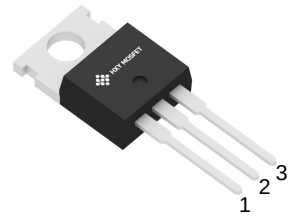


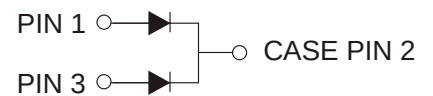


## Features

- Low Power Loss,High Efficiency
- Guard Ring Die Construction for Transient Protection
- High Current Capability and Low Forward Voltage Drop



TO-220C(TO-220AB-3)



## Maximum Ratings (Ta=25°C unless otherwise noted)

| Symbol          | Parameter                                                        | Limit    | Unit |
|-----------------|------------------------------------------------------------------|----------|------|
| $V_{RRM}$       | Peak repetitive reverse voltage                                  | 45       | V    |
| $V_{RWM}$       | Working peak reverse voltage                                     |          |      |
| $V_R$           | DC blocking voltage                                              |          |      |
| $V_{R(RMS)}$    | RMS reverse voltage                                              | 31.5     | V    |
| $I_O$           | Average rectified output current                                 | 30       | A    |
| $I_{FSM}$       | Non-Repetitive peak forward surge current (8.3ms half sine wave) | 280      | A    |
| $R_{\theta JC}$ | Thermal resistance from junction to case ,Tc=25°C                | 2.0      | °C/W |
| $R_{\theta JA}$ | Thermal resistance from junction to ambient                      | 62.5     | °C/W |
| $T_j$           | Junction temperature                                             | 150      | °C   |
| $T_{stg}$       | Storage temperature                                              | -55~+150 | °C   |

## Electrical Characteristics(Ta=25°C unless otherwise specified)

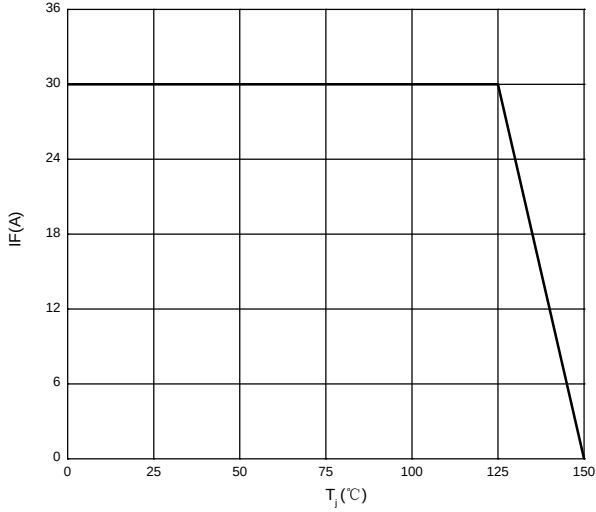
| Parameter       | Symbol     | Test conditions |                    | Min | Typ  | Max  | Unit    |
|-----------------|------------|-----------------|--------------------|-----|------|------|---------|
| Reverse voltage | $V_{(BR)}$ | $I_R=0.1mA$     |                    | 45  |      |      | V       |
| Reverse current | $I_R$      | $V_R=45V$       | $T_j=25^{\circ}C$  |     | 40   | 150  | $\mu A$ |
|                 |            |                 | $T_j=125^{\circ}C$ |     | 23   |      | mA      |
| Forward voltage | $V_F$      | $I_F=10A$       | $T_j=25^{\circ}C$  |     | 0.44 |      | V       |
|                 |            |                 | $T_j=125^{\circ}C$ |     | 0.37 |      | V       |
|                 |            | $I_F=15A$       | $T_j=25^{\circ}C$  |     | 0.48 | 0.55 | V       |
|                 |            |                 | $T_j=125^{\circ}C$ |     | 0.44 |      | V       |

\*Pulse test: pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2.0\%$ .

