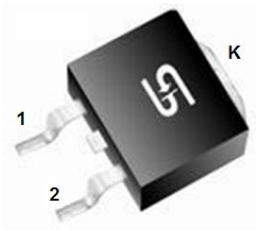
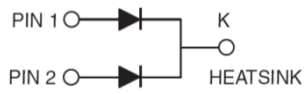
20A, 45V - 200V Dual Common Cathode Schottky Rectifiers

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 definition



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
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
Weight: 1.37 g (approximately)

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

PARAMETER	SYMBOL	MBRS 2045 CT-Y	MBRS 2060 CT-Y	MBRS 20100 CT-Y	MBRS 20150 CT-Y	MBRS 20200 CT-Y	Unit
Marking code		MBRS 2045CT	MBRS 2060CT	MBRS 20100CT	MBRS 20150CT	MBRS 20200CT	
Maximum repetitive peak reverse voltage	V_{RRM}	45	60	100	150	200	V
Maximum RMS voltage	V_{RMS}	31	42	70	105	140	V
Maximum DC blocking voltage	V_{DC}	45	60	100	150	200	V
Maximum average forward rectified current	$I_{F(AV)}$	20					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	0.5				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 0.60	0.80 0.70	0.85 0.75	0.99 0.87		V
Maximum reverse current @ rated VR T_J=25°C	I_R	0.1					mA
T_J=125°C		15	10	5			
Voltage rate of change (Rated V_R)	dV/dt	10000					V/μs
Typical thermal resistance	$R_{\theta JC}$	1.5		2			°C/W
Operating junction temperature range	T_J	- 55 to +150					°C
Storage temperature range	T_{STG}	- 55 to +150					°C

Note 1: tp = 2.0 μs, 1.0KHz

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

ORDER INFORMATION (EXAMPLE)

MBRS20100CT-Y RNG

- RNG → Green compound code
- RNG → Packing code
- MBRS20100CT-Y → Part no.

