MBR1040BCT THRU MBR10200BCT

10A Surface Mount High Power Schottky Barrier Rectifiers

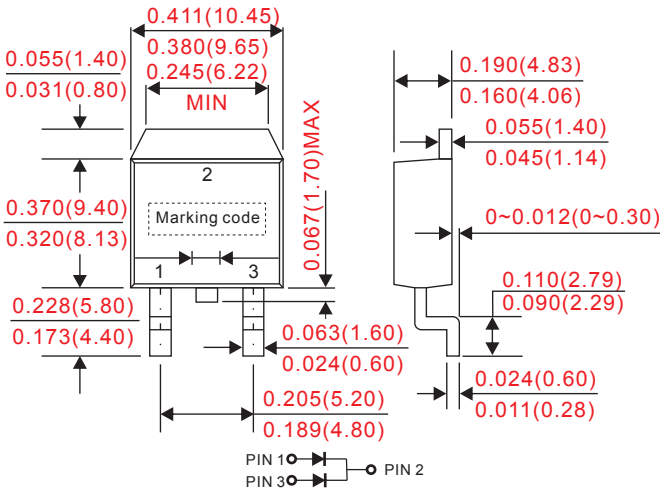
RoHS COMPLIANT

■ Features

- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- High surge capability.
- Guardring for overvoltage protection.
- Ultra high-speed switching.
- Silicon epitaxial planar chip, metal silicon junction.
- Suffix "H" indicates Halogen-free part, ex.MBR1040BCTH. Lead-free parts meet environmental standards of MIL-STD-19500 /228

■ Outline

D^2PAK(TO-263)



Dimensions in inches and (millimeters)

■ Mechanical data

- Epoxy : UL94-V0 rated flame retardant.
- Case : Molded plastic, TO-263 / D^2PAK
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Indicated by cathode band.
- Mounting Position : Any.
- Weight : Approximated 1.70 gram.

■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Conditions	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.1	I_O			10	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method)	I_{FSM}			125	A
Reverse current	$V_R = V_{RRM}$ $T_A = 25°C$	I_R			0.1	mA
	$V_R = V_{RRM}$ $T_A = 125°C$				10	
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		150		pF
Thermal resistance	Junction to ambient	$R_{\theta JA}$		30		°C/W
Storage temperature		T_{STG}	-55		+175	°C

Symbol	Marking code	Max. repetitive peak reverse voltage V_{RRM} (V)	Max. RMS voltage V_{RMS} (V)	Max. DC blocking voltage V_R (V)	Max. forward voltage @5A, $T_A = 25°C$ V_F (V)	Max. forward voltage @5A, $T_A = 125°C$ V_F (V)	Operating temperature T_J (°C)
MBR1040BCT	MBR1040BCT	40	28	40	0.70	0.57	-55 ~ +150
MBR1045BCT	MBR1045BCT	45	31.5	45			
MBR1060BCT	MBR1060BCT	60	42	60	0.79	0.70	
MBR1065BCT	MBR1065BCT	65	45.5	65			
MBR10100BCT	MBR10100BCT	100	70	100	0.81	0.71	
MBR10150BCT	MBR10150BCT	150	105	150	0.87	0.77	-55 ~ +175
MBR10200BCT	MBR10200BCT	200	140	200	0.90	0.80	

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■ Rating and characteristic curves

