

High-Voltage Schottky Rectifier, 10A/100V



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 and long term reliability
- Solder bath temperature 275°C maximum, 10s, 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.

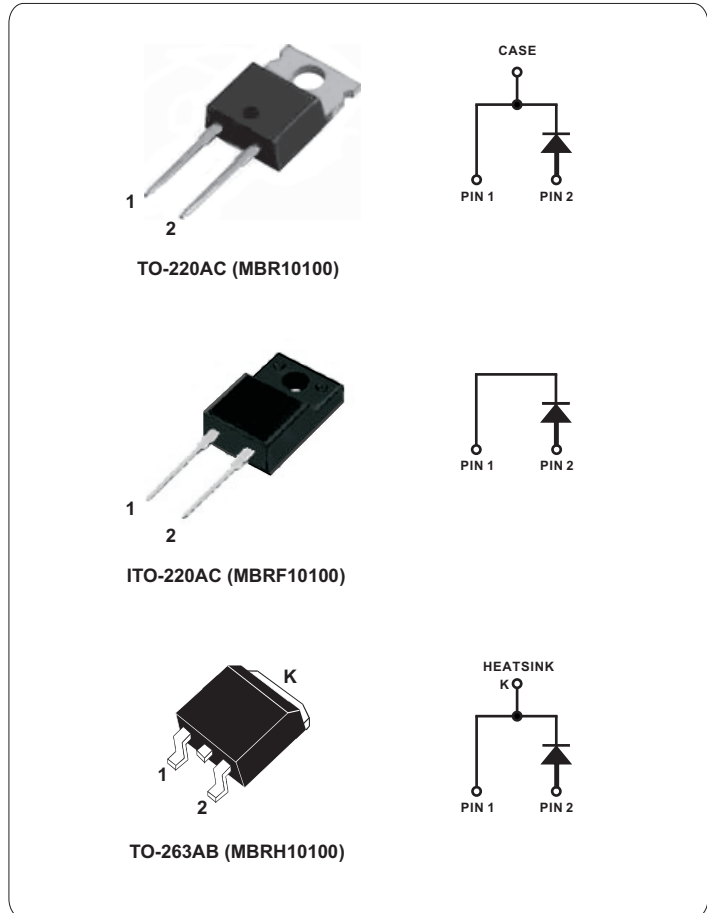
MECHANICAL DATA

Case: TO-220AC, ITO-220AC, 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 CHARACTERISTICS	
I _{F(AV)}	10A
V _{RRM}	100V
I _{FSM}	150A
V _F	0.65V
T _{Jmax.}	150°C

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 = 133 C	I _{F(AV)}	10	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	150	A
Non-repetitive avalanche energy at T _J = 25°C, L = 60 mH	E _{AS}	130	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	°C

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	$I_F = 10\text{A}$	$T_C = 25^\circ\text{C}$	V_F	0.8	V
	$I_F = 10\text{A}$	$T_C = 125^\circ\text{C}$		0.65	
	$I_F = 20\text{A}$	$T_C = 125^\circ\text{C}$		0.75	
Maximum reverse current at working peak reverse voltage ⁽²⁾			I_R	100	μA
				6	mA

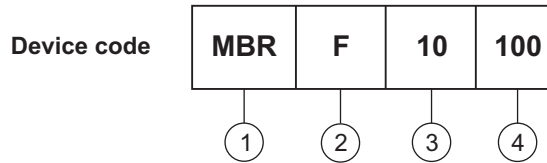
Notes

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

(2) Pulse test : Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	MBR	MBRFX	MBRHXX	UNIT
Typical thermal resistance (junction-ambient)	$R_{\theta JA}$	60	-	60	$^\circ\text{C/W}$
Typical thermal resistance (junction-case)	$R_{\theta JC}$	2	3.5	2	
Approximate weight		2	2.5	2	g

Ordering Information Table



- ① - Schottky MBR series
- ② - Package outline, none for TO-220AC
"F" for ITO-220AC (TO-220F)
"H" for TO-263AB (D²PAK)
- ③ - Current rating, 10 = 10A
- ④ - Voltage rating, 100 = 100V