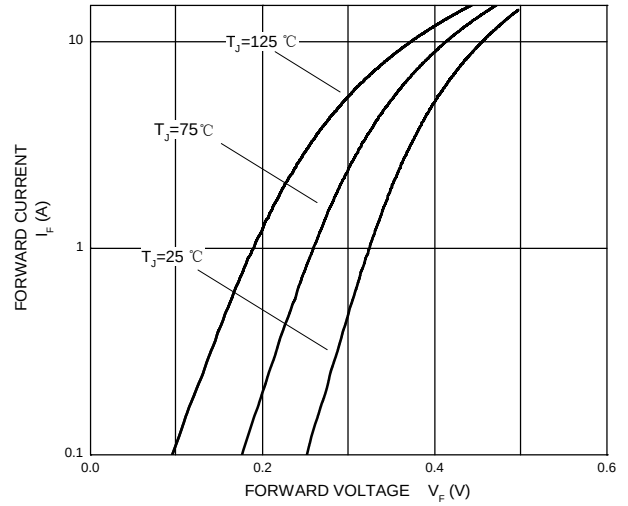


## Typical Characteristics

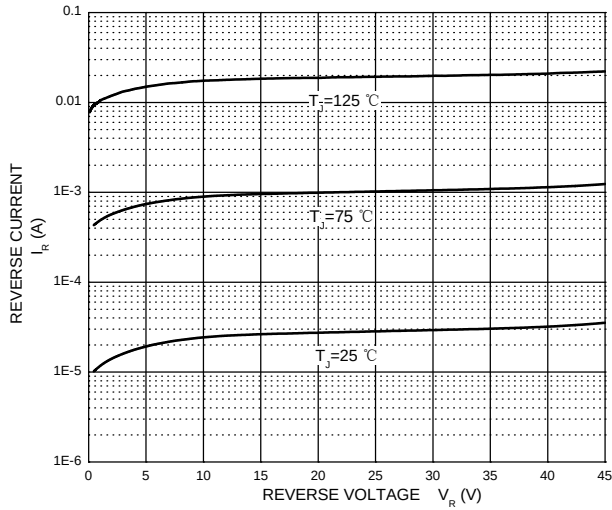
Forward Current Derating Curve



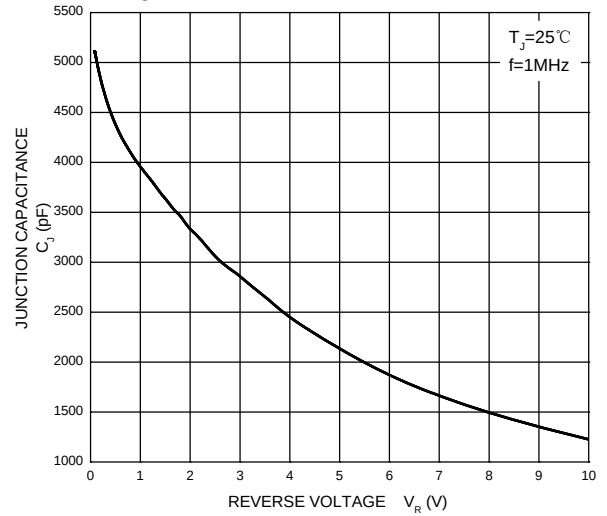
Forward Characteristics



Reverse Characteristics

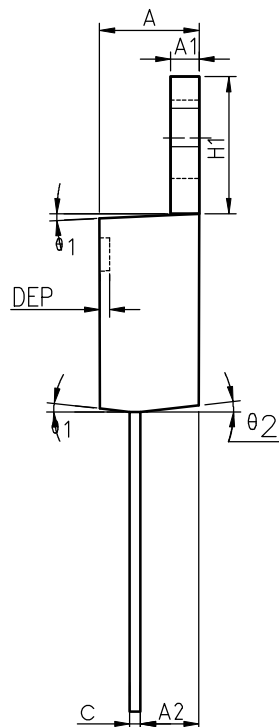
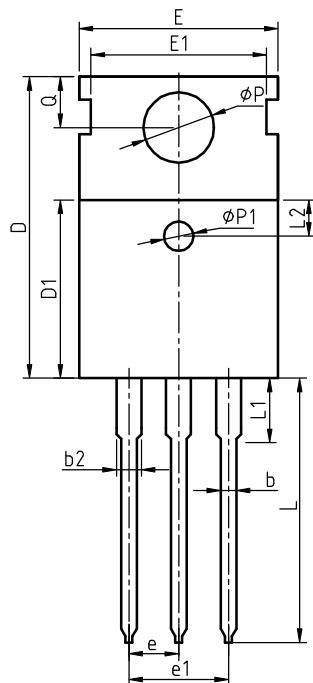


Capacitance Characteristics Per Diode



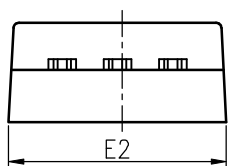


Package Information  
TO-220C(TO-220AB-3)



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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