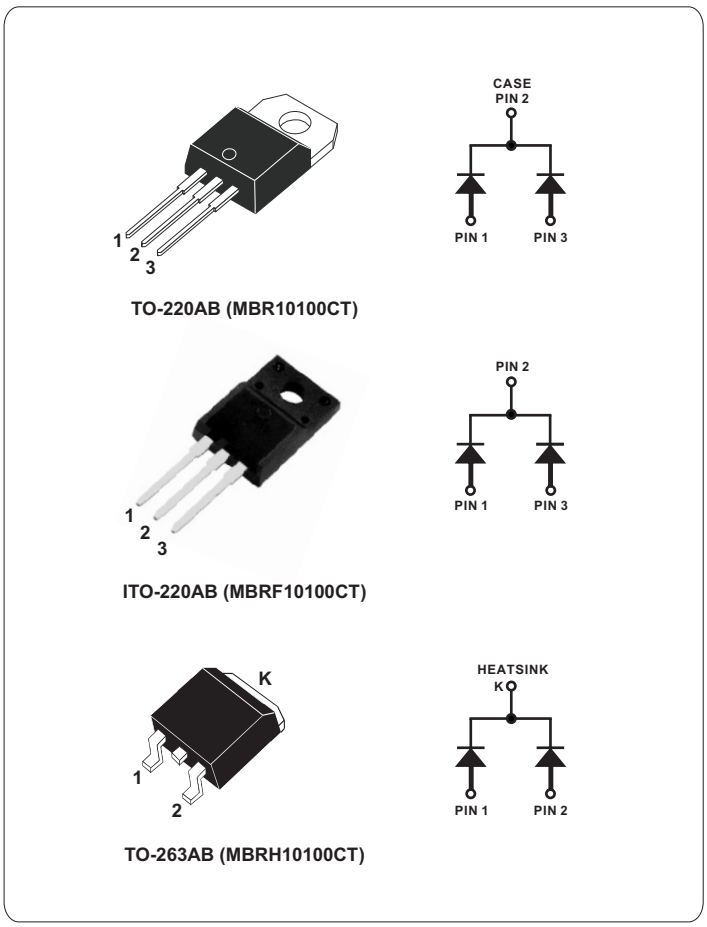
Dual Common Cathode High-Voltage Schottky Rectifier 10A/100V (5Ax2)

Pb Available RoHS* COMPLIANT

FEATURES

- 150°C T_J operation
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Guard ring for enhanced ruggedness, long term reliability and overvoltage protection
- Solder bath temperature 260°C maximum, 40s, per JESD 22-B106 (for TO-220AC and ITO-220AC package)
- Compliant to RoHS



TYPICAL APPLICATIONS

- Switching mode power supply
- DC-to-DC converters
- Freewheeling diodes
- Polarity protection.

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, TO-263AB
Molding compound meets UL 94 V-O flammability rating

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

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERRISTICS	
$I_{F(AV)}$	5A x 2
V_{RRM}	100V
I_{FSM}	120A
V_F	0.75V
$T_{J\,max.}$	150ºC

MAJOR RATINGS AND CHARACTERISTICS (T_C = 25°C unless otherwise noted)				
PARAMETER		**SYMBOL**	**VALUE**	**UNIT**
Maximum repetitive peak reverse voltage		V_{RRM}	100	V
Working peak reverse voltage		V_{RWM}	100	V
Maximum DC blocking voltage		V_{DC}	100	V
Maximum average forward rectified output current at T_c = 105°C	per device	$I_{F(AV)}$	10	A
	per diode		5	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load		I_{FSM}	120	A
Non-repetitive avalanche energy at T_J= 25°C, L = 40 mH, I_{AS} = 0.5A		E_{AS}	6	mJ
Peak repetitive reverse current at t_p = 2µs, 1 kHz, T_J = 38°C ± 2°C		I_{RRM}	0.5	A
Voltage rate of change (rated V_R)		dV/dt	10000	V/µs
Isolation voltage (ITO-220AC only) From terminal to heatsink t = 1 min		V_{AC}	1500	V
Operating junction storage temperature range		T_J,T_{STG}	-65 to +150	ºC