Fig.1 Forward current derating curve

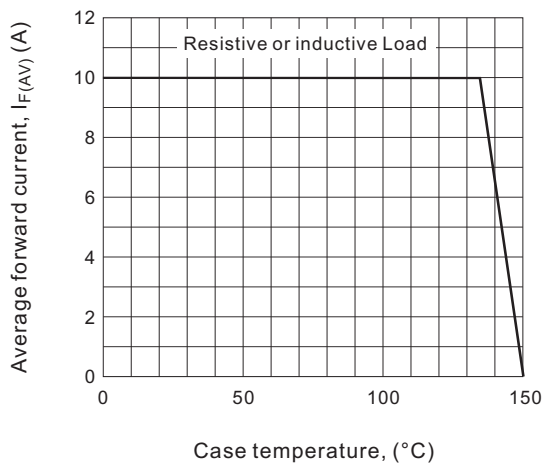


Fig.2 Maximum non-repetitive peak forward surge current

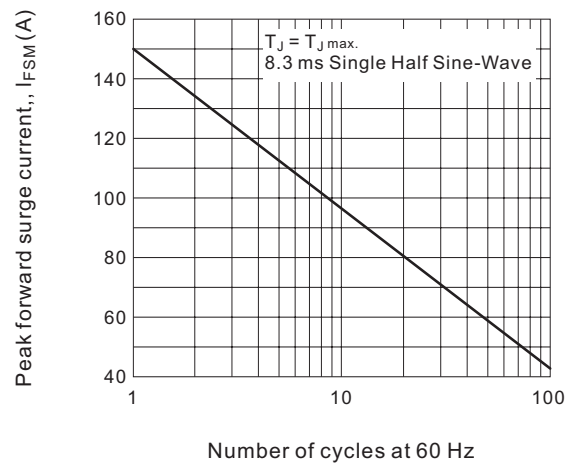


Fig.3 Typical instantaneous forward characteristics

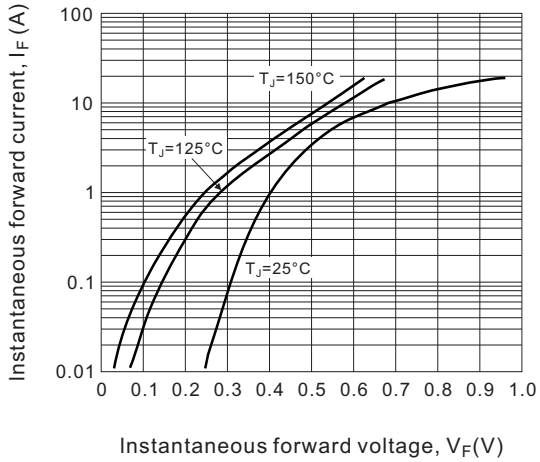


Fig.4 Typical reverse characteristics

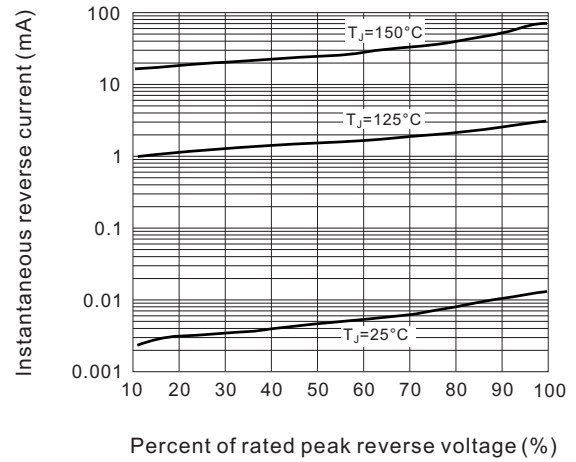


Fig.5 Typical junction capacitance

