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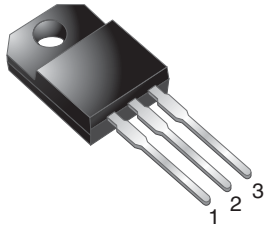
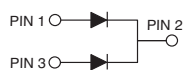
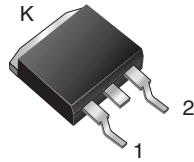
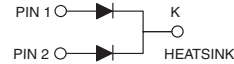
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Dual Common Cathode Schottky Rectifier

ITO-220AB

MBRF20xxCT

D²PAK (TO-263AB)

MBRB20xxCT


FEATURES

- Power pack
- Guardring for overvoltage protection
- Low power loss, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for D²PAK (TO-263AB) package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for ITO-220AB package)
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

DESIGN SUPPORT TOOLS

[click logo to get started](#)
3D
Models
Available

TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters, and polarity protection application.

MECHANICAL DATA

Case: ITO-220AB, D²PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating
 Base P/N-E3 - RoHS-compliant, commercial grade
 Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified
 Base P/NHE3_X - RoHS-compliant, AEC-Q101 qualified
 ("_X" denotes revision code, e.g. A, B, ...)

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 10 A
V_{RRM}	35 V, 45 V, 60 V
I_{FSM}	150 A
V_F	0.57 V, 0.70 V
T_J max.	150 °C
Package	ITO-220AB, D ² PAK (TO-263AB)
Circuit configuration	Common cathode

MAXIMUM RATINGS ($T_C = 25\text{ °C}$ unless otherwise noted)					
PARAMETER	SYMBOL	MBRB2035CT	MBRB2045CT	MBRB2060CT	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	35	45	60	V
Working peak reverse voltage	V_{RWM}	35	45	60	
Maximum DC blocking voltage	V_{DC}	35	45	60	
Maximum average forward rectified current at $T_C = 135\text{ °C}$ total device per diode	$I_{F(AV)}$	20			A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	150			
Peak repetitive reverse surge current per diode at $t_p = 2.0\ \mu\text{s}$, 1 kHz	I_{RRM}	1.0		0.5	
Voltage rate of change (rated V_R)	dV/dt	10 000			V/ μs
Operating junction temperature range	T_J	-65 to +150			°C
Storage temperature range	T_{STG}	-65 to +175			
Isolation voltage (ITO-220AB only) from terminal to heatsink t = 1 min	V_{AC}	1500			V



ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	TEST CONDITIONS		MBRB2035CT, MBRB2045CT	MBRB2060CT	UNIT
Maximum instantaneous forward voltage per diode	V_F ⁽¹⁾	$I_F = 10\text{ A}$	$T_C = 25\text{ }^\circ\text{C}$	0.65	0.80	V
		$I_F = 10\text{ A}$	$T_C = 125\text{ }^\circ\text{C}$	0.57	0.70	
		$I_F = 20\text{ A}$	$T_C = 25\text{ }^\circ\text{C}$	0.84	0.95	
		$I_F = 20\text{ A}$	$T_C = 125\text{ }^\circ\text{C}$	0.72	0.85	
Maximum reverse current at DC blocking voltage per diode	I_R ⁽²⁾	Rated V_R	$T_C = 25\text{ }^\circ\text{C}$	0.1	0.15	mA
			$T_C = 125\text{ }^\circ\text{C}$	15	150	

Notes(1) Pulse test: 300 μs pulse width, 1 % duty cycle(2) Pulse test: pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MBRF	MBRB	UNIT
Typical resistance from junction to case per diode	$R_{\theta JC}$	5.0	2.0	$^\circ\text{C/W}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
ITO-220AB	MBRF2045CT-E3/45	1.99	45	50/tube	Tube
TO-263AB	MBRB2045CT-E3/45	1.35	45	50/tube	Tube
TO-263AB	MBRB2045CT-E3/81	1.35	81	800/reel	Tape and reel
ITO-220AB	MBRF2045CTHE3/45 ⁽¹⁾	1.99	45	50/tube	Tube
TO-263AB	MBRB2045CTHE3_A/P ⁽¹⁾⁽²⁾	1.35	P	50/tube	Tube
TO-263AB	MBRB2045CTHE3_A/I ⁽¹⁾⁽²⁾	1.35	I	800/reel	Tape and reel

