

■ Features

- Low forward voltage drop.
- Excellent high temperature stability.
- Fast switching capability.
- Suffix "G" indicates Halogen-free part, ex. C10S120CTG.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

■ Mechanical data

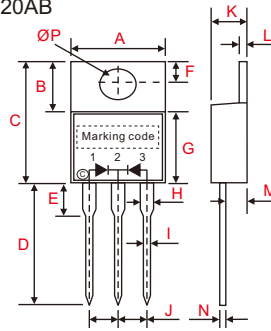
- Epoxy : UL94-V0 rated flame retardant.
- Case : JEDEC TO-220AB molded plastic body over passivated chip.
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed.
- Polarity: Color band denotes cathode end.
- Mounting Position : Any.
- Weight : Approximated 2.25 gram.

■ Maximum ratings and electrical characteristics

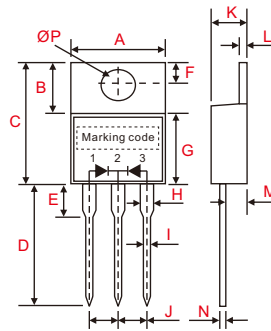
Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

■ Outline

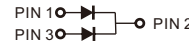
TO-220AB



| 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) |



| Parameter | Conditions | Symbol | C10S120CT | UNIT | | |
|--|--|----------------|------------|------|------|------|
| Marking code | | | C10S120CT | | | |
| 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 | 10 | A | | |
| Forward surge current (per diode) | 8.3ms single half sine-wave superimposed on rate load (JEDEC method) | I_{FSM} | 120 | A | | |
| Operating and Storage temperature | | T_J, T_{STG} | -40 ~ +150 | °C | | |
| Parameter | Conditions | Symbol | MIN. | TYP. | MAX. | UNIT |
| Breakdown voltage (per diode) | $I_R = 0.5mA, T_J = 25^\circ C$ | V_{BR} | 120 | | | V |
| Forward voltage drop (per diode) | $I_F = 3A, T_J = 25^\circ C$ | V_F | | 570 | | mV |
| | $I_F = 5A, T_J = 25^\circ C$ | | | 660 | 700 | |
| | $I_F = 3A, T_J = 125^\circ C$ | | | 510 | | |
| | $I_F = 5A, T_J = 125^\circ C$ | | | 580 | 620 | |
| Reverse current (per diode) | $V_R = 90V, T_J = 25^\circ C$ | I_R | | 10 | | uA |
| | $V_R = 120V, T_J = 25^\circ C$ | | | 15 | 100 | |
| | $V_R = 90V, T_J = 125^\circ C$ | | | | | mA |
| | $V_R = 120V, T_J = 125^\circ C$ | | | 10 | 40 | |

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)

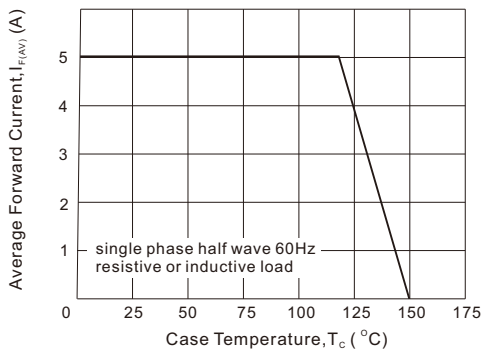


Fig. 2 - Instantaneous Forward Characteristics (per diode)

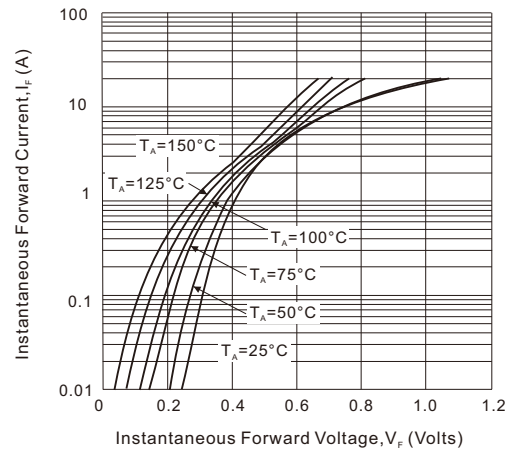


Fig. 3 - Reverse Characteristics (per diode)

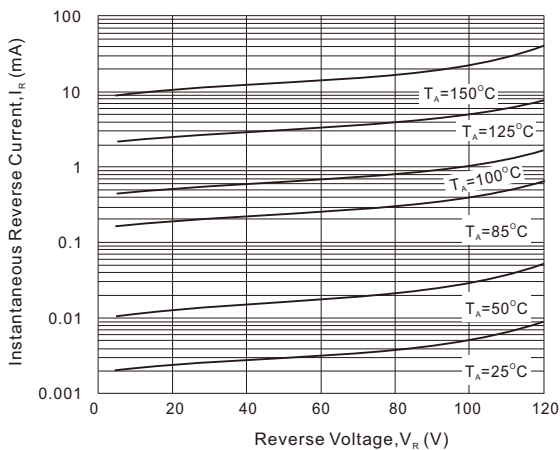
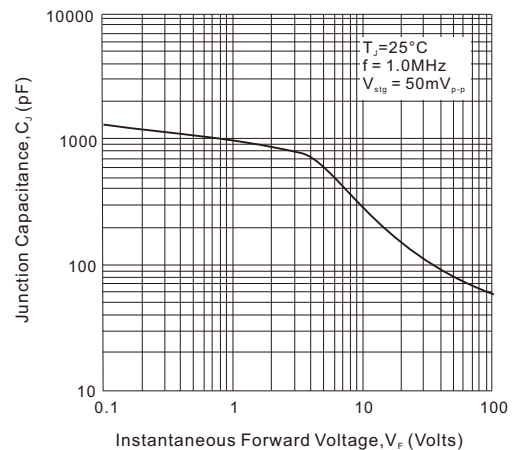


Fig. 4 - Typical Junction Capacitance (per diode)



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