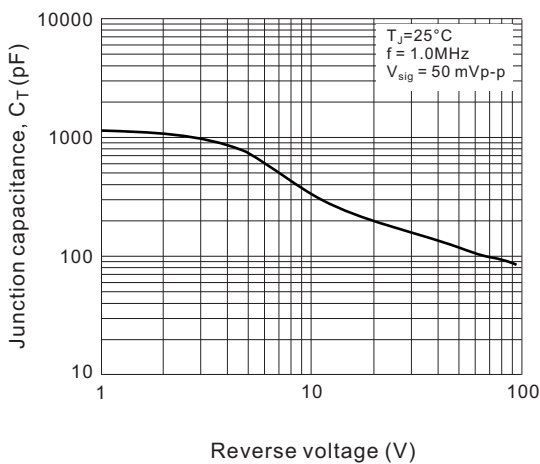


Fig.6 Typical transient thermal Impedance

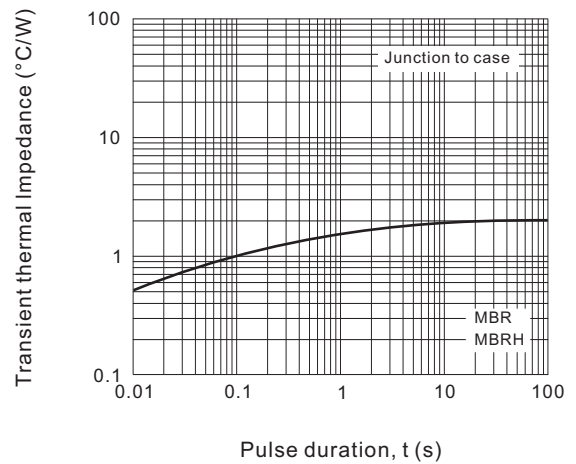
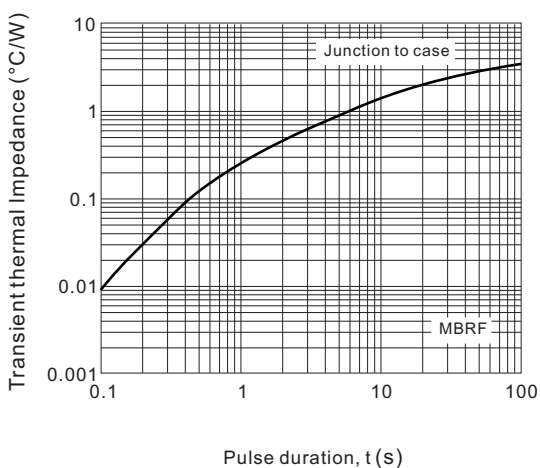
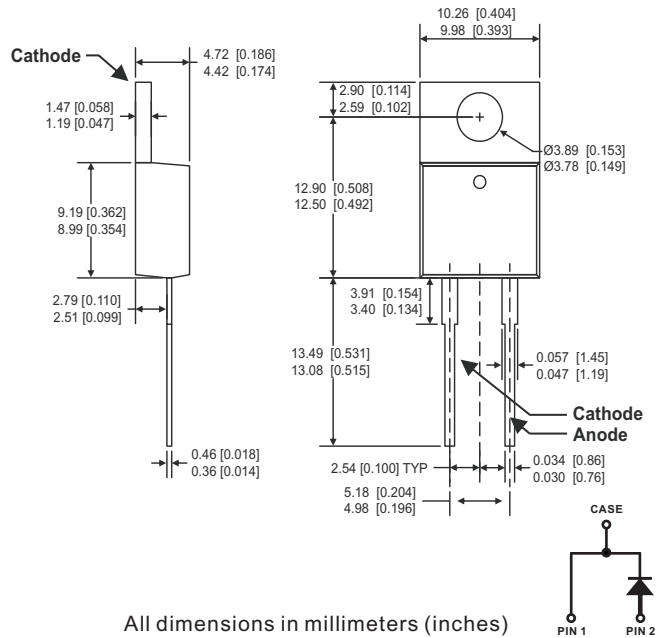


Fig.7 Typical transient thermal Impedance

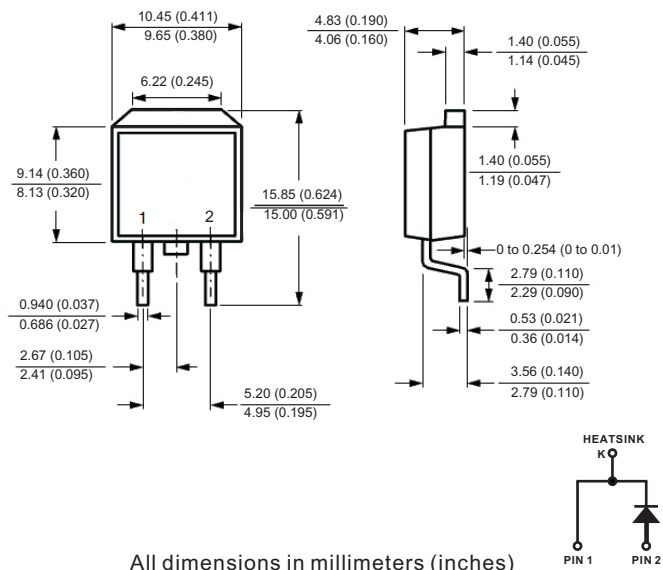


TO-220AC(MBR10100)



All dimensions in millimeters (inches)

TO-263AB(MBR10100H)



All dimensions in millimeters (inches)