Notes

(1) AEC-Q101 qualified

(2) 35 V device available in AEC-Q101 qualified D²PAK (TO-263AB) only



RATINGS AND CHARACTERISTICS CURVES ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)

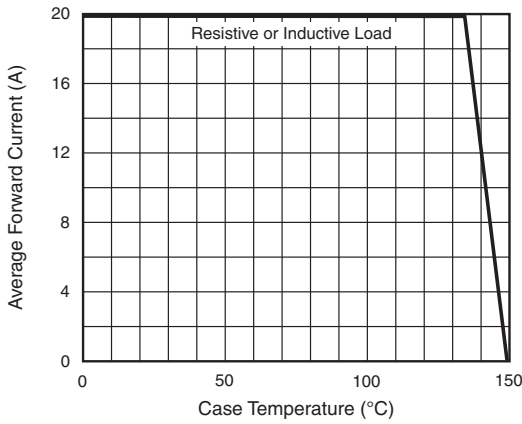


Fig. 1 - Forward Derating Curve (Total)

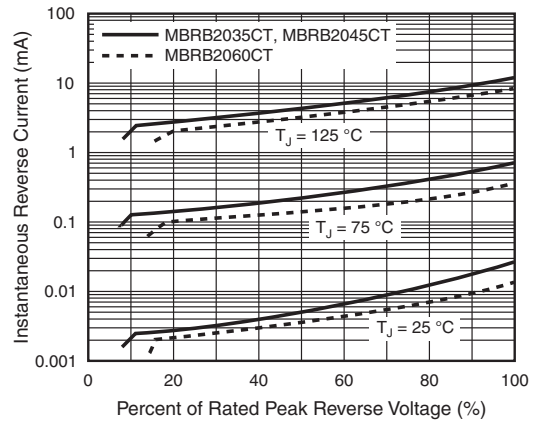


Fig. 4 - Typical Reverse Characteristics Per Diode

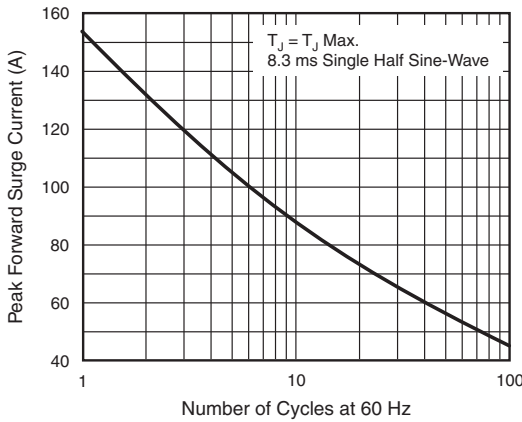


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

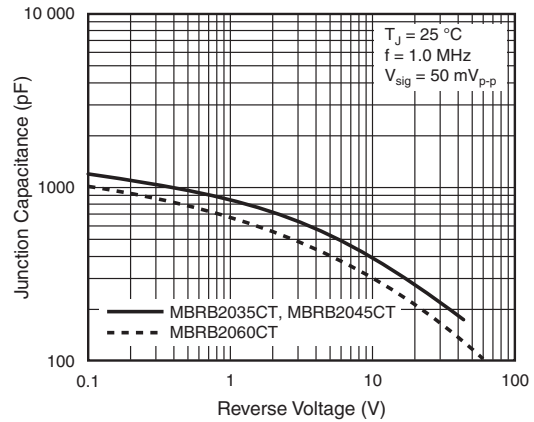


