

## COMPLEMENTARY SILICON POWER TRANSISTORS

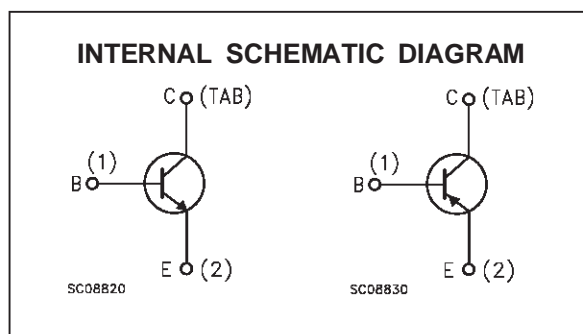
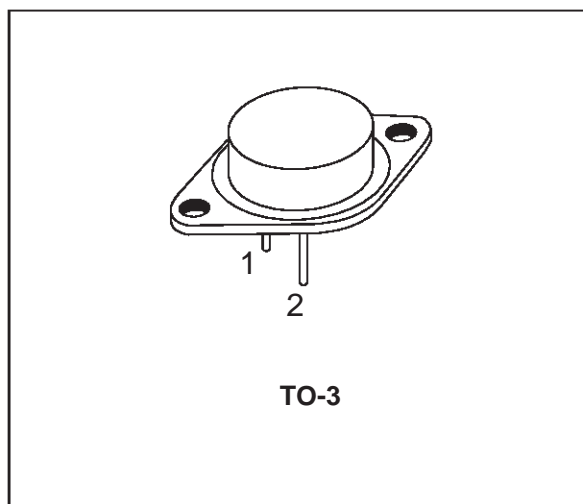
- STMicroelectronics PREFERRED SALESTYPES
- COMPLEMENTARY NPN-PNP DEVICES

### 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	2N3055	
		PNP	MJ2955	
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )		100	V
$V_{CER}$	Collector-Emitter Voltage ( $R_{BE} \leq 100\Omega$ )		70	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )		60	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )		7	V
$I_C$	Collector Current		15	A
$I_B$	Base Current		7	A
$P_{tot}$	Total Dissipation at $T_c \leq 25^\circ\text{C}$		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

$R_{thj-case}$	Thermal Resistance Junction-case	Max	1.5	$^{\circ}\text{C/W}$
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ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}\text{C}$  unless otherwise specified)

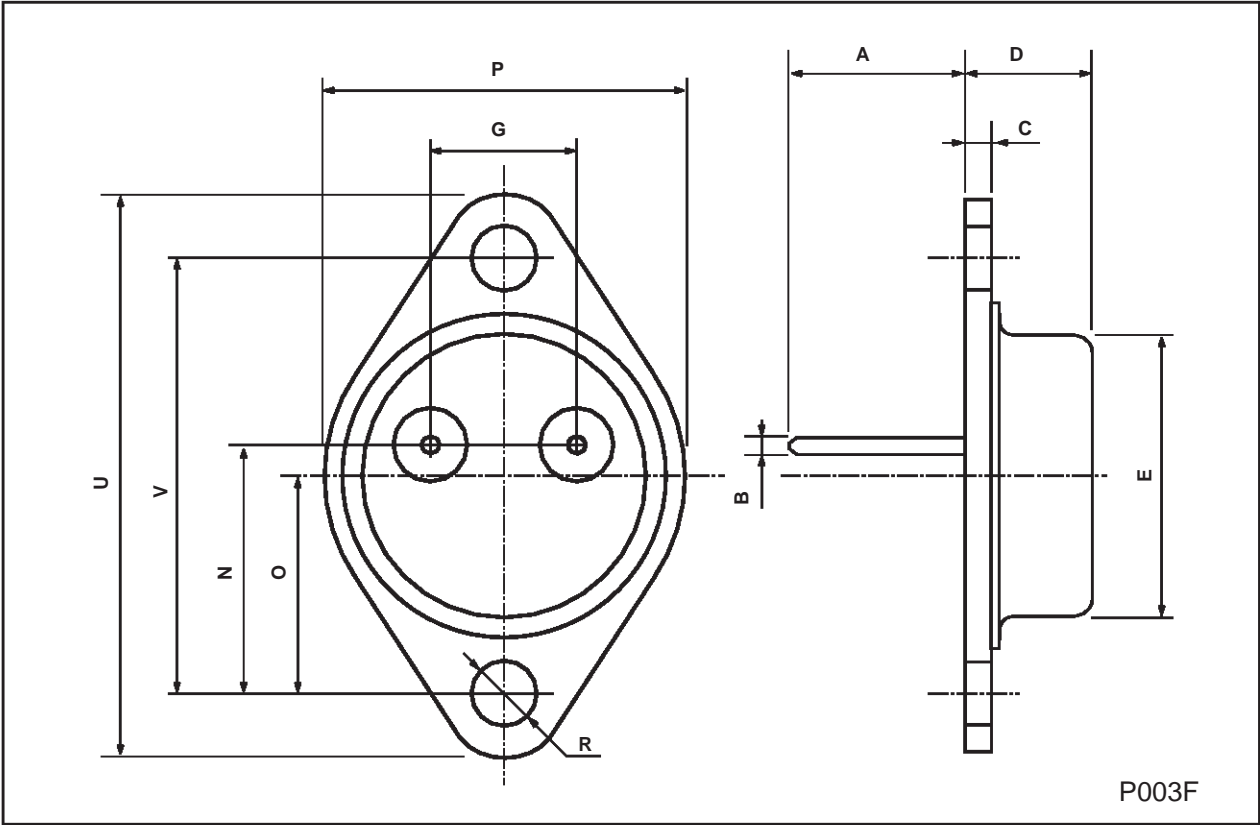
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CEX}$	Collector Cut-off Current ( $V_{BE} = -1.5\text{V}$ )	$V_{CE} = 100\text{ V}$ $V_{CE} = 100\text{ V}$ $T_j = 150^{\circ}\text{C}$			1 5	mA mA
$I_{CEO}$	Collector Cut-off Current ( $I_B = 0$ )	$V_{CE} = 30\text{ V}$			0.7	mA
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 7\text{ V}$			5	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 200\text{ mA}$	60			V
$V_{CER(sus)}^*$	Collector-Emitter Sustaining Voltage ( $R_{BE} = 100\ \Omega$ )	$I_C = 200\text{ mA}$	70			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 4\text{ A}$ $I_B = 400\text{ mA}$ $I_C = 10\text{ A}$ $I_B = 3.3\text{ A}$			1 3	V V
$V_{BE}^*$	Base-Emitter Voltage	$I_C = 4\text{ A}$ $V_{CE} = 4\text{ A}$			1.8	V
$h_{FE}^*$	DC Current Gain	$I_C = 4\text{ A}$ $V_{CE} = 4\text{ A}$ $I_C = 10\text{ A}$ $V_{CE} = 4\text{ A}$	20 5		70	
$f_T$	Transition frequency	$I_C = 0.5\text{ A}$ $V_{CE} = 10\text{ V}$	3			MHz
$I_{s/b}^*$	Second Breakdown Collector Current	$V_{CE} = 40\text{ V}$	2.87			A

\* Pulsed: Pulse duration = 300  $\mu\text{s}$ , 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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