

## COMPLEMENTARY SILICON POWER TRANSISTORS

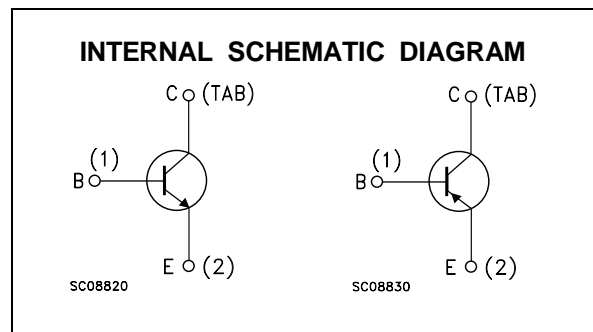
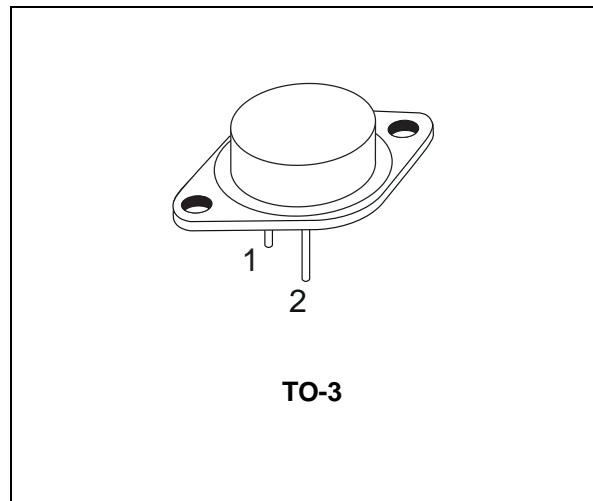
- STMicroelectronics PREFERRED SALESTYPES
- COMPLEMENTARY NPN-PNP DEVICES

### DESCRIPTION

The 2N3055 is a silicon Epitaxial-Base Planar NPN transistor mounted in Jedec TO-3 metal case.

It is intended for power switching circuits, series and shunt regulators, output stages and high fidelity amplifiers.

The complementary PNP type is MJ2955.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		NPN	PNP	
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	100	100	V
$V_{CER}$	Collector-Emitter Voltage ( $R_{BE} \leq 100\Omega$ )	70	70	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	60	60	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	7	7	V
$I_C$	Collector Current	15	15	A
$I_B$	Base Current	7	7	A
$P_{tot}$	Total Dissipation at $T_c \leq 25^\circ\text{C}$	115	115	W
$T_{stg}$	Storage Temperature	-65 to 200		$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	200		$^\circ\text{C}$

For PNP types voltage and current values are negative.

## THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	1.5	°C/W
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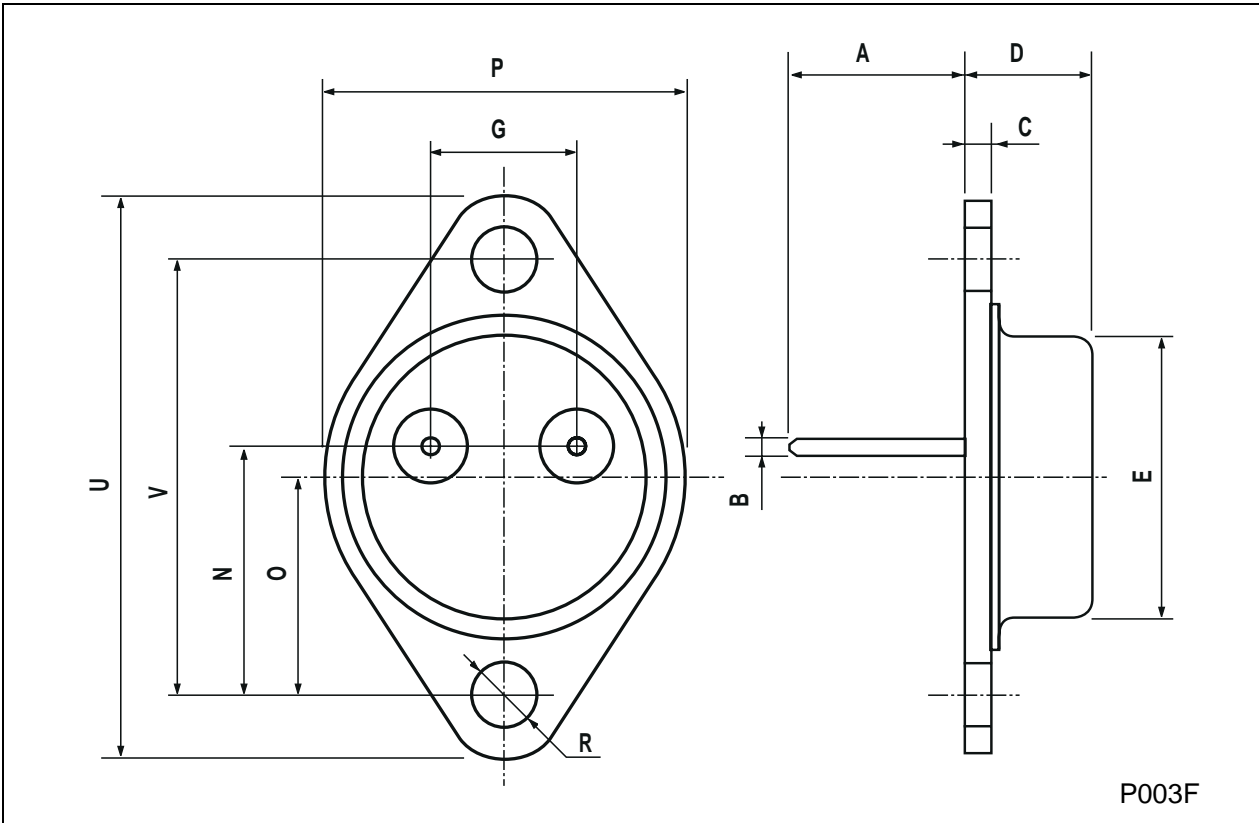
ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CEX</sub>	Collector Cut-off Current (V <sub>BE</sub> = -1.5V)	V <sub>CE</sub> = 100 V V <sub>CE</sub> = 100 V T <sub>j</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>	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 200 mA	60			V
V <sub>CER(sus)*</sub>	Collector-Emitter Sustaining Voltage (R <sub>BE</sub> = 100 Ω)	I <sub>C</sub> = 200 mA	70			V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4 A I <sub>B</sub> = 400 mA I <sub>C</sub> = 10 A I <sub>B</sub> = 3.3 A			1 3	V V
V <sub>BE*</sub>	Base-Emitter Voltage	I <sub>C</sub> = 4 A V <sub>CE</sub> = 4 A			1.8	V
h <sub>FE*</sub>	DC Current Gain	I <sub>C</sub> = 4 A V <sub>CE</sub> = 4 A I <sub>C</sub> = 10 A V <sub>CE</sub> = 4 A	20 5		70	
f <sub>T</sub>	Transition frequency	I <sub>C</sub> = 0.5 A V <sub>CE</sub> = 10 V	3			MHz
I <sub>s/b*</sub>	Second Breakdown Collector Current	V <sub>CE</sub> = 40 V	2.87			A

\* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %  
For PNP types voltage and current values are negative.

**TO-3 MECHANICAL DATA**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	11.00		13.10	0.433		0.516
B	0.97		1.15	0.038		0.045
C	1.50		1.65	0.059		0.065
D	8.32		8.92	0.327		0.351
E	19.00		20.00	0.748		0.787
G	10.70		11.10	0.421		0.437
N	16.50		17.20	0.649		0.677
P	25.00		26.00	0.984		1.023
R	4.00		4.09	0.157		0.161
U	38.50		39.30	1.515		1.547
V	30.00		30.30	1.187		1.193



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