# TIP2955
# TIP3055

## Complementary power transistors

## Features

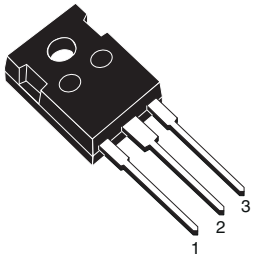
- Low collector-emitter saturation voltage
- Complementary NPN - PNP transistors

## Applications

- General purpose
- Audio Amplifier

## Description

The devices are manufactured in epitaxial-base planar technology and are suitable for audio, power linear and switching applications.




**TO-247**

**Figure 1. Internal schematic diagrams**

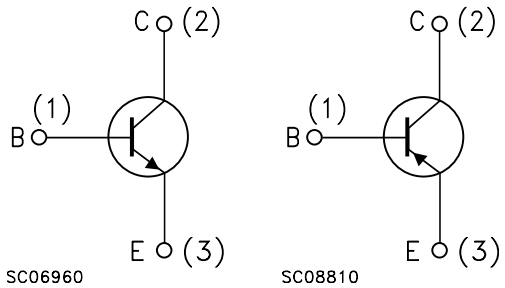



**Table 1. Device summary**

| Order code | Marking | Package | Packaging |
|---|---|---|---|
| TIP2955 | TIP2955 | TO-247 | tube |
| TIP3055 | TIP3055 | | |

# 1 Absolute maximun rating

**Table 2. Absolute maximum rating**

| Symbol | Parameter | Value | | Unit |
|---|---|---|---|---|
| | | NPN | TIP3055 | |
| | | PNP | TIP2955 | |
| $V_{CBO}$ | Collector-emitter voltage ($I_E$ = 0) | | 100 | V |
| $V_{CER}$ | Collector-emitter voltage ($R_{BE}$ = 100 Ω) | | 70 | V |
| $V_{CEO}$ | Collector-emitter voltage ($I_B$ = 0) | | 60 | V |
| $V_{EBO}$ | Collector-base voltage ($I_C$ = 0) | | 7 | V |
| $I_C$ | Collector current | | 15 | A |
| $I_B$ | Base current | | 7 | A |
| $P_{tot}$ | Total dissipation at $T_c \leq 25°C$ | | 90 | W |
| $T_{stg}$ | Storage temperature | | -65 to 150 | °C |
| $T_J$ | Max. operating junction temperature | | 150 | °C |

*Note: For PNP type voltage and current values are negative*

# 2 Electrical characteristics

($T_{case}$ = 25 °C; unless otherwise specified)

**Table 3. Electrical characteristics**

| Symbol | Parameter | Test conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $I_{CEX}$ | Collector cut-off current ($V_{BE}$ = -1.5 V) | $V_{CE}$ = 100 V<br>$V_{CE}$ = 100 V $T_C$ = 150 °C | | | 1<br>5 | mA<br>mA |
| $I_{CEO}$ | Collector cut-off current ($I_B$ = 0) | $V_{CE}$ = 30 V | | | 0.7 | mA |
| $I_{EBO}$ | Emitter cut-off current ($I_C$ = 0) | $V_{EB}$ = 7 V | | | 5 | mA |
| $V_{CEO(sus)}$ (1) | Collector-emitter sustaining voltage ($I_B$ = 0) | $I_C$ = 200 mA | 60 | | | V |
| $V_{CER(sus)}$ (1) | Collector-emitter sustaining voltage ($R_{BE}$ = 100 Ω) | $I_C$ = 200 mA | 70 | | | V |
| $V_{CE(sat)}$ (1) | Collector-emitter saturation voltage | $I_C$ = 4 A $I_B$ = 400 mA<br>$I_C$ = 10 A $I_B$ = 3.3 A | | | 1<br>3 | V<br>V |
| $V_{BE}$ (1) | Base-emitter voltage | $I_C$ = 4 A $V_{CE}$ = 4 V | | | 1.8 | V |
| $h_{FE}$ (1) | DC current gain | $I_C$ = 4 A $V_{CE}$ = 4 V<br>$I_C$ = 10 A $V_{CE}$ = 4 V | 20<br>5 | | 70 | |

1. *Pulse duration = 300 µs, duty cycle ≤1.5%*

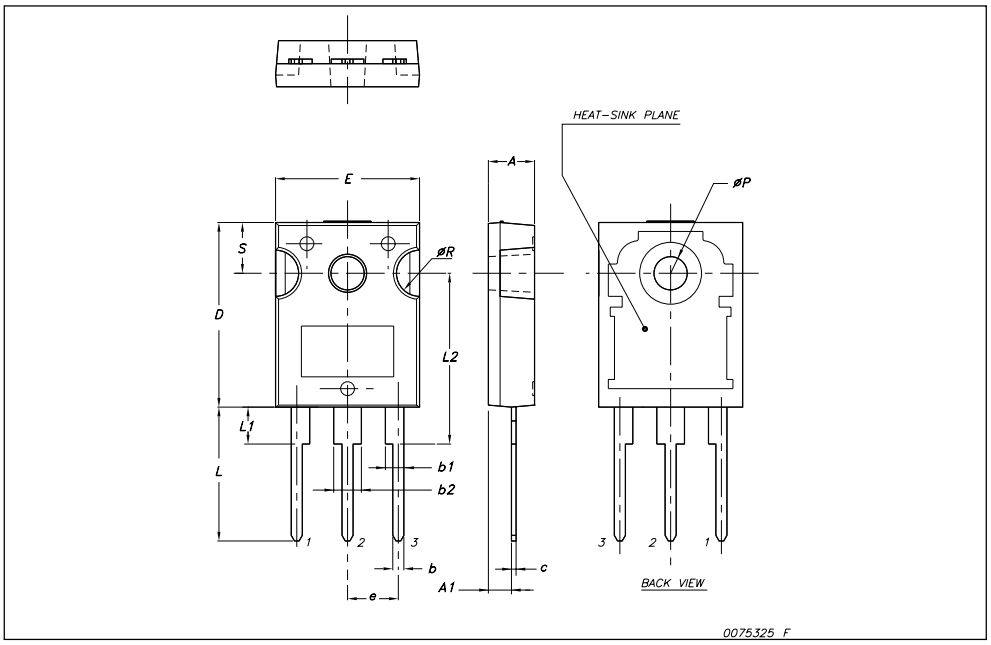
*Note: For PNP type voltage and current values are negative*

# 3 Package mechanical data

In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a Lead-free second level interconnect . The category of second level interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at : *www.st.com*

## TO-247 Mechanical data

| Dim. | mm. | | |
|---|---|---|---|
| | Min. | Typ | Max. |
| A | 4.85 | | 5.15 |
| A1 | 2.20 | | 2.60 |
| b | 1.0 | | 1.40 |
| b1 | 2.0 | | 2.40 |
| b2 | 3.0 | | 3.40 |
| c | 0.40 | | 0.80 |
| D | 19.85 | | 20.15 |
| E | 15.45 | | 15.75 |
| e | | 5.45 | |
| L | 14.20 | | 14.80 |
| L1 | 3.70 | | 4.30 |
| L2 | | 18.50 | |
| øP | 3.55 | | 3.65 |
| øR | 4.50 | | 5.50 |
| S | | 5.50 | |



# 4 Revision history

**Table 4. Document revision history**

| Date | Revision | Changes |
|---|---|---|
| 30-Aug-1999 | 4 | |
| 10-Jan-2008 | 5 | Package change from TO-218 to TO-247. |

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