

■ Features

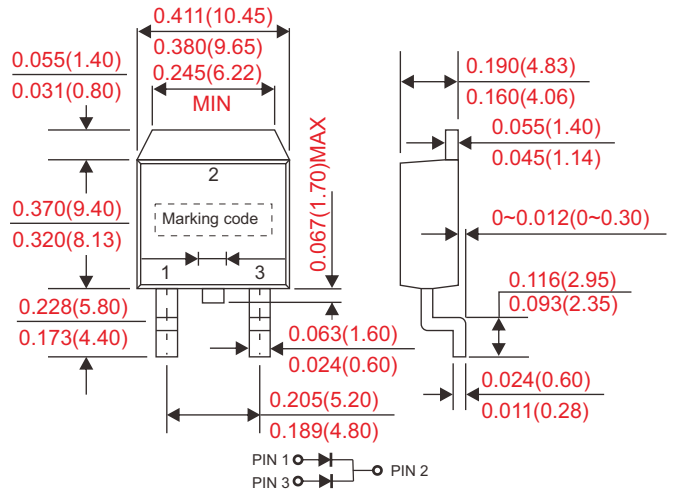
- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- High surge capability.
- Guardring for overvoltage protection.
- Ultra high-speed switching.
- Silicon epitaxial planar chip, metal silicon junction.
- Suffix "G" indicates Halogen-free part, ex. MBRB2040CTG.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

■ Mechanical data

- Epoxy : UL94-V0 rated flame retardant.
- Case : Molded plastic, TO-263 / D²PAK
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Indicated by cathode band.
- Mounting Position : Any.
- Weight : Approximated 1.70 gram.

■ Outline

D²PAK(TO-263)



Dimensions in inches and (millimeters)

■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified.

■ Circuit Diagram



Parameter	Conditions	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.1	I_O			20	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method)	I_{FSM}			150	A
Reverse current	$V_R = V_{RRM}$ $T_A = 25^\circ\text{C}$	I_R			0.1	mA
	$V_R = V_{RRM}$ $T_A = 125^\circ\text{C}$, $V_R < 100\text{V}$				20	
	$V_R = V_{RRM}$ $T_A = 125^\circ\text{C}$, $V_R \geq 100\text{V}$				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		+150	°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 @10A, $T_A = 25^\circ\text{C}$ V_F (V)	Operating Junction temperature T_J (°C)
MBRB2040CT	MBRB2040CT	40	28	40	0.70	-55 ~ +150
MBRB2045CT	MBRB2045CT	45	31.5	45		
MBRB2060CT	MBRB2060CT	60	42	60	0.79	
MBRB2065CT	MBRB2065CT	65	45.5	65		
MBRB20100CT	MBRB20100CT	100	70	100	0.85	-55 ~ +175
MBRB20150CT	MBRB20150CT	150	105	150	0.87	
MBRB20200CT	MBRB20200CT	200	140	200	0.90	

