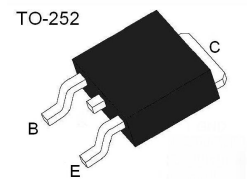
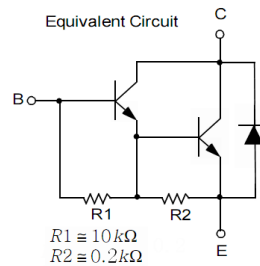


## FEATURES

- High DC Current Gain
- Built-in a Damper Diode at E-C
- Electrically Similar to Popular TIP122
- Complementary to MJD127



LOGO **GK** XXX CODE



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

### Absolute Maximum Ratings

| Parameter                 | Symbol     | Value                            | Unit             |
|---------------------------|------------|----------------------------------|------------------|
| Collector-base voltage    | $BV_{CBO}$ | 100                              | V                |
| Collector-emitter voltage | $BV_{CEO}$ | 100                              | V                |
| Emitter-base voltage      | $BV_{EBO}$ | 5                                | V                |
| Collector current (DC)    | $I_C$      | 8                                | A                |
| Collector current (Pluse) | $I_{CP}$   | 8                                | A                |
| Collector Dissipation     | $P_C$      | $T_A = 25\text{ }^\circ\text{C}$ | 1.75             |
|                           |            | $T_C = 25\text{ }^\circ\text{C}$ | 20               |
| Junction Temperature      | $T_j$      | 150                              | $^\circ\text{C}$ |
| Storage Temperature       | $T_{stg}$  | -55~150                          | $^\circ\text{C}$ |

**ELECTRICAL CHARACTERISTICS(Ta=25°C unless otherwise specified)**

| Parameter                             | Symbol        | Conditions   | Min         | Typ | Max    | Unit    |
|---------------------------------------|---------------|--|-------------|-----|--------|---------|
| Collector-base voltage                | $BV_{CBO}$    | $I_C = 10mA, I_E = 0$                              | 100         |     |        | V       |
| Collector-emitter voltage             | $BV_{CEO}$    | $I_C = 30mA, I_B = 0$                              | 100         |     |        | V       |
| Emitter-base voltage                  | $BV_{EBO}$    | $I_E = 30mA, I_C = 0$                              | 5           |     |        | V       |
| Collector cut-off current             | $I_{CBO}$     | $V_{CB} = 100V, I_E = 0$                           |             |     | 10     | $\mu A$ |
| Collector cut-off current             | $I_{CEO}$     | $V_{CE} = 50V, I_E = 0$                            |             |     | 10     | $\mu A$ |
| Emitter cut-off current               | $I_{EBO}$     | $V_{EB} = 5V, I_C = 0$                             |             |     | 2      | mA      |
| DC current gain*                      | $h_{FE}$      | $V_{CE} = 4V, I_C = 4A$<br>$V_{CE} = 4V, I_C = 8A$ | 1000<br>500 |     | 12K    |         |
| Collector-emitter saturation voltage* | $V_{CE(sat)}$ | $I_C = 4A, I_B = 16mA$<br>$I_C = 8A, I_B = 80mA$   |             |     | 2<br>4 | V       |
| Base-emitter saturation voltage*      | $V_{BE(sat)}$ | $I_C = 8A, I_B = 80mA$                             |             |     | 4.5    | V       |
| Base-emitter on voltage*              | $V_{BE(on)}$  | $V_{CE} = 4V, I_C = 4A$                            |             |     | 2.8    | V       |
| Output capacitance                    | $C_{ob}$      | $V_{CB} = 10V, f = 1MHz$                           |             |     | 200    | pF      |