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)					
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**VALUE**	**UNIT**
Maximum instantaneous forward voltage (1)	I_F = 5A	T_C = 25°C	V_F	0.85	V
	I_F = 5A	T_C = 125°C		0.75	
Maximum reverse current at working peak reverse voltage(2)		T_J = 25°C	I_R	100	μA
		T_J = 100°C		6	mA

Notes

(1) Pulse test : 300μs pulse width, 1% duty cycle

(2) Pulse test : Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)					
PARAMETER	**SYMBOL**	**MBR10100CT**	**MBRF10100CT**	**MBRH10100CT**	**UNIT**
Typical thermal resistance (junction-ambient)	$R_{\theta JA}$	60	-	60	°C/W
Typical thermal resistance (junction-case)	$R_{\theta JC}$	4.4	7.5	4.4	
Approximate weight		2	2.5	2	g

Ordering Information Table

Device code

MBR	F	10	100	CT
①	②	③	④	⑤

1 - Schottky MBR series

2 - Package outline, none for TO-220AB
"F" for ITO-220AB (TO-220F)
"H" for TO-263AB (D^2PAK)

3 - Current rating, 10 = 10A, 5Ax2

4 - Voltage rating, 100 = 100V

5 - Circuit configuration, Center tap common Cathode, TO-220 series package

BATINGS AND CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward current derating curve