■ Rating and characteristic curves

Fig.1 - Forward Current Derating Curve

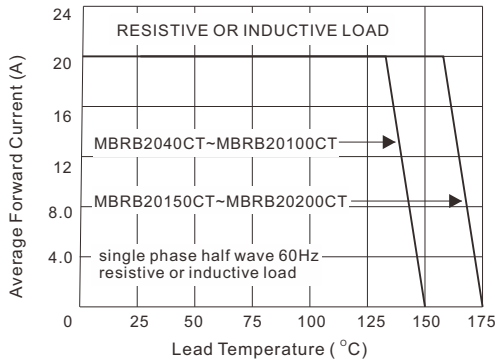


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

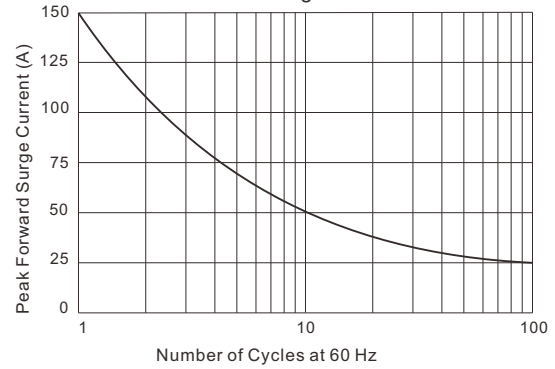


Fig. 3.1 - Typical Instantaneous Forward Characteristics

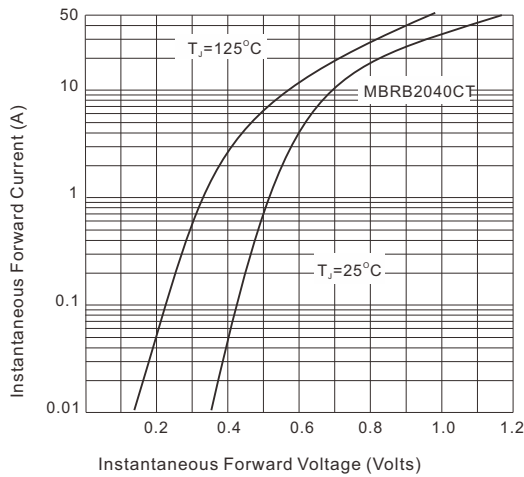


Fig. 3.2 - Typical Instantaneous Forward Characteristics

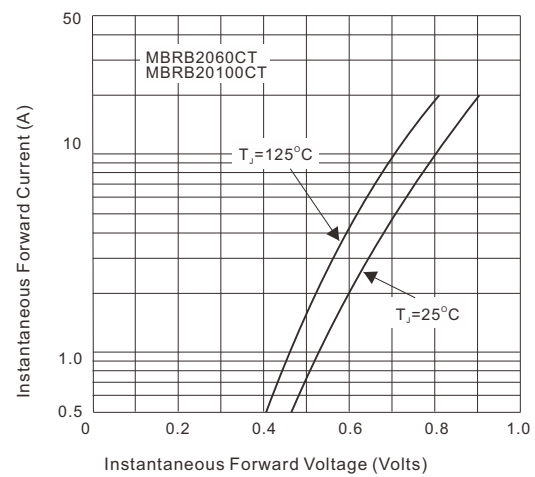


Fig. 3.3 - Typical Instantaneous Forward Characteristics

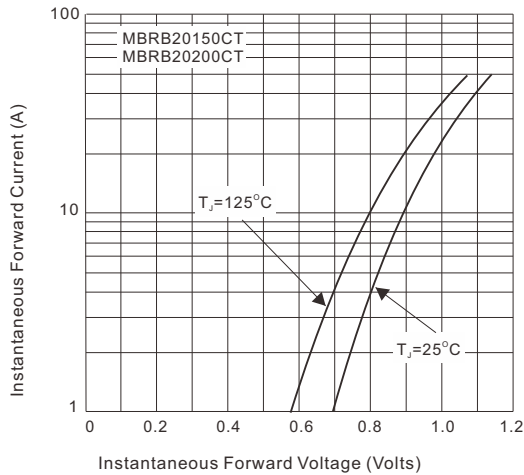
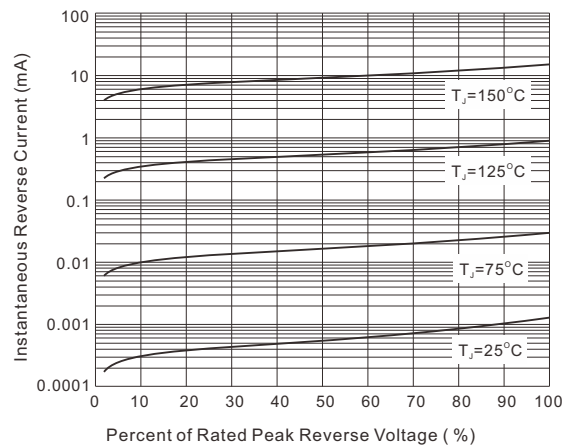
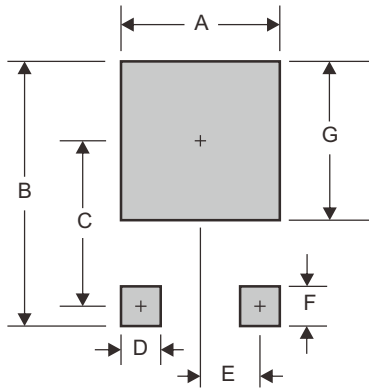


Fig. 4 - Typical Reverse Characteristics



■ D²PAK(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)

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