

Main Product Characteristics

$I_{F(AV)}$	2 X 20A
V_{RRM}	45V
T_J	125°C
$V_{F(Typ)}$	0.425V

Features

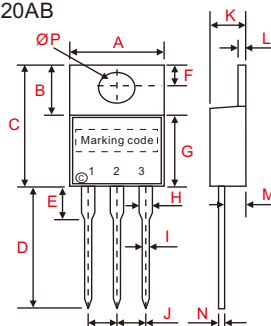
- Low forward voltage drop.
- Excellent high temperature stability.
- Fast switching capability.
- Lead free in compliance with EU RoHS.

Mechanical Data

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

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)

Maximum Ratings

Rating at 25°C ambient temperature unless otherwise specified.

Circuit Diagram



Parameter	Condition	Symbol	CS40S45CT-A	UNIT
Working peak reverse voltage		V_{RRM}	45	V
Forward Rectified Current (total device)		I_O	40	A
Forward Surge Current (per diode)	8.3ms single half sine-wave superimposed on rate load (JEDEC method)	I_{FSM}	280	A
Peak Repetitive Reverse Surge Current (per diode)	2us - 1kHz	I_{RRM}	2	A
Thermal Resistance (per diode)	Junction to case	$R_{\theta JC}$	2	°C/W
	Junction to ambient	$R_{\theta JA}$	50	
Storage Temperature		T_{STG}	-55 ~ +150	°C
Operating Junction Temperature		T_J	-55 ~ +125	°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		315		mV
	$I_F = 20A, T_J = 25^\circ C$			455	490	
	$I_F = 20A, T_J = 125^\circ C$			425		
Reverse Current (per diode)	$V_R = 45V, T_J = 25^\circ C$	I_R		0.12	0.5	mA
	$V_R = 45V, T_J = 125^\circ C$			38	100	
Reverse Breakdown Voltage (per diode)	$I_R = 0.5mA, T_J = 25^\circ C$	V_{BR}	45			V

■ Rating and Characteristic Curves

Fig. 1 - Forward Characteristics

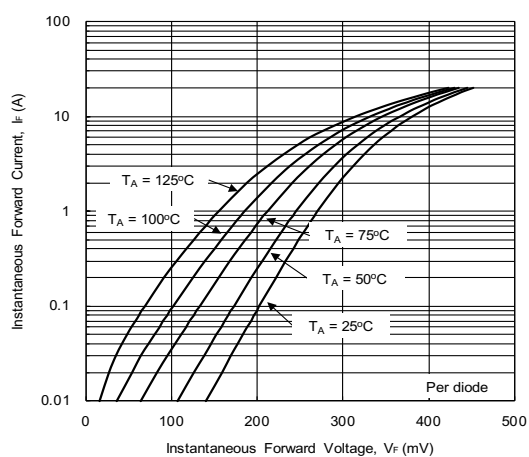


Fig. 2 - Reverse Characteristics

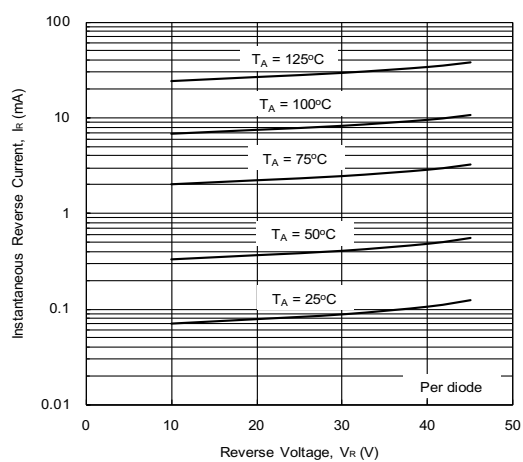


Fig. 3 - Forward Power Dissipation

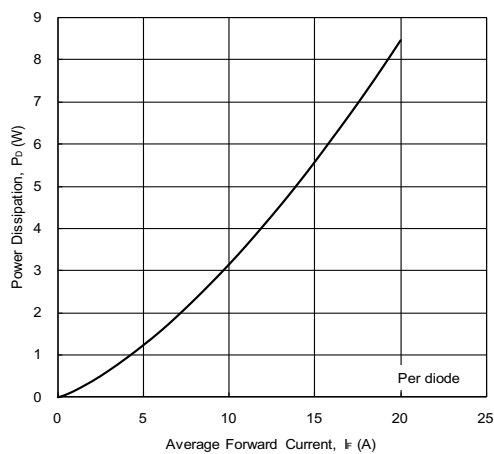


Fig. 4 - Forward Current Derating Curve

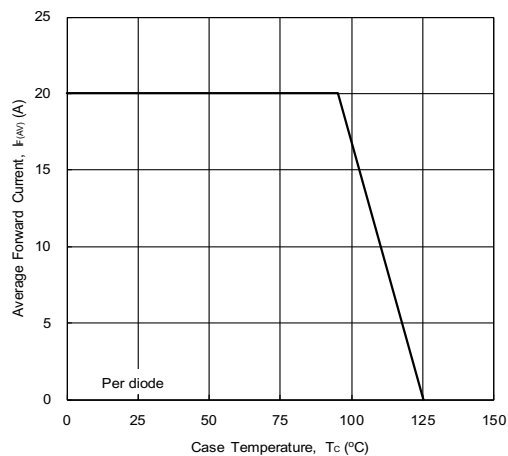
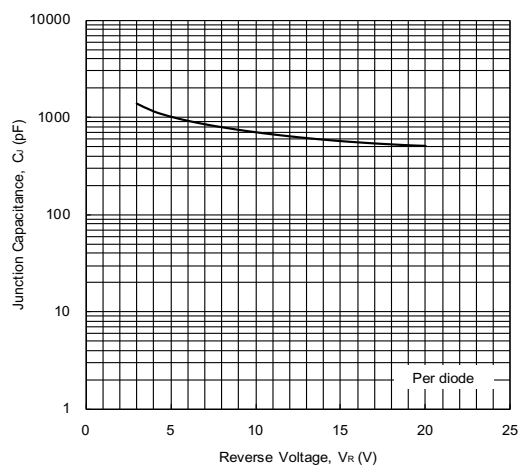
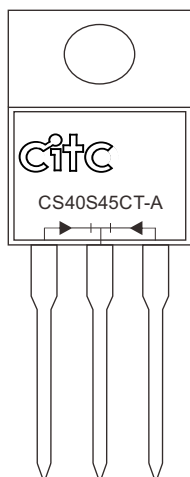


Fig. 5 - Junction Capacitance



■ Marking Information



CS40S45CT-A : Product type marking code

 : CITC Logo

■ Ordering / Packing Information

Part number		Case	Q'TY/Tube (PCS)	Q'TY/Box (PCS)	Q'TY/Carton (PCS)
Halogen	CS40S45CT-A	TO-220AB	50	1000	5000
Halogen free	CS40S45CTG-A				

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

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