



### Features

- Lead Free Finish/RoHS Compliant
- Glass Passivated Chip
- High Surge Forward Current Capability
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1

### Typical Applications

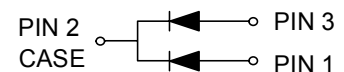
Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

### Mechanical Data

- **Package:** TO-220C  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked



TO-220C  
(TO-220AB)



### Maximum Ratings (T<sub>a</sub>=25°C Unless otherwise specified)

| Parameter                                                                                  | Symbol           | Unit | 1610CTG    | 1615CTG | 1620CTG | 1640CTG | 1660CTG |
|--------------------------------------------------------------------------------------------|------------------|------|------------|---------|---------|---------|---------|
| Device marking code                                                                        |                  |      | 1610CTG    | 1615CTG | 1620CTG | 1640CTG | 1660CTG |
| Repetitive Peak Reverse Voltage                                                            | V <sub>RRM</sub> | V    | 100        | 150     | 200     | 400     | 600     |
| Average Rectified Output Current<br>@60Hz half sine-wave, R-load, T <sub>c</sub> (FIG.1)   | I <sub>o</sub>   | A    | 18         |         |         |         |         |
| Surge(Non-repetitive)Forward Current<br>@60Hz half sine-wave,1 cycle, T <sub>a</sub> =25°C | I <sub>FSM</sub> | A    | 100        |         |         |         |         |
| Storage Temperature                                                                        | T <sub>stg</sub> | °C   | -55 ~ +150 |         |         |         |         |
| Junction Temperature                                                                       | T <sub>j</sub>   | °C   | -55 ~ +150 |         |         |         |         |

### Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| Parameter                                                         | Symbol            | Unit | Test Conditions                                                    | 1610CT | 1615CT | 1620CT | 1640CT | 1660CT |
|-------------------------------------------------------------------|-------------------|------|--------------------------------------------------------------------|--------|--------|--------|--------|--------|
| Maximum instantaneous forward voltage drop per diode              | V <sub>FM</sub>   | V    | I <sub>FM</sub> =15A                                               | 0.975  |        |        | 1.30   | 1.50   |
| Maximum DC reverse current at rated DC blocking voltage per diode | I <sub>RRM1</sub> | uA   | V <sub>RM</sub> =V <sub>RRM</sub><br>T <sub>a</sub> =25°C          | 5      |        |        | 10     |        |
|                                                                   | I <sub>RRM2</sub> |      | V <sub>RM</sub> =V <sub>RRM</sub><br>T <sub>a</sub> =125°C         | 250    |        |        | 500    |        |
| Reverse Recovery Time                                             | T <sub>rr</sub>   | ns   | I <sub>F</sub> =0.5A I <sub>RM</sub> =1A<br>I <sub>RR</sub> =0.25A | 25     |        |        | 50     |        |