\* Pulse Test :  $PW \leq 300\mu s, Duty\ cycle \leq 2\%$

RATING AND CHARACTERISTIC CURVES

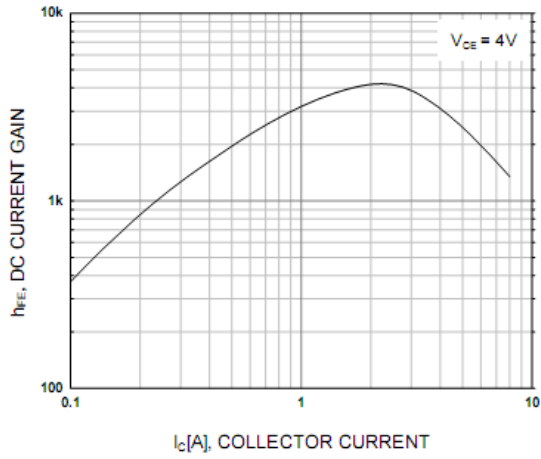


Figure 1. DC current Gain

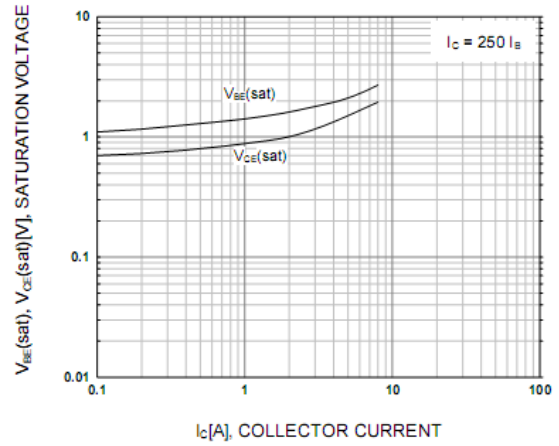


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

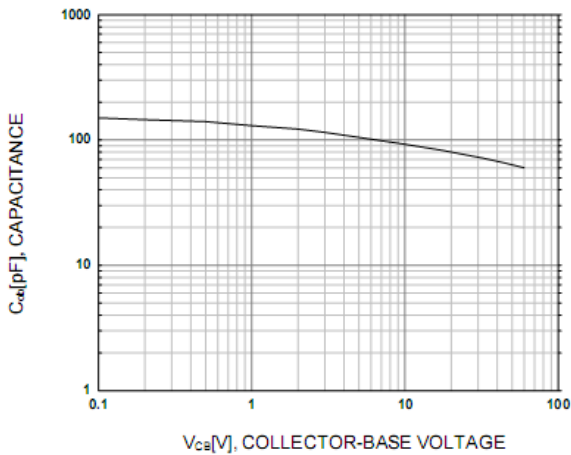


Figure 3. Collector Output Capacitance

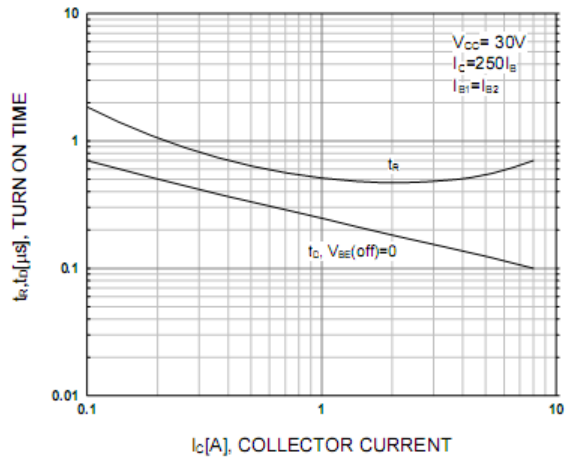


Figure 4. Turn On Time

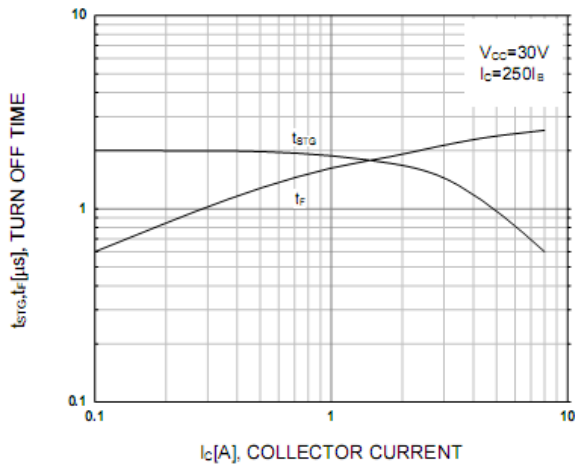


Figure 5. Turn Off Time

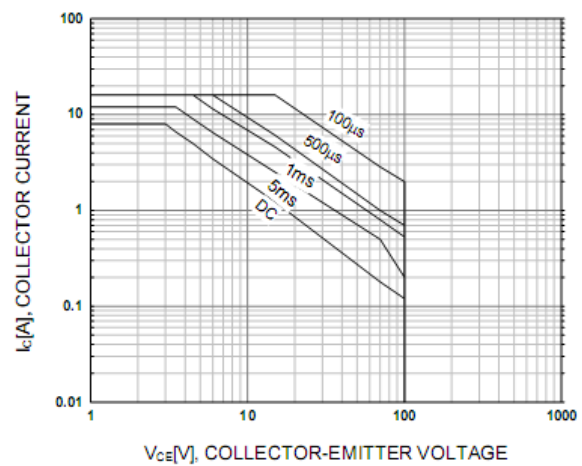


Figure 6. Safe Operating Area

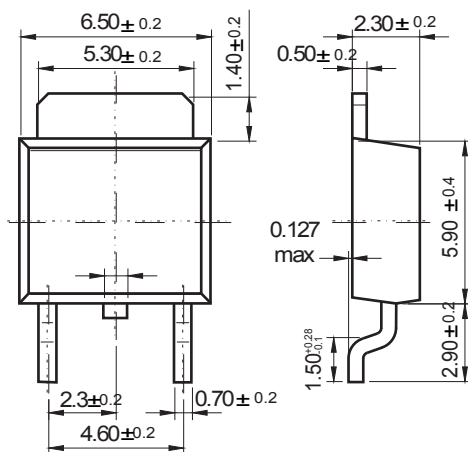
Soldering parameters

| Reflow Condition  |                                   | Pb-Free assembly<br>(see as below) |
|---|-----------------------------------|------------------------------------|
| Pre Heat  | -Temperature Min ( $T_{s(min)}$ ) | +150 °C                            |
|   | -Temperature Max( $T_{s(max)}$ )  | +200 °C                            |
|   | -Time (Min to Max) (ts)           | 60-180 secs.                       |
| Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak) |                                   | 3 °C/sec. Max                      |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate                    |                                   | 3 °C/sec. Max                      |
| Reflow  | -Temperature( $T_L$ )(Liquid us)  | +217 °C                            |
|   | -Temperature( $t_L$ )             | 60-150 secs.                       |
| Peak Temp ( $T_P$ )                                     |                                   | +260(+0/-5) °C                     |