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

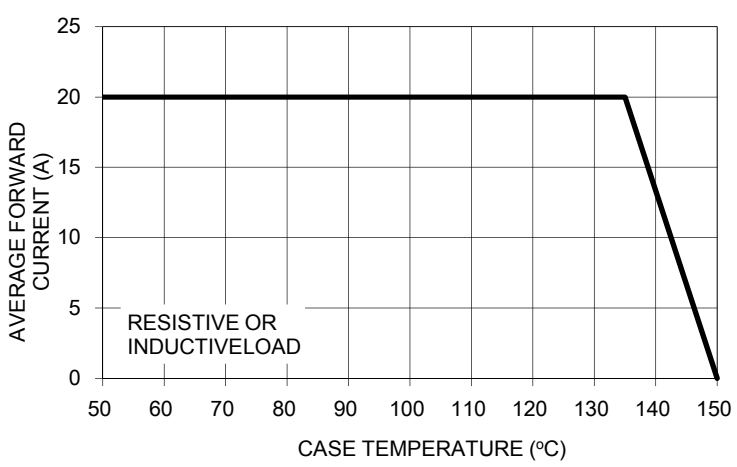


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

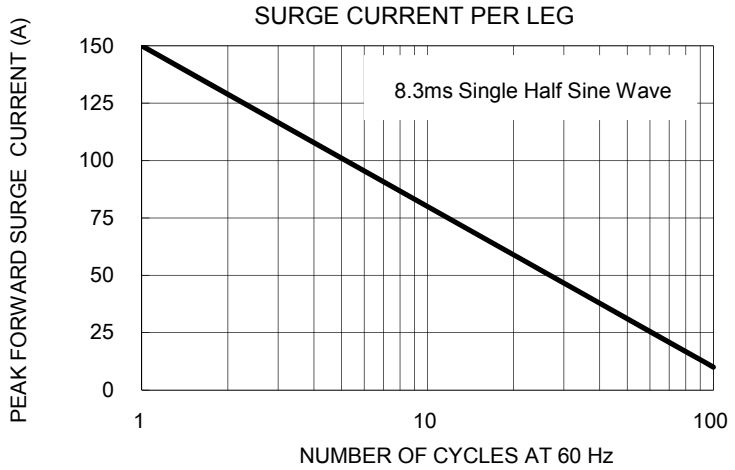


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

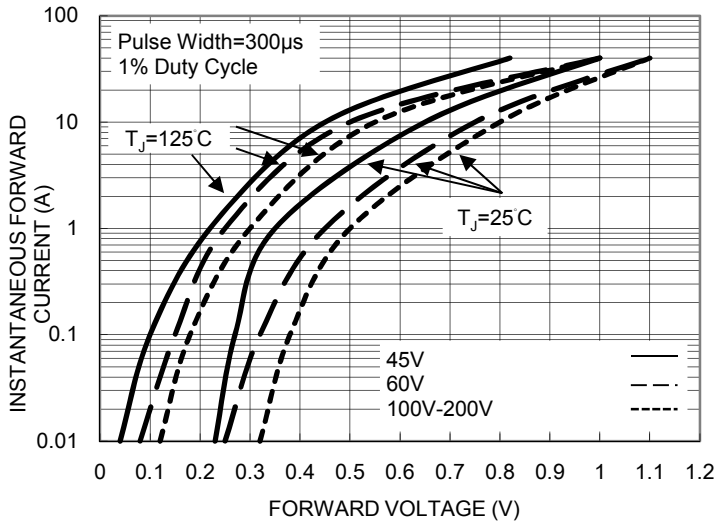


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

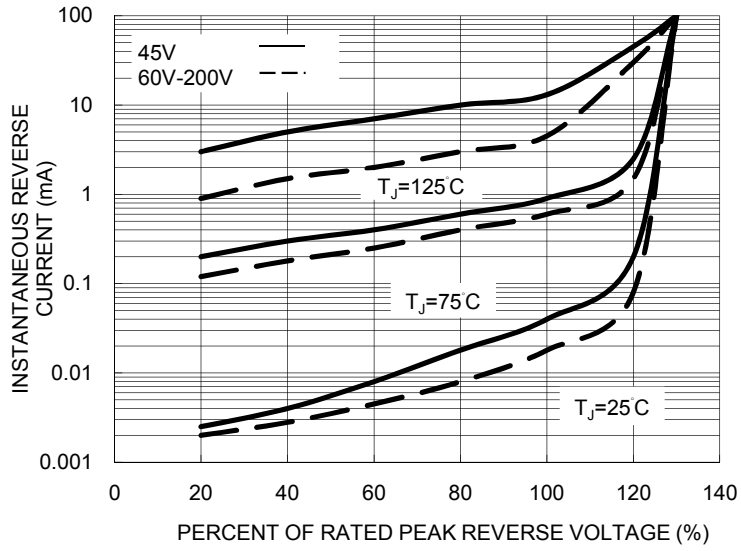


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

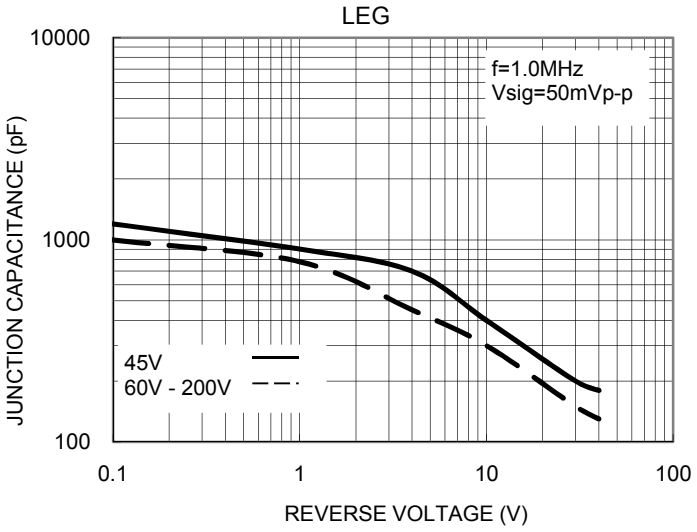
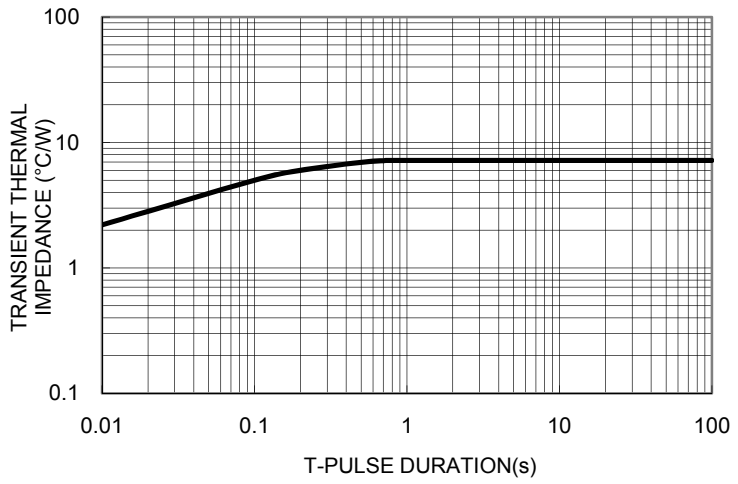
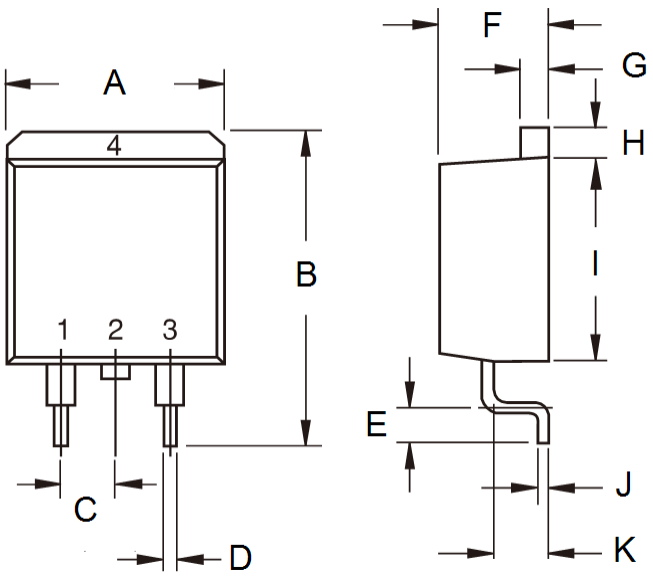


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



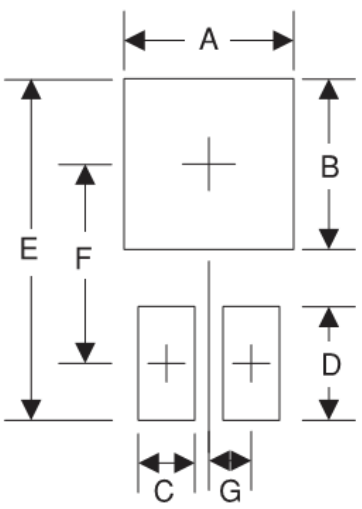
PACKAGE OUTLINE DIMENSIONS

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 = Marking Code
G = Green Compound
YWW = Date Code
F = Factory Code

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