

# 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.

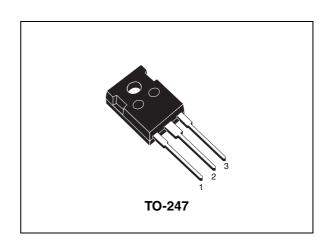


Figure 1. Internal schematic diagrams

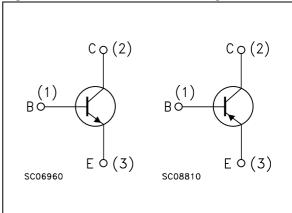


Table 1. Device summary

Order code	Marking	Package	Packaging	
TIP2955	TIP2955	TO-247	tube	
TIP3055	TIP3055	10-247	tube	

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Absolute maximun rating TIP2955 - TIP3055

# 1 Absolute maximun rating

Table 2. Absolute maximum rating

Symbol	Parameter		Value	Unit	
		NPN	TIP3055		
		PNP	TIP2955		
$V_{CBO}$	Collector-emitter voltage (I <sub>E</sub> = 0)		100	V	
V <sub>CER</sub>	Collector-emitter voltage (R <sub>BE</sub> = 100 Ω)		70	V	
V <sub>CEO</sub>	Collector-emitter voltage (I <sub>B</sub> = 0)		60	V	
V <sub>EBO</sub>	Collector-base voltage (I <sub>C</sub> = 0)		7	V	
I <sub>C</sub>	Collector current		15	Α	
I <sub>B</sub>	Base current		7	Α	
P <sub>tot</sub>	Total dissipation at T <sub>c</sub> ≤25°C		90	W	
T <sub>stg</sub>	Storage temperature		-65 to 150	°C	
T <sub>J</sub>	Max. operating junction temperature		150	°C	

Note: For PNP type voltage and current values are negative

TIP2955 - TIP3055 Electrical characteristics

# 2 Electrical characteristics

 $(T_{case} = 25 \, ^{\circ}C; \, unless \, otherwise \, specified)$ 

Table 3. Electrical characteristics

Symbol	Parameter	Test co	nditions	Min.	Тур.	Max.	Unit
I <sub>CEX</sub>	Collector cut-off current (V <sub>BE</sub> = -1.5 V)	V <sub>CE</sub> = 100 V V <sub>CE</sub> = 100 V	T <sub>C</sub> = 150 °C			1 5	mA mA
I <sub>CEO</sub>	Collector cut-off current (I <sub>B</sub> = 0)	V <sub>CE</sub> = 30 V				0.7	mA
I <sub>EBO</sub>	Emitter cut-off current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 7 V				5	mA
V <sub>CEO(sus)</sub> <sup>(1)</sup>	Collector-emitter sustaining voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 200 mA		60			V
V <sub>CER(sus)</sub> <sup>(1)</sup>	Collector-emitter sustaining voltage ( $R_{BE} = 100 \Omega$ )	I <sub>C</sub> = 200 mA		70			V
V <sub>CE(sat)</sub> <sup>(1)</sup>	Collector-emitter saturation voltage	$I_C = 4 A$ $I_C = 10 A$	$I_B = 400 \text{ mA}$ $I_B = 3.3 \text{ A}$			1 3	V V
V <sub>BE</sub> <sup>(1)</sup>	Base-emitter voltage	I <sub>C</sub> = 4 A	V <sub>CE</sub> = 4 V			1.8	V
h <sub>FE</sub> <sup>(1)</sup>	DC current gain	I <sub>C</sub> = 4 A I <sub>C</sub> = 10 A	V <sub>CE</sub> = 4 V V <sub>CE</sub> = 4 V	20 5		70	

<sup>1.</sup> Pulse duration = 300 μs, duty cycle ≤1.5%

Note: For PNP type voltage and current values are negative

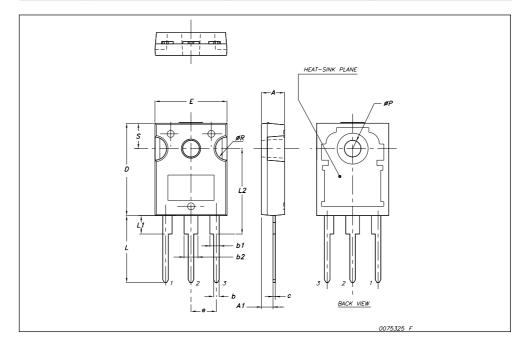
Package mechanical data TIP2955 - TIP3055

# 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: <a href="https://www.st.com">www.st.com</a>

**TO-247 Mechanical data** 

Dim.	mm.				
Diiii.	Min.	Тур	Max.		
Α	4.85		5.15		
A1	2.20		2.60		
b	1.0		1.40		
b1	2.0		2.40		
b2	3.0		3.40		
С	0.40		0.80		
D	19.85		20.15		
Е	15.45		15.75		
е		5.45			
L	14.20		14.80		
L1	3.70		4.30		
L2		18.50			
øΡ	3.55		3.65		
øR	4.50		5.50		
S		5.50			



Revision history TIP2955 - TIP3055

# 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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