| Time within 5 °C of actual Peak Temp ( $t_p$ )          |                                   | 30 secs. Max                       |
| Ramp-down Rate  |                                   | 6 °C/sec. Max                      |
| Time 25 °C to Peak Temp ( $T_P$ )                       |                                   | 8 min. Max                         |
| Do not exceed   |                                   | +260 °C                            |

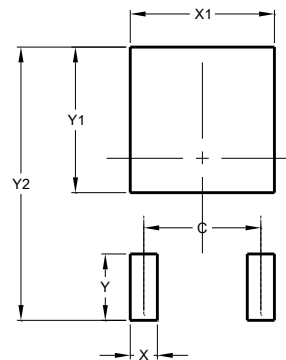


Package Dimensions & Suggested Pad Layout

TO-252



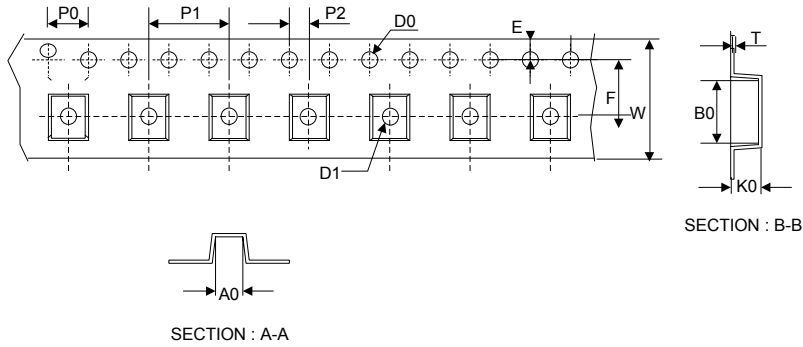
Dimensions in inches and (millimeters)



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 4.55          |
| X          | 1.50          |
| X1         | 5.80          |
| Y          | 2.70          |
| Y1         | 6.00          |
| Y2         | 10.90         |

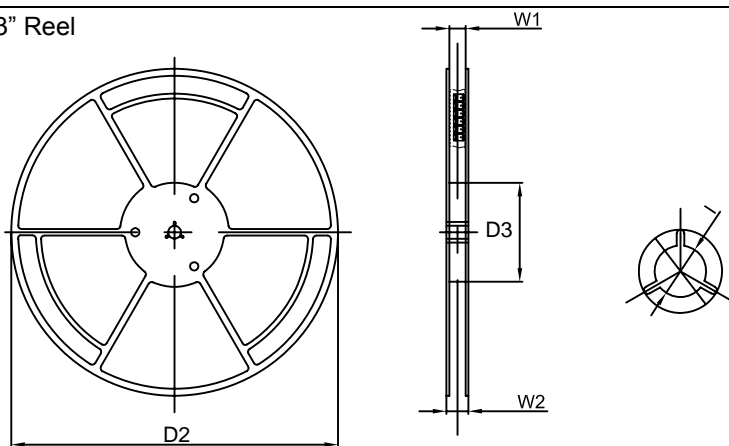
Tape & reel specification

Tape



| Symbol | Dimension (mm) |
|--------|----------------|
| P0     | 4.00±0.20      |
| P1     | 8.00±0.20      |
| P2     | 2.00±0.20      |
| D0     | 1.55±0.15      |
| D1     | 1.55±0.20      |
| E      | 1.75±0.20      |
| F      | 7.50±0.20      |
| W      | 16.00±0.20     |
| A0     | 7.10±0.20      |
| B0     | 10.50±0.20     |
| K0     | 2.70±0.20      |
| T      | 0.30±0.10      |
| D2     | 330.0±5.0      |
| D3     | 100.0±4.0      |
| W1     | 20.0±5.0       |
| W2     | 25.0±5.0       |
| I      | 13.0±2.0       |

13" Reel



Quantity: 2500PCS