

### ■ 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

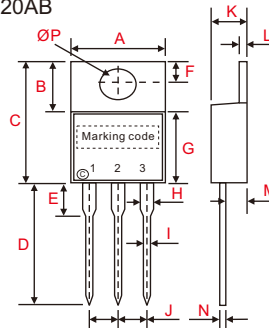
- Epoxy : UL94-V0 rated flame retardant.
- Case : JEDEC TO-220AB molded plastic body.
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026.
- Polarity: As marked.
- Mounting Position : Any.
- Weight : Approximated 2.25 gram.

### ■ Maximum ratings and electrical characteristics

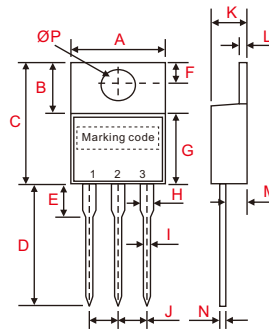
Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

### ■ Outline

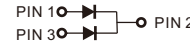
TO-220AB



| 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         | C40S120CT  |      |      | UNIT |
|--|--|----------------|------------|------|------|------|
| Marking code                             |  |                | C40S120CT  |      |      |      |
| Peak repetitive reverse voltage          |  | $V_{RRM}$      |            |      |      |      |
| Working peak reverse voltage             |  | $V_{RWM}$      | 120        |      |      | V    |
| 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) | $I_{FSM}$      | 200        |      |      | A    |
| Thermal resistance(1) (per diode)        | Junction to case   | $R_{BJC}$      | 2          |      |      | °C/W |
| Operating and Storage temperature        |  | $T_J, T_{STG}$ | -40 ~ +150 |      |      | °C   |
| Parameter                                | Conditions   | Symbol         | MIN.       | TYP. | MAX. | UNIT |
| Forward voltage drop (per diode)         | $I_F = 5A, T_J = 25^\circ C$   | $V_F$          |            | 480  | 510  | mV   |
|  | $I_F = 5A, T_J = 125^\circ C$  |                |            | 420  | 480  |      |
|  | $I_F = 10A, T_J = 25^\circ C$  |                |            | 585  | 515  |      |
|  | $I_F = 10A, T_J = 125^\circ C$                                       |                |            | 540  | 570  |      |
|  | $I_F = 20A, T_J = 25^\circ C$  |                |            |      | 830  |      |
|  | $I_F = 20A, T_J = 125^\circ C$                                       |                |            |      | 710  |      |
| Reverse current (per diode)              | $V_R = 90V, T_J = 25^\circ C$  | $I_R$          |            | 0.02 | 0.1  | mA   |
|  | $V_R = 90V, T_J = 125^\circ C$                                       |                |            | 18   | 30   |      |
|  | $V_R = V_{RRM}, T_J = 25^\circ C$                                    |                |            |      | 0.5  |      |
|  | $V_R = V_{RRM}, T_J = 125^\circ C$                                   |                |            |      | 45   |      |

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 - Forward Current Derating Curve (per diode)

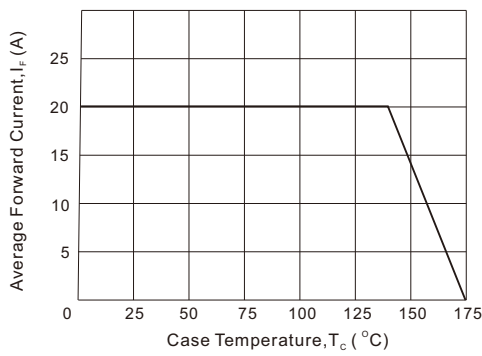


Fig. 2 - Instantaneous Forward Characteristics (per diode)

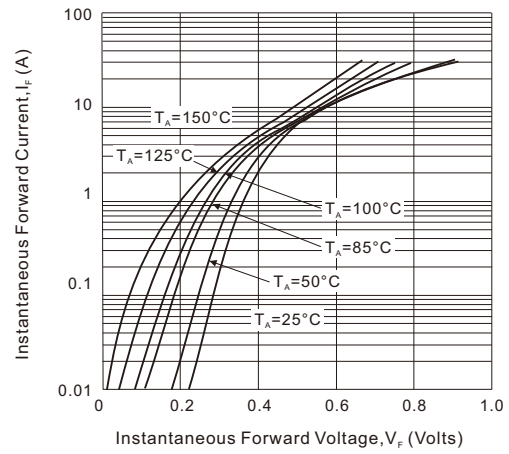
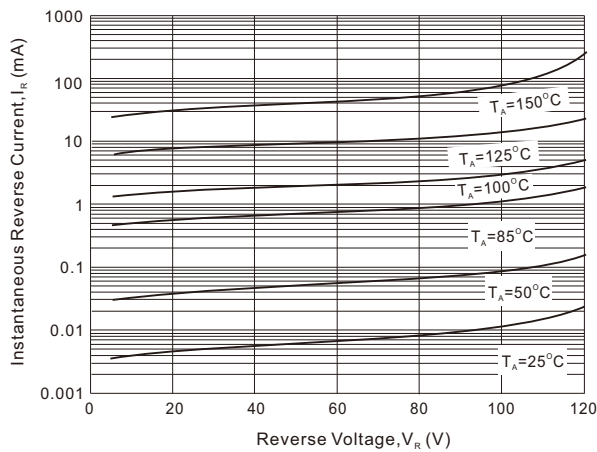


Fig. 3 - Reverse Characteristics (per diode)



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