## Characteristics (Typical)

Fig. 1 - Forward Current Derating Curve

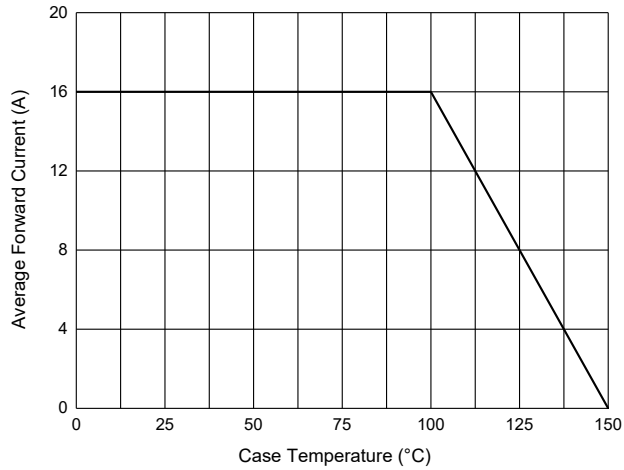


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

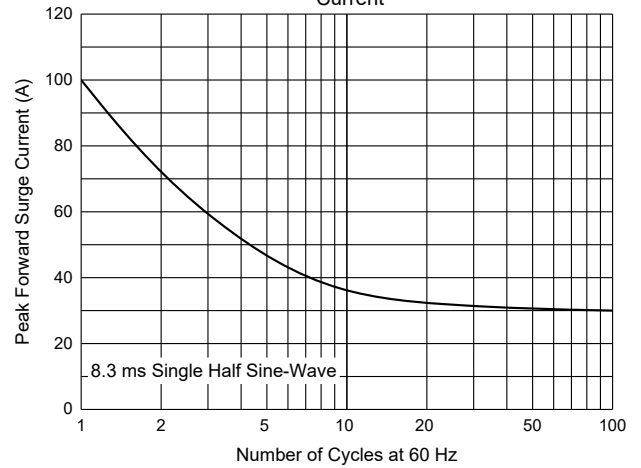


Fig. 3 - Typical Instantaneous Forward Characteristics

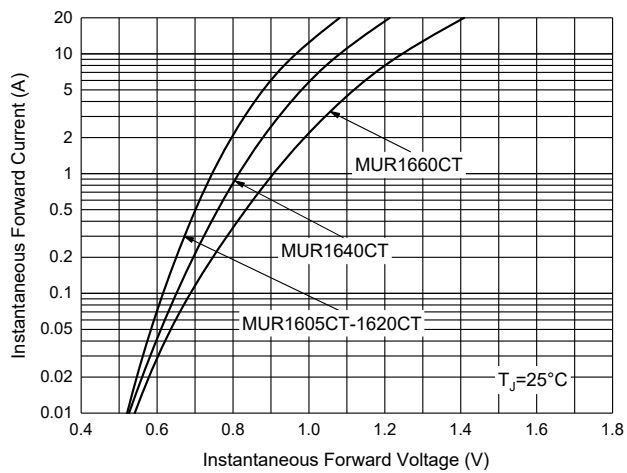
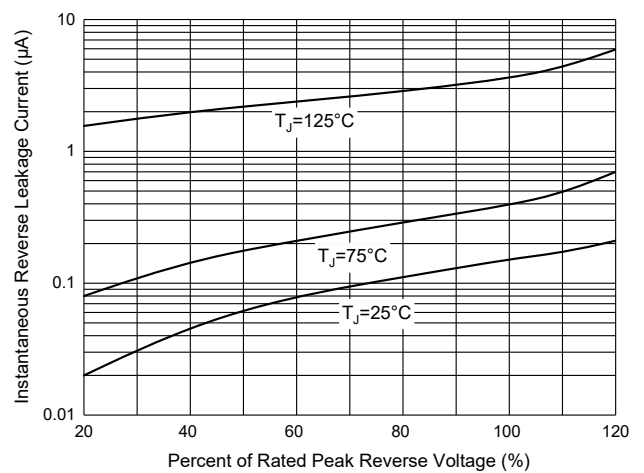
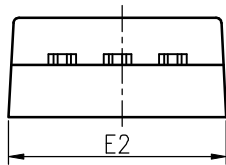
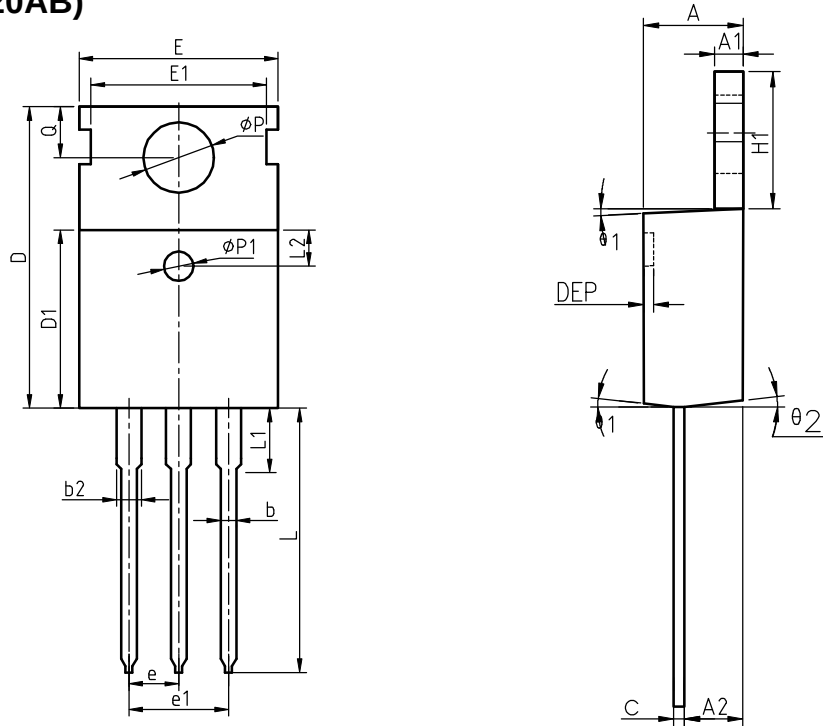


