

Main Product Characteristics

$I_{F(AV)}$	2x20A
$V_{RRM}$	45V
$T_J$	150°C
$V_{(TYP)}$	0.415V

Features

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

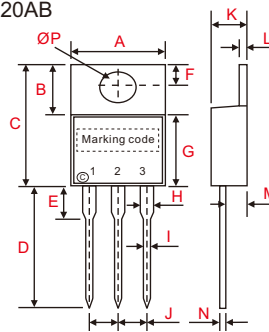
Mechanical data

- Epoxy : UL94-V0 rated flame retardant.
- Case : JEDEC TO-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.

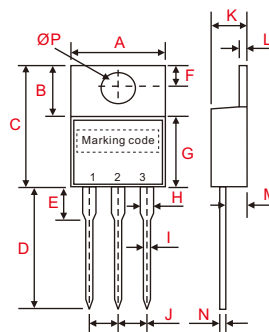
Maximum ratings and electrical characteristics

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%.

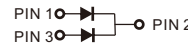
Outline  
TO-220AB



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)



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)

Parameter	Conditions	Symbol	CS40S45CT			UNIT
			MIN.	TYP.	MAX.	
Marking code			CS40S45CT			
Peak repetitive reverse voltage		$V_{RRM}$	45			V
Working peak reverse voltage		$V_{RWM}$				
DC blocking voltage		$V_{RM}$				
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
Thermal resistance(1)	Junction to case	$R_{BJC}$	4			°C/W
Operating and Storage temperature		$T_J, T_{STG}$	-55 ~ +150			°C
Parameter	Conditions	Symbol	MIN.	TYP.	MAX.	UNIT
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	$C_J$		1615		pF
Forward voltage drop (per diode)	$I_F = 5A, T_J = 25^\circ C$	$V_F$		340	390	mV
	$I_F = 5A, T_J = 125^\circ C$			250	290	
	$I_F = 10A, T_J = 25^\circ C$			385	435	
	$I_F = 10A, T_J = 125^\circ C$			310	360	
	$I_F = 20A, T_J = 25^\circ C$			450	500	
	$I_F = 20A, T_J = 125^\circ C$			415	460	
Reverse current (per diode)	$V_R = V_{RRM}, T_J = 25^\circ C$	$I_R$		0.2	0.5	mA
	$V_R = V_{RRM}, T_J = 125^\circ C$				100	

Note : 1. Thermal resistance from junction to case per leg, with heatsink size(1.35" x 0.95" x 0.18") Al-plate.

■ Rating and characteristic curves

Fig. 1 - Instantaneous Forward Characteristics (per diode)

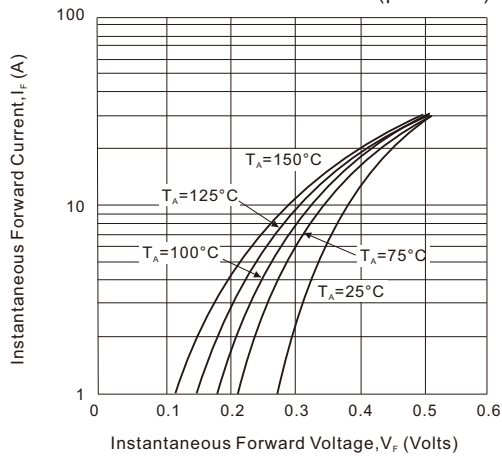


Fig.2 - Forward Current Derating Curve (per diode)

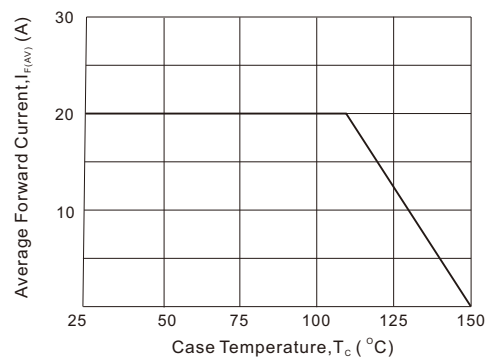
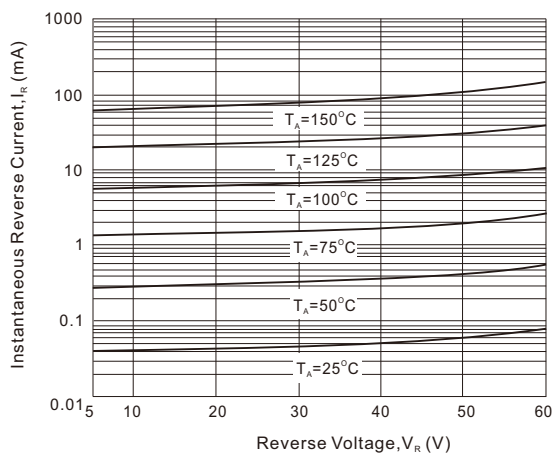


Fig. 3 - Reverse Characteristics (per diode)



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