

## TO-220-3L Plastic-Encapsulate Transistors

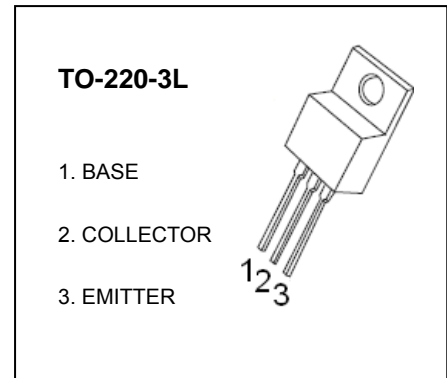
### KTC3229 TRANSISTOR (NPN)

#### FEATURES

- High Breakdown Voltage
- Small Collector Output Capacitance

#### APPLICATIONS

- Color TV Chroma Output Applications



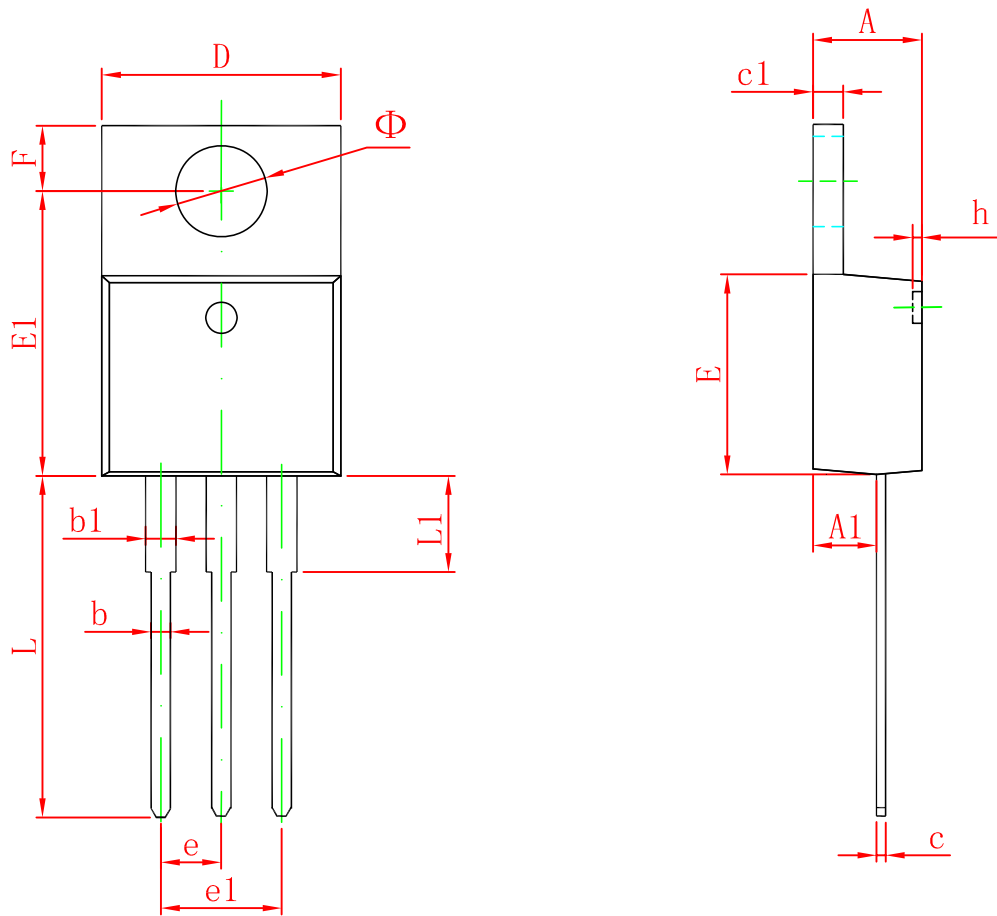
#### MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted)

| Symbol          | Parameter                                   | Value    | Unit                      |
|-----------------|---|----------|---------------------------|
| $V_{CBO}$       | Collector-Base Voltage                      | 300      | V                         |
| $V_{CEO}$       | Collector-Emitter Voltage                   | 300      | V                         |
| $V_{EBO}$       | Emitter-Base Voltage                        | 5        | V                         |
| $I_C$           | Collector Current                           | 0.1      | A                         |
| $P_C$           | Collector Power Dissipation                 | 2        | W                         |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 63       | $^\circ\text{C}/\text{W}$ |
| $T_j$           | Junction Temperature                        | 150      | $^\circ\text{C}$          |
| $T_{stg}$       | Storage Temperature                         | -55~+150 | $^\circ\text{C}$          |

#### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless otherwise specified)

| Parameter                            | Symbol        | Test conditions                           | Min | Typ | Max | Unit          |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=100\mu\text{A}, I_E=0$               | 300 |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1\text{mA}, I_B=0$                   | 300 |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=100\mu\text{A}, I_C=0$               | 5   |     |     | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=240\text{V}, I_E=0$               |     |     | 1   | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=5\text{V}, I_C=0$                 |     |     | 1   | $\mu\text{A}$ |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE}=10\text{V}, I_C=20\text{mA}$      | 30  |     | 200 |               |
|                                      | $h_{FE(2)}$   | $V_{CE}=10\text{V}, I_C=0.5\text{mA}$     | 20  |     |     |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=10\text{mA}, I_B=1\text{mA}$         |     |     | 1   | V             |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=20\text{V}, I_E=0, f=1\text{MHz}$ |     |     | 4   | pF            |
| Transition frequency                 | $f_T$         | $V_{CE}=20\text{V}, I_C=20\text{mA}$      | 75  |     |     | MHz           |

# TO-220-3L Package Outline Dimensions



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min                       | Max    | Min                  | Max   |
| A      | 4.470                     | 4.670  | 0.176                | 0.184 |
| A1     | 2.520                     | 2.820  | 0.099                | 0.111 |
| b      | 0.710                     | 0.910  | 0.028                | 0.036 |
| b1     | 1.170                     | 1.370  | 0.046                | 0.054 |
| c      | 0.310                     | 0.530  | 0.012                | 0.021 |
| c1     | 1.170                     | 1.370  | 0.046                | 0.054 |
| D      | 10.010                    | 10.310 | 0.394                | 0.406 |
| E      | 8.500                     | 8.900  | 0.335                | 0.350 |
| E1     | 12.060                    | 12.460 | 0.475                | 0.491 |
| e      | 2.540 TYP                 |        | 0.100 TYP            |       |
| e1     | 4.980                     | 5.180  | 0.196                | 0.204 |
| F      | 2.590                     | 2.890  | 0.102                | 0.114 |
| h      | 0.000                     | 0.300  | 0.000                | 0.012 |
| L      | 13.400                    | 13.800 | 0.528                | 0.543 |
| L1     | 3.560                     | 3.960  | 0.140                | 0.156 |
| $\Phi$ | 3.735                     | 3.935  | 0.147                | 0.155 |