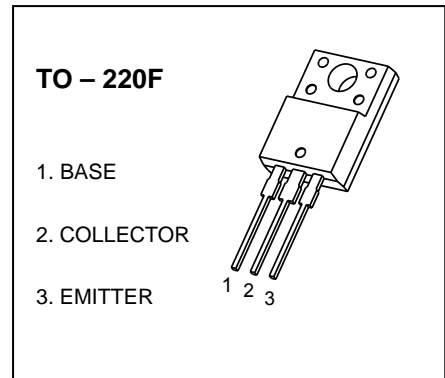


## TO-220F Plastic-Encapsulate Transistors

### KTD2061 TRANSISTOR (NPN)

#### FEATURES

- High Breakdown Voltage
- High Transition Frequency
- High Current
- Complementary to KTB1369



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

| Symbol          | Parameter                                   | Value    | Unit                        |
|-----------------|---|----------|-----------------------------|
| $V_{CBO}$       | Collector-Base Voltage                      | 200      | V                           |
| $V_{CEO}$       | Collector-Emitter Voltage                   | 180      | V                           |
| $V_{EBO}$       | Emitter-Base Voltage                        | 5        | V                           |
| $I_C$           | Collector Current                           | 2        | A                           |
| $P_C$           | Collector Power Dissipation                 | 2        | W                           |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 62.5     | $^{\circ}\text{C}/\text{W}$ |
| $T_j$           | Junction Temperature                        | 150      | $^{\circ}\text{C}$          |
| $T_{stg}$       | Storage Temperature                         | -55~+150 | $^{\circ}\text{C}$          |

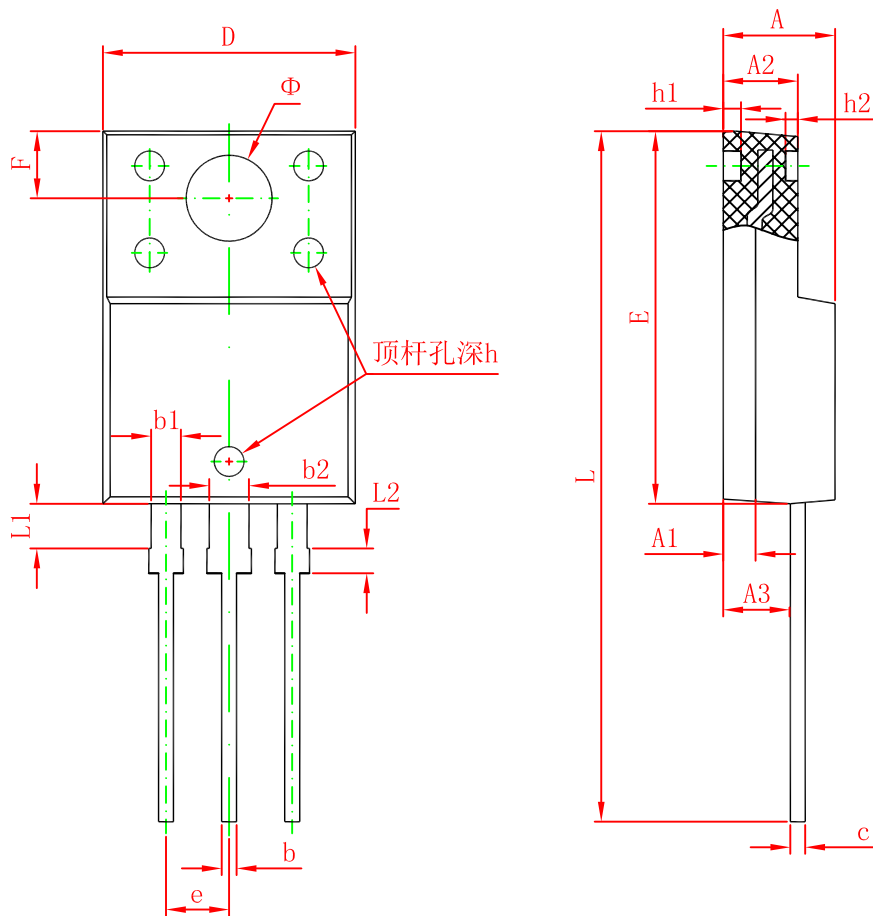
#### ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter                            | Symbol        | Test conditions                       | Min | Typ | Max | Unit          |
|--------------------------------------|---------------|---------------------------------------|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=100\mu\text{A}, I_E=0$           | 200 |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=10\text{mA}, I_B=0$              | 180 |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=10\mu\text{A}, I_C=0$            | 5   |     |     | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=200\text{V}, I_E=0$           |     |     | 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                      | $h_{FE}$      | $V_{CE}=10\text{V}, I_C=400\text{mA}$ | 70  |     | 240 |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$   |     |     | 1   | V             |
| Base-emitter voltage                 | $V_{BE}$      | $V_{CE}=5\text{V}, I_C=500\text{mA}$  |     |     | 1   | V             |
| Transition frequency                 | $f_T$         | $V_{CE}=10\text{V}, I_C=400\text{mA}$ |     | 100 |     | MHz           |

#### CLASSIFICATION OF $h_{FE}$

| RANK  | O      | Y       |
|-------|--------|---------|
| RANGE | 70-140 | 120-240 |

# TO-220F Package Outline Dimensions



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min.                      | Max.   | Min.                 | Max.  |
| A      | 4.300                     | 4.700  | 0.169                | 0.185 |
| A1     | 1.300 REF.                |        | 0.051 REF.           |       |
| A2     | 2.800                     | 3.200  | 0.110                | 0.126 |
| A3     | 2.500                     | 2.900  | 0.098                | 0.114 |
| b      | 0.500                     | 0.750  | 0.020                | 0.030 |
| b1     | 1.100                     | 1.350  | 0.043                | 0.053 |
| b2     | 1.500                     | 1.750  | 0.059                | 0.069 |
| c      | 0.500                     | 0.750  | 0.020                | 0.030 |
| D      | 9.960                     | 10.360 | 0.392                | 0.408 |
| E      | 14.800                    | 15.200 | 0.583                | 0.598 |
| e      | 2.540 TYP.                |        | 0.100 TYP.           |       |
| F      | 2.700 REF.                |        | 0.106 REF.           |       |
| Φ      | 3.500 REF.                |        | 0.138 REF.           |       |
| h      | 0.000                     | 0.300  | 0.000                | 0.012 |
| h1     | 0.800 REF.                |        | 0.031 REF.           |       |
| h2     | 0.500 REF.                |        | 0.020 REF.           |       |
| L      | 28.000                    | 28.400 | 1.102                | 1.118 |
| L1     | 1.700                     | 1.900  | 0.067                | 0.075 |
| L2     | 0.900                     | 1.100  | 0.035                | 0.043 |