

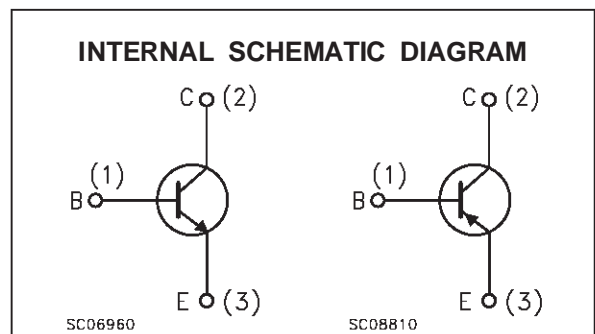
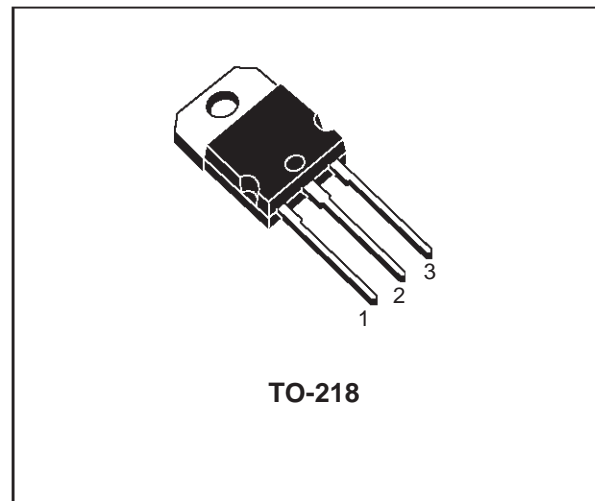
COMPLEMENTARY SILICON POWER TRANSISTORS

- 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 intened for power switching circuits, series and shunt regulators, output stages and hi-fi amplifiers.

The complementary PNP type is the TIP2955.



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	$^{\circ}\text{C/W}$
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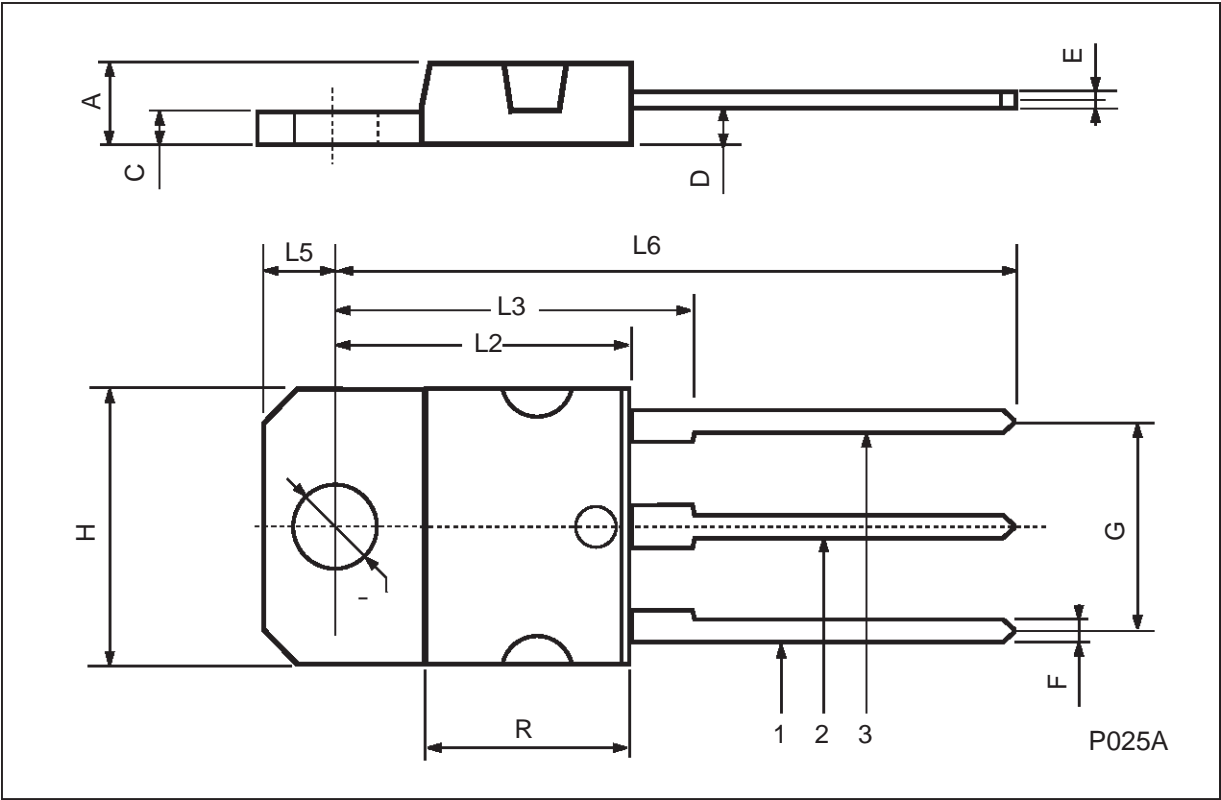
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEX}	Collector Cut-off Current ($V_{BE} = -1.5\text{V}$)	$V_{CE} = 100\text{ V}$ $V_{CE} = 100\text{ V}$ $T_J = 150^{\circ}\text{C}$			1 5	mA mA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 30\text{ V}$			0.7	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 7\text{ V}$			5	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 30\text{ mA}$	60			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 4\text{ A}$ $I_B = 0.4\text{ A}$ $I_C = 10\text{ A}$ $I_B = 3.3\text{ A}$			1 3	V V
V_{BE}^*	Base-emitter Voltage	$I_C = 4\text{ A}$ $V_{CE} = 4\text{ V}$			1.8	V
h_{FE}^*	DC Current Gain	$I_C = 4\text{ A}$ $V_{CE} = 4\text{ V}$ $I_C = 10\text{ A}$ $V_{CE} = 4\text{ V}$	20 5		70	
h_{fe}	Small Signal Current Gain	$I_C = 1\text{ A}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ KHz}$	15			
f_T	Transition-Frequency	$I_C = 0.5\text{ A}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ MHz}$	3			MHz
t_{on} t_{off}	RESISTIVE LOAD Turn-on Time Turn-off Time	$I_C = 6\text{ A}$ $I_{B1} = - I_{B2} = 0.6\text{ A}$ $R_L = 5\ \Omega$ $V_{BE(off)} = -4\text{ V}$		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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