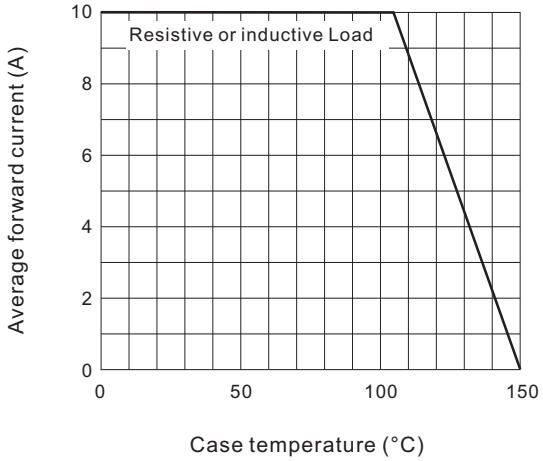


Fig.2 Maximum non-repetitive peak forward surge current per diode

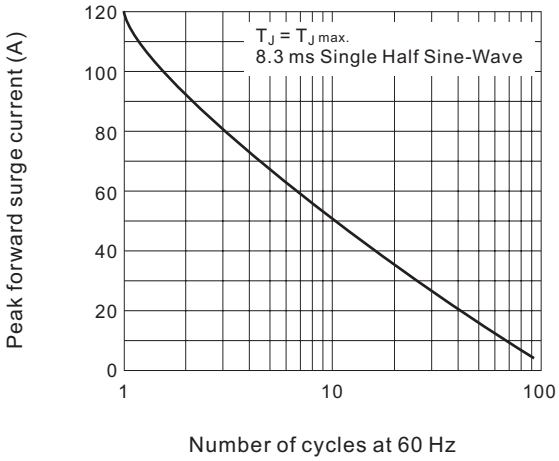


Fig.3 Typical instantaneous forward characteristics per diode

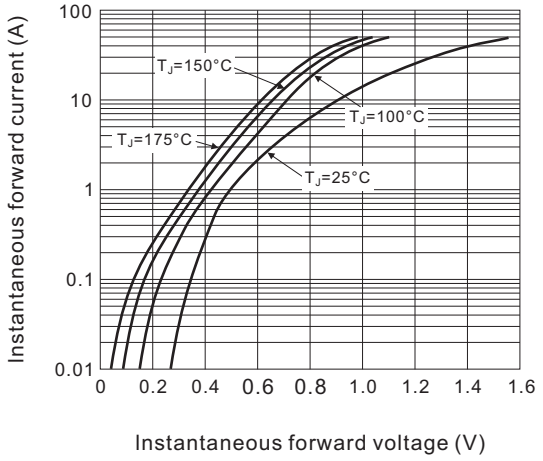


Fig.4 Typical reverse characteristics per diode

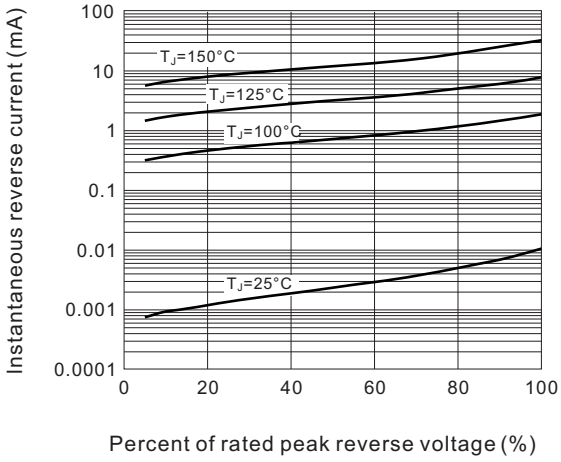


Fig.5 Typical transient Impedance per diode

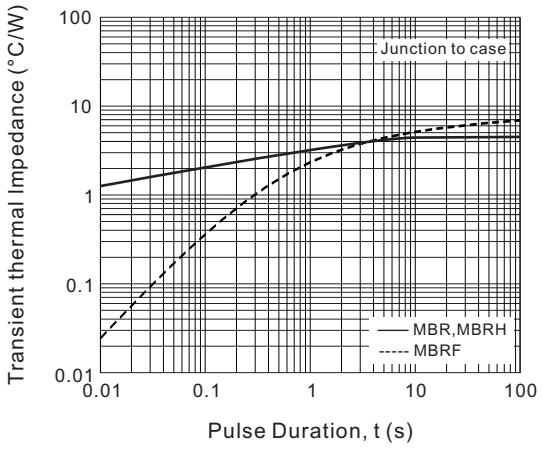
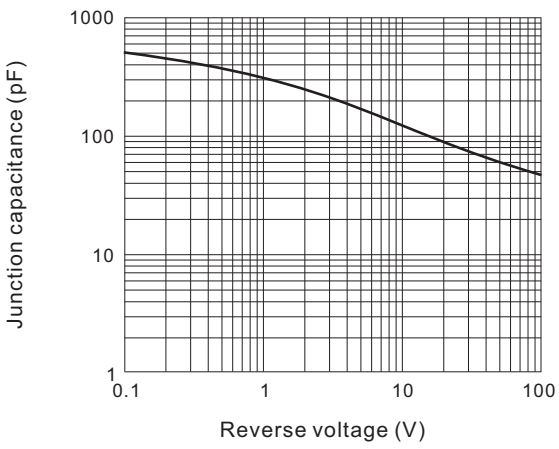
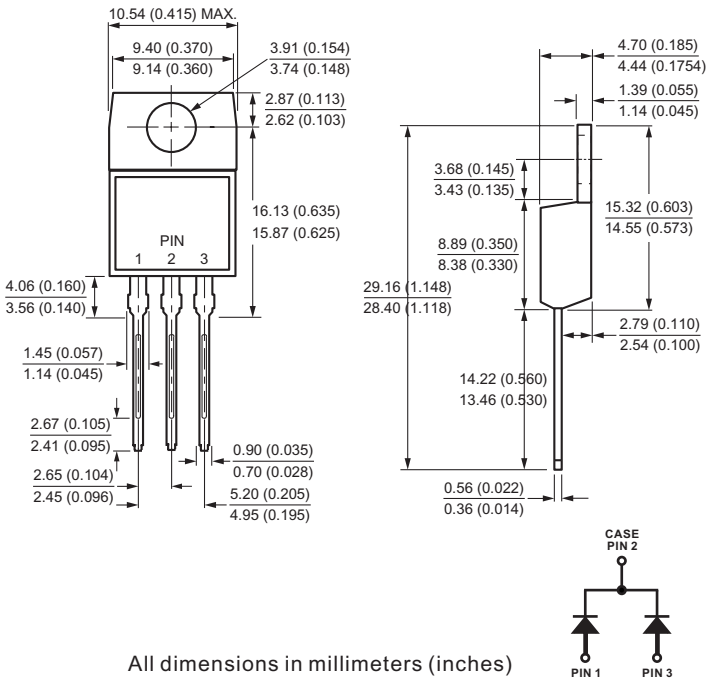


