

Main Product Characteristics

$I_{F(AV)}$	10A x 2
V_{RRM}	45V
T_J	150°C
$V_{F(TYP)}$	0.53V

Features

- Low forward voltage drop.
- Excellent high temperature stability.
- Fast switching capability.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

Mechanical Data

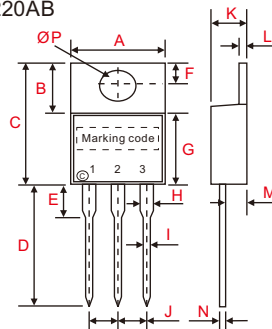
- Epoxy : UL94-V0 rated flame retardant.
- Case : JEDEC ITO-220AB molded plastic body.
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : As marked.
- Weight : Approximated 2.25 gram.

Maximum Ratings

Rating at 25°C ambient temperature unless otherwise specified.

Outline

TO-220AB



symbol	Dimensions in inches(millimeters)	
	Min	Max
A	0.398(10.1)	0.406(10.3)
B	0.236(6.0)	0.252(6.4)
C	0.579(14.7)	0.594(15.1)
D	0.543(13.8)	0.551(14.0)
E	0.143(3.63)	0.159(4.03)
F	0.104(2.64)	0.112(2.84)
G	0.335(8.5)	0.350(8.9)
H	0.046(1.17)	0.054(1.37)
I	0.028(0.71)	0.036(0.91)
J	0.098(2.49)	0.102(2.59)
K	0.176(4.47)	0.184(4.67)
L	0.046(1.17)	0.054(1.37)
M	0.102(2.6)	0.110(2.8)
N	0.019(0.28)	0.021(0.48)
ØP	0.147(3.74)	0.155(3.94)

Alternate

symbol	Dimensions in inches(millimeters)	
	Min	Max
A	0.394(10.0)	0.413(10.5)
B	0.228(5.8)	0.268(6.8)
C	0.570(14.48)	0.625(15.87)
D	0.519(13.18)	0.558(14.18)
E	0.089(3.5)	0.099(3.9)
F	0.100(2.54)	0.120(3.04)
G	0.330(8.38)	0.350(8.9)
H	0.045(1.15)	0.060(1.52)
I	0.029(0.75)	0.037(0.95)
J	0.095(2.42)	0.105(2.66)
K	0.160(4.07)	0.190(4.82)
L	0.045(1.15)	0.055(1.39)
M	0.080(2.04)	0.110(2.8)
N	0.013(0.33)	0.019(0.52)
ØP	0.148(3.75)	0.156(3.95)

Dimensions in inches and (millimeters)

Circuit Diagram



Parameter	Condition	Symbol	MBR2045CT-T	UNIT
Working Peak Reverse Voltage		V_{RWM}	45	V
Forward Rectified Current (total device)		I_O	20	A
Forward Surge Current (per diode)	8.3ms single half sine-wave superimposed on rate load (JEDEC method)	I_{FSM}	150	A
Peak Repetitive Reverse Surge Current (per diode)	Pulse width 2us, 1000Hz, square wave at T_A 25°C, 10 cycles	I_{RRM}	1	A
Thermal Resistance (per diode)	Junction to case	R_{BJC}	2	°C/W
	Junction to ambient	R_{BJA}	50	
Storage Temperature		T_{STG}	-55 ~ +150	°C
Operating Junction Temperature		T_J	-55 ~ +150	°C

Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Parameter	Condition	Symbol	MIN.	TYP.	MAX.	UNIT
Forward Voltage Drop (per diode)	$I_F = 3A, T_J = 25^\circ C$	V_F		440		mV
	$I_F = 10A, T_J = 25^\circ C$			560	620	
	$I_F = 10A, T_J = 125^\circ C$			530		
Reverse Current (per diode)	$V_R = V_{RWM}, T_J = 25^\circ C$	I_R		0.005	0.1	mA
	$V_R = V_{RWM}, T_J = 125^\circ C$			3	20	
Reverse Breakdown Voltage (per diode)	$I_R = 0.1mA, T_J = 25^\circ C$	V_{BR}	45			V

