TIP2955
TIP3055

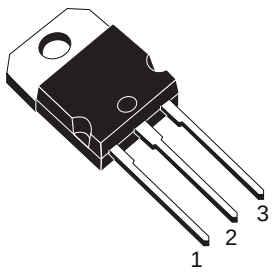
COMPLEMENTARY SILICON POWER TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES

DESCRIPTION

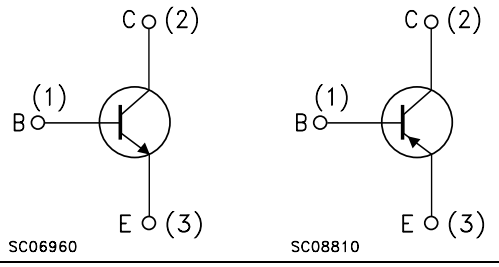
The TIP3055 is a silicon Epitaxial-Base Planar NPN transistor mountend in TO-218 plastic package. It is intented for power switching circuits, series and shunt regulators, output stages and hi-fi amplifiers.

The complementary PNP type is the TIP2955.



TO-218

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
		PNP	TIP2955	
		NPN	TIP3055	
V_{CBO}	Collector-Base Voltage (I_E = 0)		100	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)		60	V
I_C	Collector Current		15	A
I_B	Base Current		7	A
P_{tot}	Total Dissipation at $T_c \leq 25\ ^oC$		90	W
T_{stg}	Storage Temperature		-65 to 150	^oC
T_j	Max. Operating Junction Temperature		150	^oC

For PNP types voltage and current are negative.

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case Max	1.4	$^oC/W$

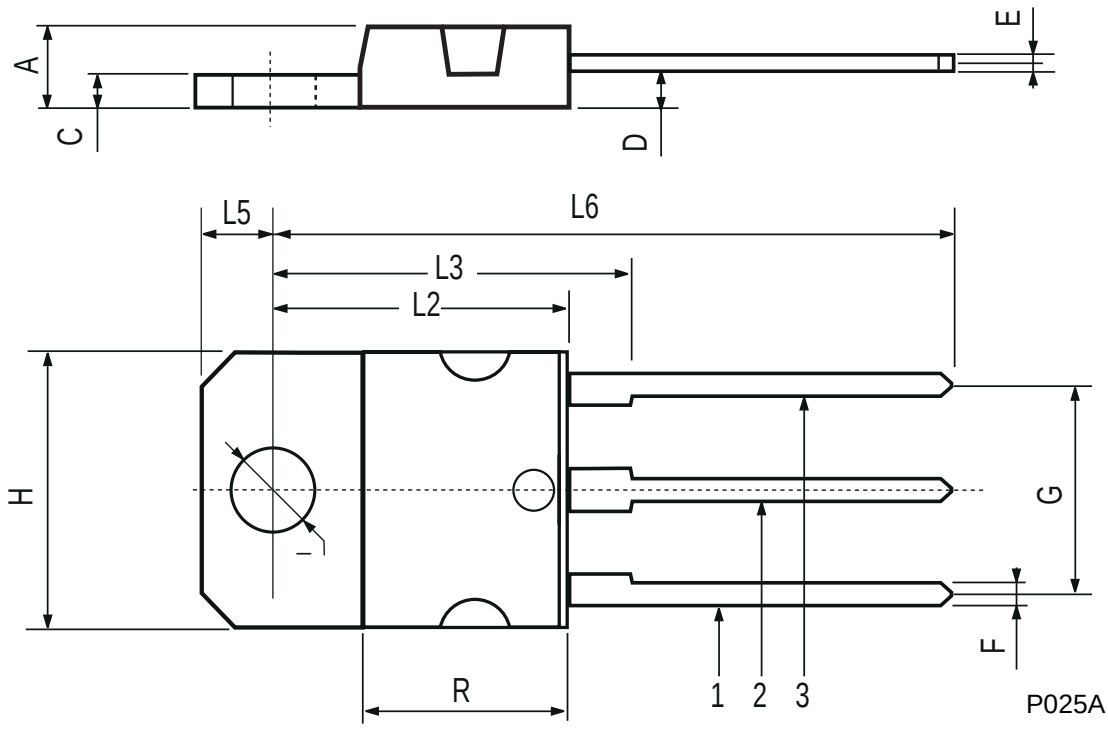
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEX}	Collector Cut-off Current (V_{BE} = -1.5V)	V_{CE} = 100 V V_{CE} = 100 V T_J = 150 ^oC			1 5	mA 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
$V_{CEO(sus)}$*	Collector-Emitter Sustaining Voltage (I_B = 0)	I_C = 30 mA	60			V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 4 A I_B = 0.4 A I_C = 10 A I_B = 3.3 A			1 3	V V
V_{BE}*	Base-emitter Voltage	I_C = 4 A V_{CE} = 4 V			1.8	V
h_{FE}*	DC Current Gain	I_C = 4 A V_{CE} = 4 V I_C = 10 A V_{CE} = 4 V	20 5		70	
h_{fe}	Small Signal Current Gain	I_C = 1 A V_{CE} = 10 V f = 1 KHz	15			
f_T	Transition-Frequency	I_C = 0.5 A V_{CE} = 10 V f = 1 MHz	3			MHz
 t_{on} t_{off}	RESISTIVE LOAD Turn-on Time Turn-off Time	I_C = 6 A I_{B1} = - I_{B2} = 0.6 A R_L = 5 Ω $V_{BE(off)}$ = - 4 V		 0.5 0.9		 µs µs

∗ Pulsed: Pulse duration = 300 µs, duty cycle 1.5 %
For PNP type, voltage and current value are negative.

TO-218 (SOT-93) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.7		4.9	0.185		0.193
C	1.17		1.37	0.046		0.054
D		2.5			0.098	
E	0.5		0.78	0.019		0.030
F	1.1		1.3	0.043		0.051
G	10.8		11.1	0.425		0.437
H	14.7		15.2	0.578		0.598
L2	–		16.2	–		0.637
L3		18			0.708	
L5	3.95		4.15	0.155		0.163
L6		31			1.220	
R	–		12.2	–		0.480
Ø	4		4.1	0.157		0.161



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