

■ 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. MBRF1040CTG.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

■ Mechanical data

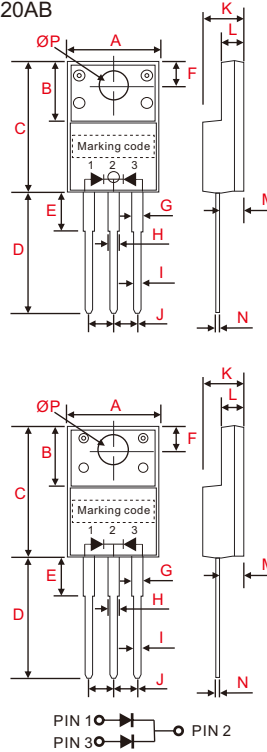
- Epoxy : UL94-V0 rated flame retardant.
- Case : JEDEC ITO-220AB molded plastic body.
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026.
- Polarity: As marked.
- Mounting Position : Any.
- Weight : Approximated 2.25 gram.

■ 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%.

■ Outline

ITO-220AB



symbol	Dimensions in inches(millimeters)	
	Min	Max
A	0.390(9.9)	0.408(10.36)
B	0.268(6.8)	0.283(7.2)
C	0.583(14.8)	0.598(15.2)
D	0.512(13.0)	0.543(13.8)
E	0.102(2.6)	0.150(3.8)
F	0.101(2.55)	0.112(2.85)
G	0.043(1.1)	0.053(1.35)
H	0.043(1.1)	0.053(1.35)
I	0.020(0.5)	0.028(0.7)
J	0.098(2.49)	0.102(2.59)
K	0.169(4.3)	0.185(4.7)
L	0.112(2.85)	0.128(3.25)
M	0.098(2.5)	0.114(2.9)
N	0.020(0.5)	0.028(0.7)
ØP	0.130(3.3)	0.134(3.5)

Alternate

symbol	Dimensions in inches(millimeters)	
	Min	Max
A	0.383(9.72)	0.404(10.27)
B	0.248(6.3)	0.272(6.9)
C	0.571(14.5)	0.610(15.5)
D	0.516(13.1)	0.547(13.9)
E	-	0.161(4.1)
F	0.094(2.4)	0.126(3.2)
G	0.039(1.0)	0.051(1.3)
H	0.039(1.0)	0.051(1.3)
I	0.020(0.5)	0.035(0.9)
J	0.095(2.41)	0.105(2.67)
K	0.169(4.3)	0.189(4.8)
L	0.055(1.4)	0.122(3.1)
M	0.091(2.3)	0.117(2.96)
N	0.014(0.35)	0.031(0.8)
ØP	0.122(3.1)	0.142(3.6)

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	$V_R = V_{RRM}$ $T_A = 25^\circ\text{C}$	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		$^\circ\text{C/W}$
Storage temperature		T_{STG}	-55		+150	$^\circ\text{C}$

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, $T_A = 25^\circ\text{C}$ V_F (V)	Operating Junction temperature T_J ($^\circ\text{C}$)
MBRF1040CT	MBRF1040CT	40	28	40	0.70	-55 ~ +150
MBRF1045CT	MBRF1045CT	45	31.5	45		
MBRF1060CT	MBRF1060CT	60	42	60		
MBRF1065CT	MBRF1065CT	65	45.5	65	0.79	
MBRF10100CT	MBRF10100CT	100	70	100		
MBRF10150CT	MBRF10150CT	150	105	150	0.87	-55 ~ +175
MBRF10200CT	MBRF10200CT	200	140	200		