Rating and Characteristic Curves

Fig. 1 - Forward Characteristics

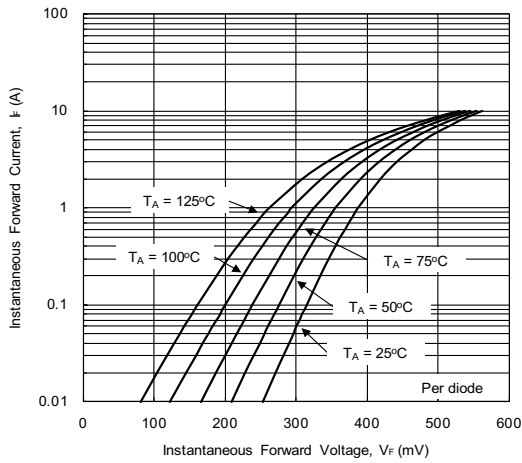


Fig. 2 - Reverse Characteristics

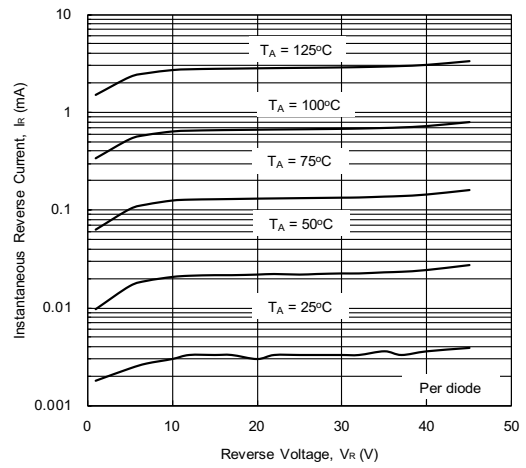


Fig. 3 - Forward Power Dissipation

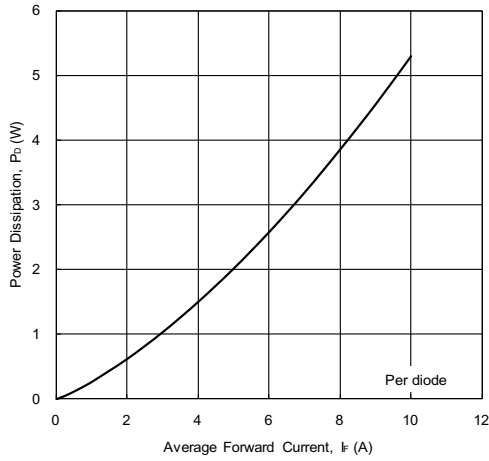


Fig. 4 - Forward Current Derating Curve

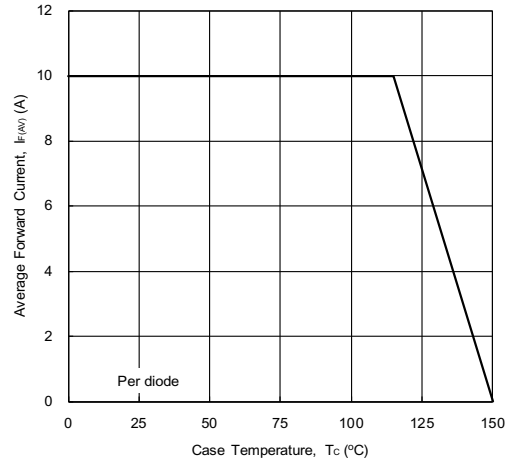
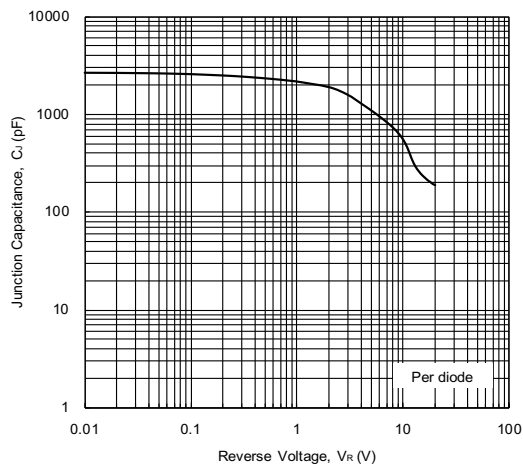
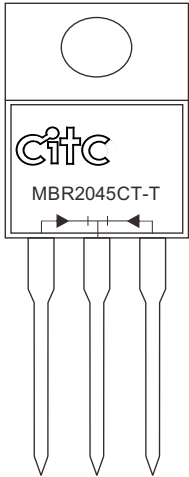



Fig. 5 - Junction Capacitance





■ Marking Information



MBR2045CT-T : Product type marking code

 : CITC Logo

■ Ordering / Packing Information

Part number		Case	Q'TY/Tube (PCS)	Q'TY/Box (PCS)	Q'TY/Carton (PCS)
 MBR2045CT-T	TO-220AB	50	1000	5000	
 MBR2045CTG-T					

Notes : 1. For packaging details please reference our website at <http://www.citcorp.com.tw/tchinese/products/index.php>

- CITC reserves the right to make changes to this document and its products and specifications at any time without notice.
- Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
- CITC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does CITC assume any liability for application assistance or customer product design.
- CITC does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.
- No license is granted by implication or otherwise under any intellectual property rights of CITC.
- CITC products are not authorized for use as critical components in life support devices or systems without express written approval of CITC.