Fig.6 Typical junction capacitance per diode

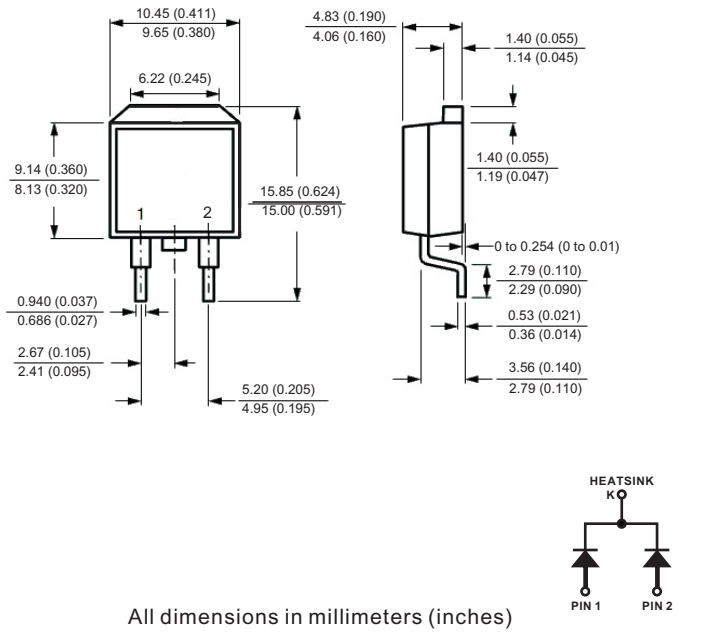


TO-220AB(MBR10100CT)



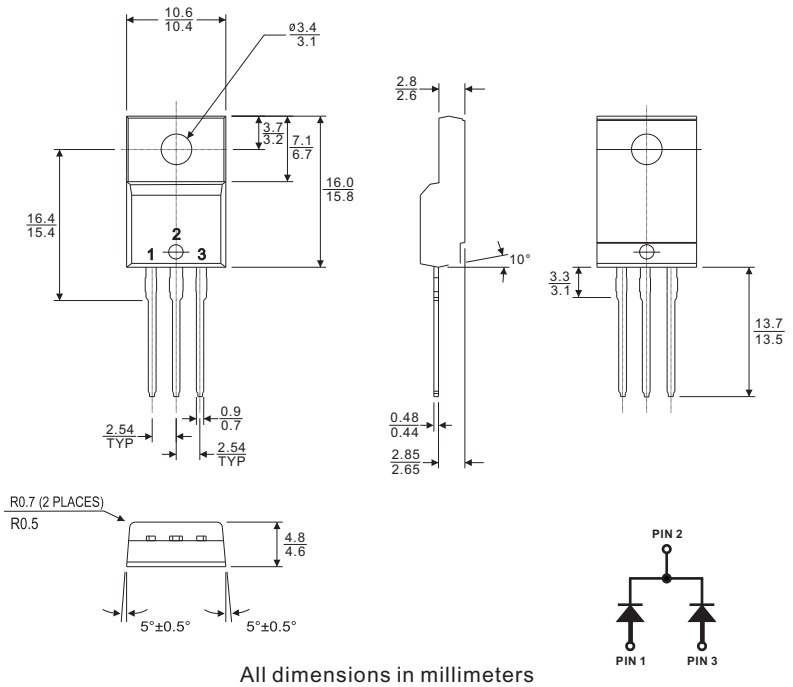
All dimensions in millimeters (inches)

TO-263AB(MBRH10100CT)



All dimensions in millimeters (inches)

ITO-220AB(MBRF10100CT)



All dimensions in millimeters