■ Rating and characteristic curves

Fig.1 - Forward Current Derating Curve

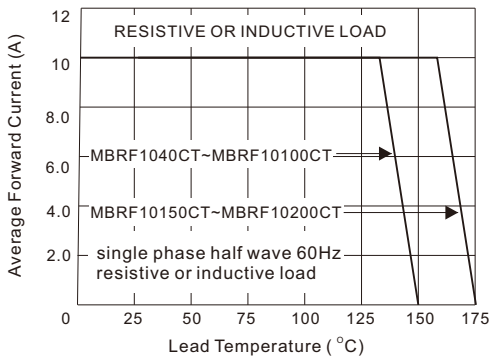


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

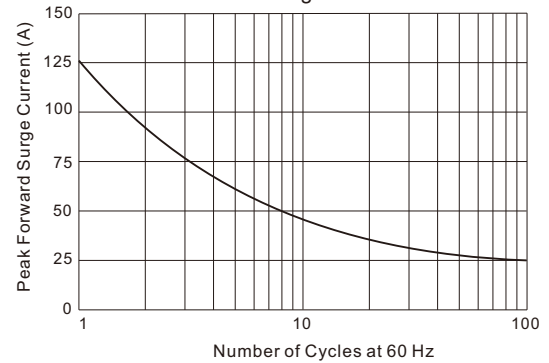


Fig. 3.1 - Instantaneous Forward Characteristics

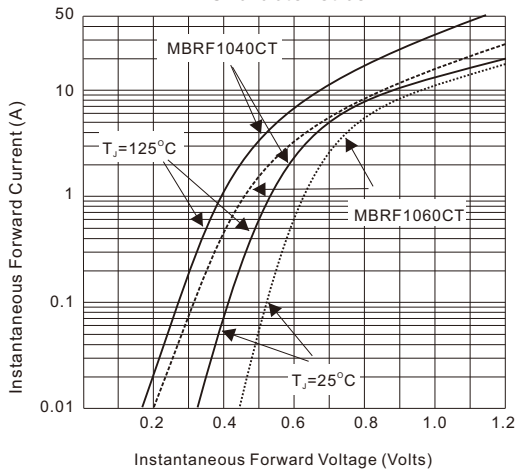


Fig. 3.2 - Instantaneous Forward Characteristics

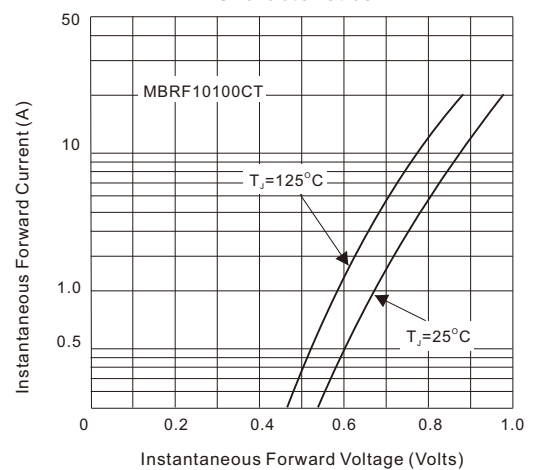


Fig. 3.3 - Instantaneous Forward Characteristics

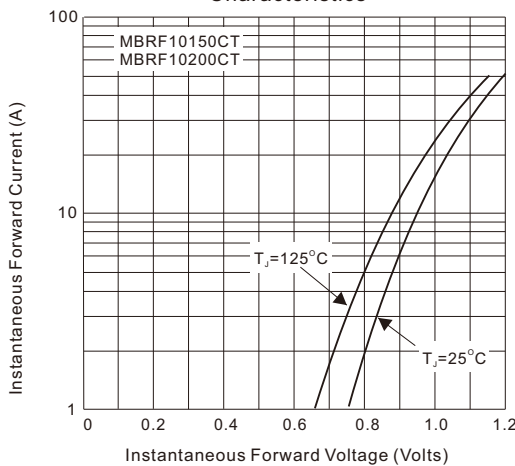
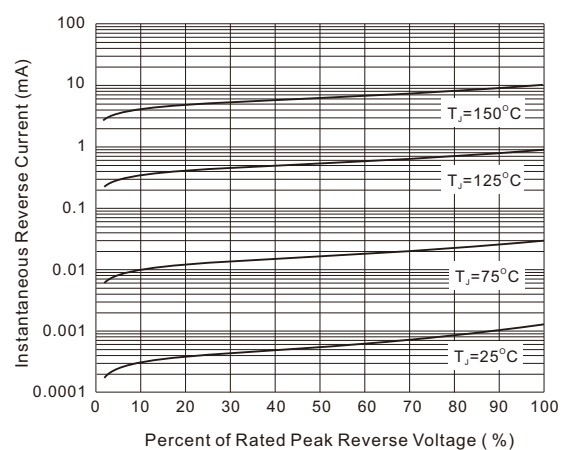


Fig. 4 - Reverse Characteristics



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