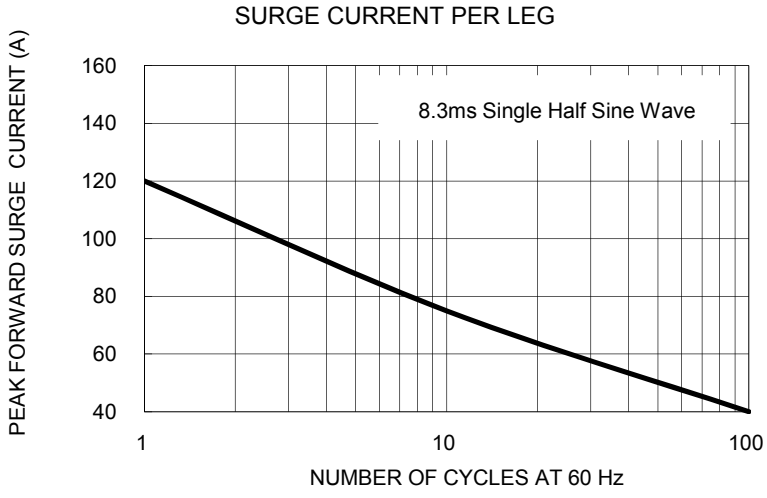


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

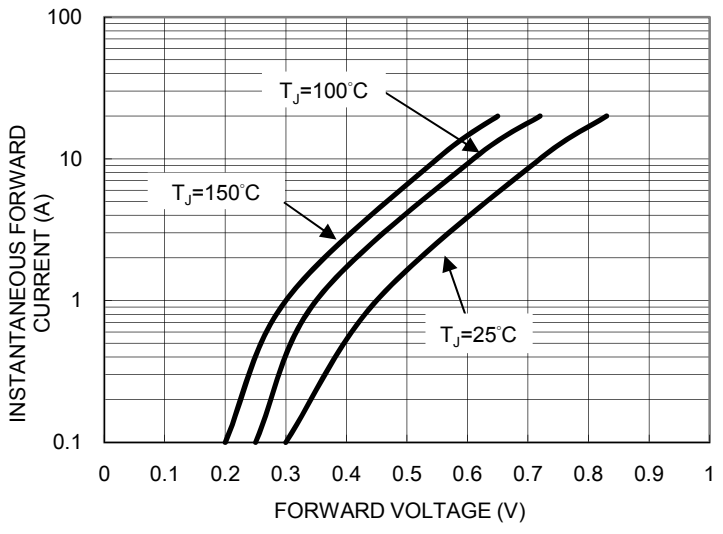


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

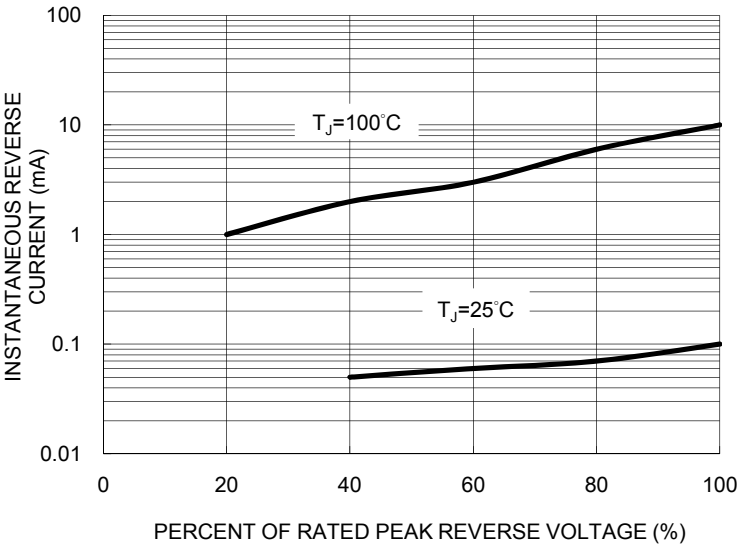


FIG. 5 TYPICAL JUNCTION CAPACITANCE

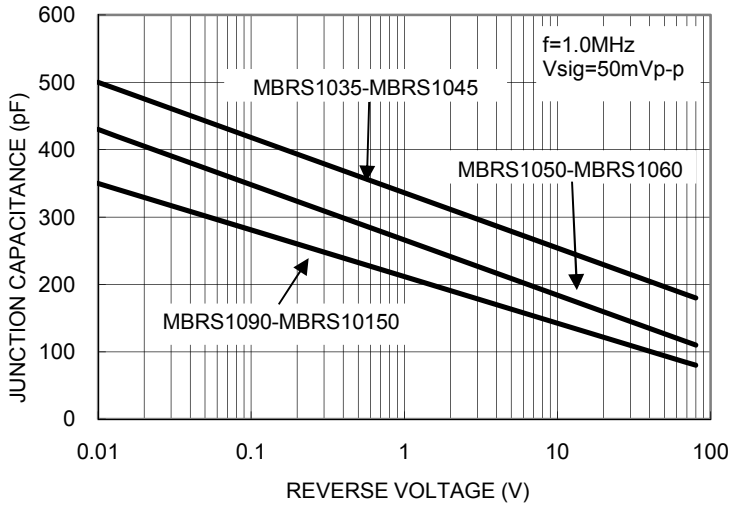
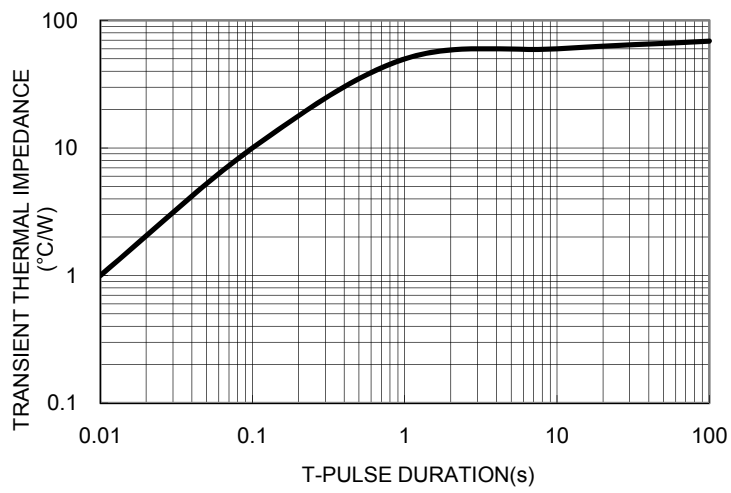
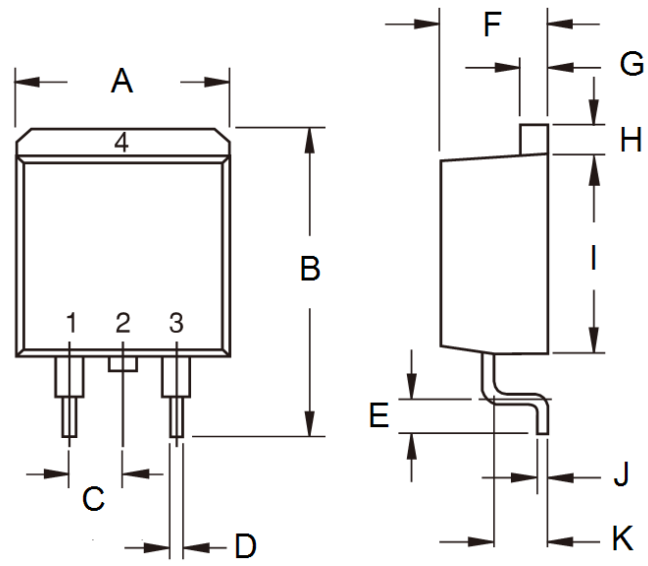


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



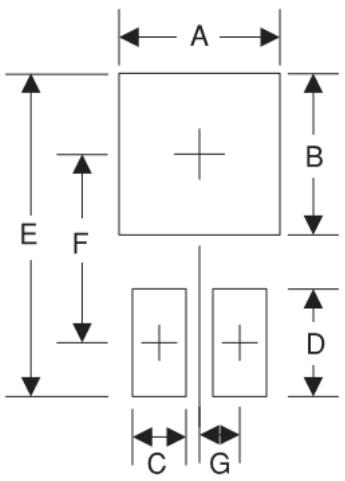
PACKAGE OUTLINE DIMENSIONS

TO-263AB (D^2PAK)



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

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	10.8	0.425
B	8.3	0.327
C	1.1	0.043
D	3.5	0.138
E	16.9	0.665
F	9.5	0.374
G	2.5	0.098

MARKING DIAGRAM

P/N	= Specific Device Code
G	= Green Compound
YWW	= Date Code
F	= Factory Code

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