Fig. 4 - Typical Reverse Leakage Characteristics





Package Information  
TO-220C(TO-220AB)



COMMON DIMENSIONS

| SYMBOL | MIN   | NOM   | MAX   | MIN   | NOM   | MAX   |
|--------|-------|-------|-------|-------|-------|-------|
| A      | 4.40  | 4.57  | 4.70  | 0.173 | 0.180 | 0.185 |
| A1     | 1.27  | 1.30  | 1.33  | 0.050 | 0.051 | 0.052 |
| A2     | 2.35  | 2.40  | 2.50  | 0.093 | 0.094 | 0.098 |
| b      | 0.77  | 0.80  | 0.90  | 0.030 | 0.031 | 0.035 |
| b2     | 1.17  | 1.27  | 1.36  | 0.046 | 0.050 | 0.054 |
| c      | 0.48  | 0.50  | 0.56  | 0.019 | 0.020 | 0.022 |
| D      | 15.40 | 15.60 | 15.80 | 0.606 | 0.614 | 0.622 |
| D1     | 9.00  | 9.10  | 9.20  | 0.354 | 0.358 | 0.362 |
| DEP    | 0.05  | 0.10  | 0.20  | 0.002 | 0.004 | 0.008 |
| E      | 9.80  | 10.00 | 10.20 | 0.386 | 0.394 | 0.402 |
| E1     | -     | 8.70  | -     | -     | 0.343 | -     |
| E2     | 9.80  | 10.00 | 10.20 | 0.386 | 0.394 | 0.402 |
| e      |       | 2.54  | BSC   |       | 0.100 | BSC   |
| e1     |       | 5.08  | BSC   |       | 0.200 | BSC   |
| H1     | 6.40  | 6.50  | 6.60  | 0.252 | 0.256 | 0.260 |
| L      | 12.75 | 13.50 | 13.65 | 0.502 | 0.531 | 0.537 |
| L1     | -     | 3.10  | 3.30  | -     | 0.122 | 0.130 |
| L2     |       | 2.50  | REF   |       | 0.098 | REF   |
| P      | 3.50  | 3.60  | 3.63  | 0.138 | 0.142 | 0.143 |
| P1     | 3.50  | 3.60  | 3.63  | 0.138 | 0.142 | 0.143 |
| Q      | 2.73  | 2.80  | 2.87  | 0.107 | 0.110 | 0.113 |
| θ 1    | 5°    | 7°    | 9°    | 5°    | 7°    | 9°    |
| θ 2    | 1°    | 3°    | 5°    | 1°    | 3°    | 5°    |
| θ 3    | 1°    | 3°    | 5°    | 1°    | 3°    | 5°    |



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