

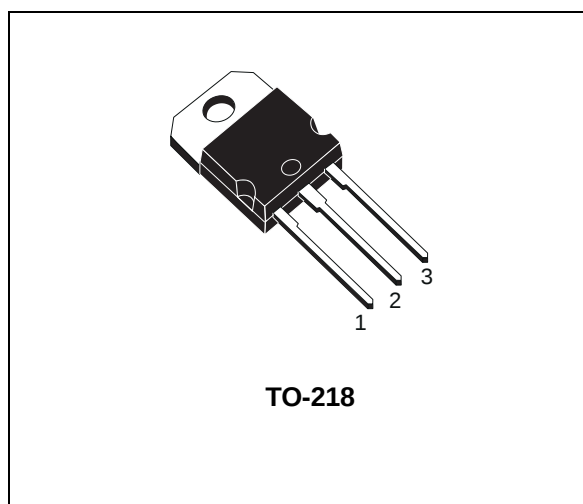
COMPLEMENTARY SILICON POWER TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES

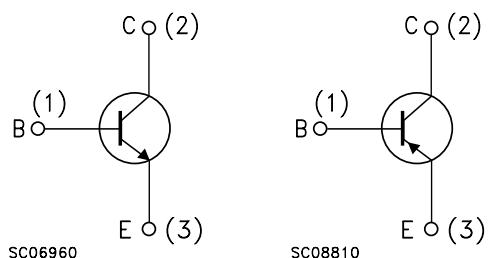
DESCRIPTION

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

The complementary PNP type is the TIP2955.



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 $T_c \leq 25^\circ\text{C}$		90	W
T_{stg}	Storage Temperature		-65 to 150	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature		150	$^\circ\text{C}$

For PNP types voltage and current are negative.

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	1.4	°C/W
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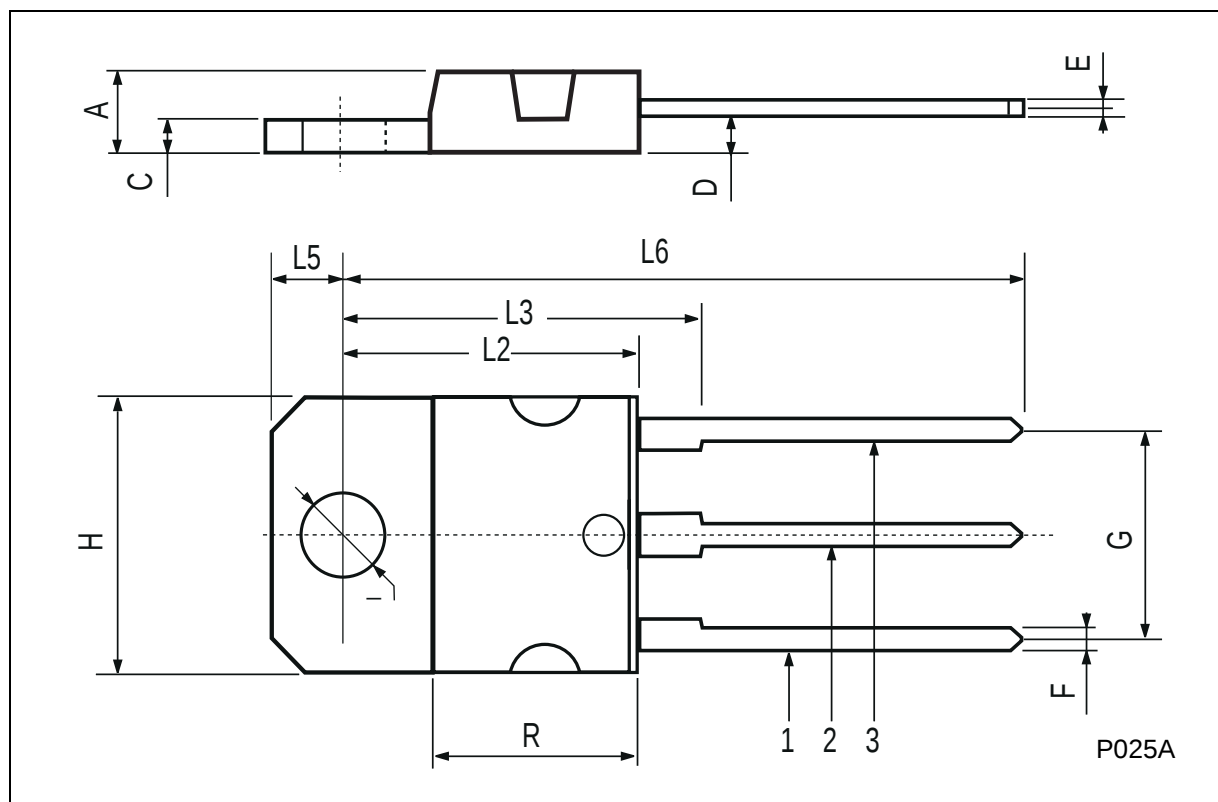
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

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 °C			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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