Fig. 5 - Typical Junction Capacitance Per Diode

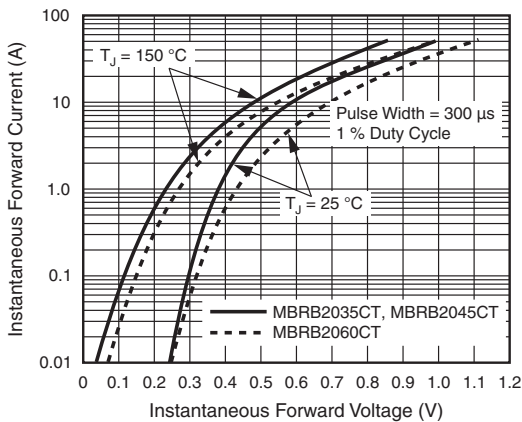


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

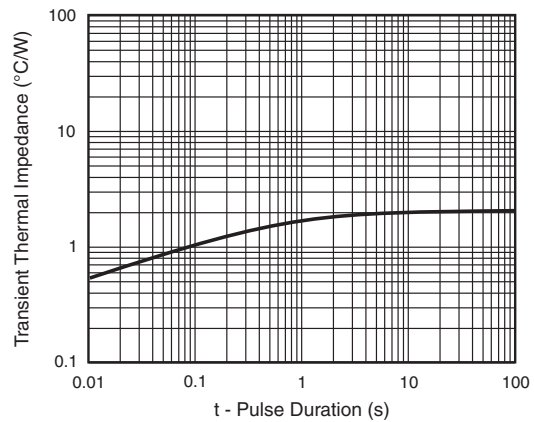
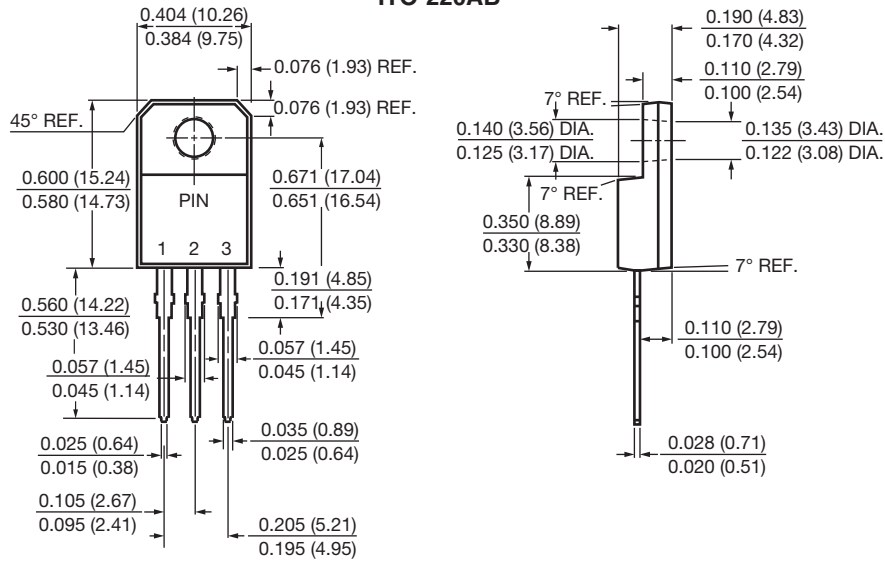


Fig. 6 - Typical Transient Thermal Impedance Per Diode

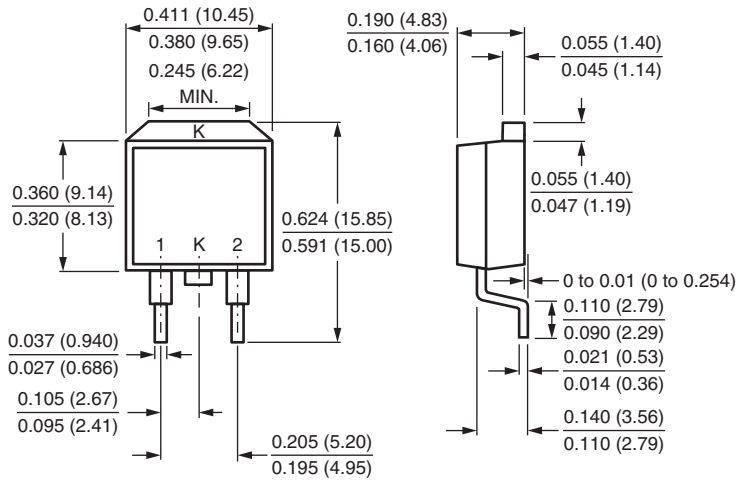


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

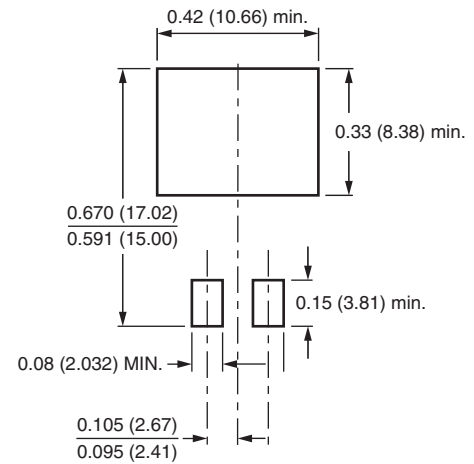
ITO-220AB



D²PAK (TO-263AB)



Mounting Pad Layout





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