Fig.1 - Forward Current Derating Curve

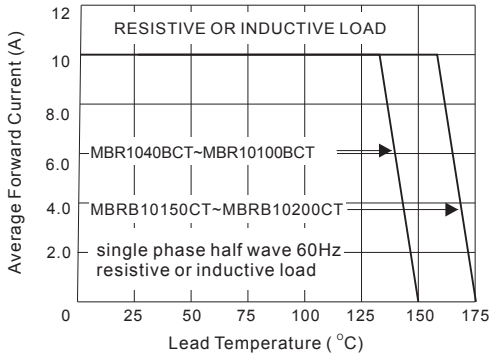


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

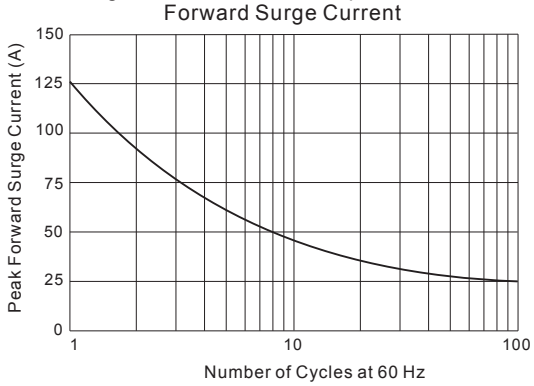


Fig. 3.1 - Typical Instantaneous Forward Characteristics

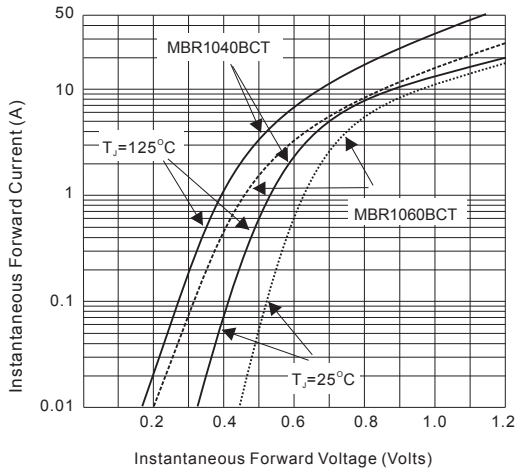


Fig. 3.2 - Typical Instantaneous Forward Characteristics

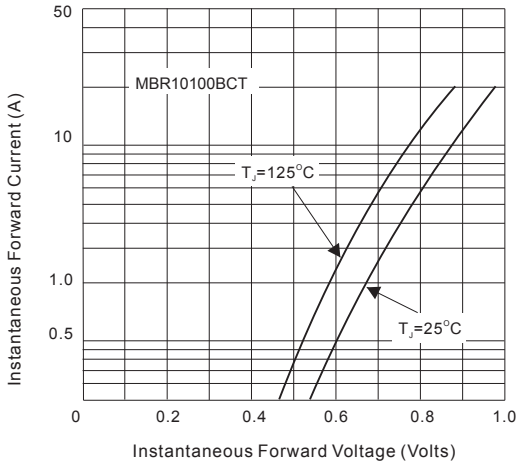


Fig. 3.3 - Typical Instantaneous Forward Characteristics

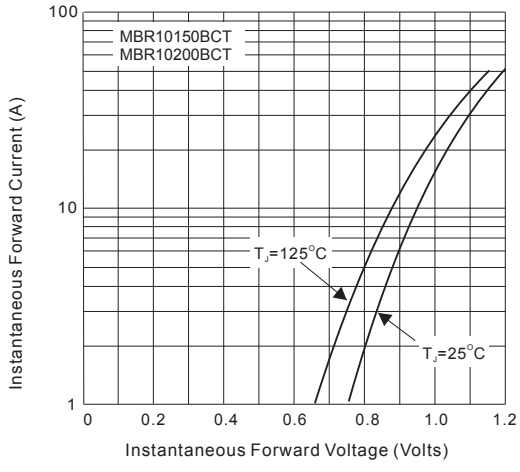
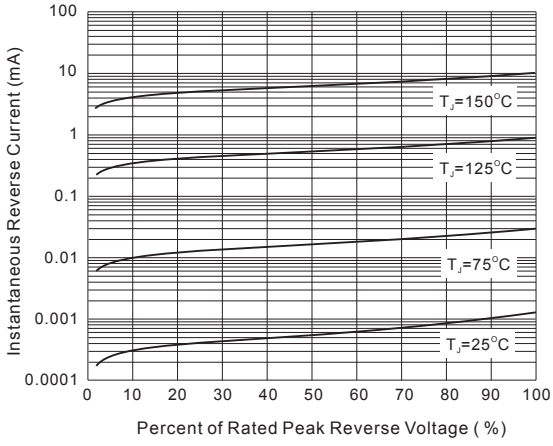
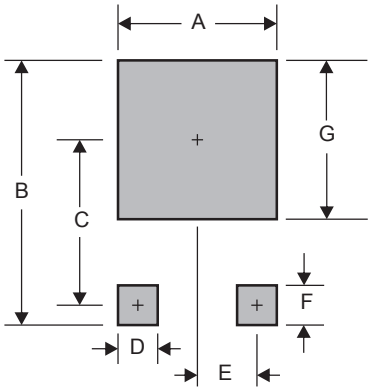


Fig. 4 - Typical Reverse Characteristics



■ D^2PAK(TO-263) foot print



A	B	C	D	E	F	G
0.425 (10.80)	0.665 (16.90)	0.374 (9.50)	0.071 (1.80)	0.098 (2.50)	0.138 (3.50)	0.449 (11.40)

Dimensions in inches and (millimeters)