

2N3055 – NPN

MJ2955 – PNP

SILICON POWER TRANSISTORS

FEATURES

- Available as “HR” (high reliability) screened per MIL-PRF-19500, JANTX level. Add “HR” suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding “-PBF” suffix.

MAXIMUM RATINGS

Ratings	Symbol	2N3055	MJ2955	Unit
Collector-emitter voltage	V_{CEO}	60		V
Collector-emitter voltage	V_{CER}	70		V
Collector-base voltage	V_{CBO}	100		V
Emitter-base voltage	V_{EBO}	7.0		V
Collector current	I_C	15		A
Base current	I_B	7.0		A
Total power dissipation @ $T_A = 25^\circ\text{C}$	P_T	115		W
@ $T_C = 25^\circ\text{C}$		0.657		W/ $^\circ\text{C}$
Operating junction and storage temperature range	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$
THERMAL CHARACTERISTICS				
Maximum thermal resistance, junction-to-case	$R_{\theta JC}$	1.52		$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Characteristics	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
Collector-emitter sustaining voltage ⁽¹⁾ $I_C = 200\text{mA}, I_B = 0$	$V_{(BR)SUS}$	60	-	V
Collector-emitter sustaining voltage ⁽¹⁾ $I_C = 200\text{mA}, R_{BE} = 100\Omega$	$V_{(BR)CER}$	70	-	V
Collector cutoff current $V_{CB} = 30\text{V}, V_{BE(OFF)} = 1.5\text{V}$ $V_{CB} = 30\text{V}, V_{BE(OFF)} = 1.5\text{V}, T_C = 150^\circ\text{C}$	I_{CEX}	-	1.0 5.0	mA
Emitter cutoff current $V_{EB} = 7\text{V}, I_C = 0$	I_{EBO}	-	5.0	mA
ON-CHARACTERISTICS⁽¹⁾				
DC current gain $I_C = 4.0\text{A}, V_{CE} = 4.0\text{V}$ $I_C = 10\text{A}, V_{CE} = 4.0\text{V}$	h_{FE}	20 5.0	70 -	-
Collector-emitter saturation voltage $I_C = 4.0\text{A}, I_B = 0.4\text{A}$ $I_C = 10\text{A}, I_B = 3.3\text{A}$	$V_{CE(sat)}$	- -	1.1 3.0	V
Base-emitter voltage $I_C = 4.0\text{A}, V_{CE} = 4.0\text{V}$	V_{BE}	-	1.5	V
DYNAMIC CHARACTERISTICS				
Current gain – bandwidth product ⁽²⁾ $I_C = 500\text{mA}, V_{CE} = 10\text{V}, f = 1.0\text{MHz}$	f_T	2.5	-	-

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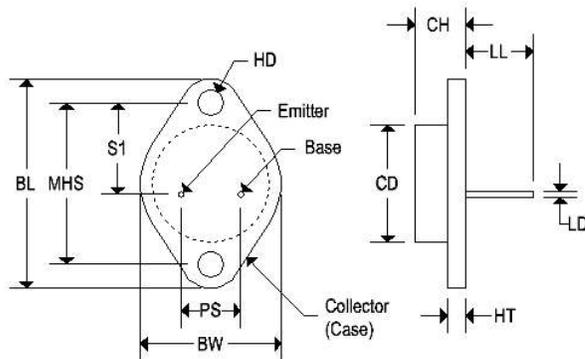
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Characteristics	Symbol	Min.	Max.	Unit
DYNAMIC CHARACTERISTICS				
Small signal current gain I _C = 1.0A, V _{CE} = 4.0 V, f = 100 kHz	h _{fe}	15	120	-

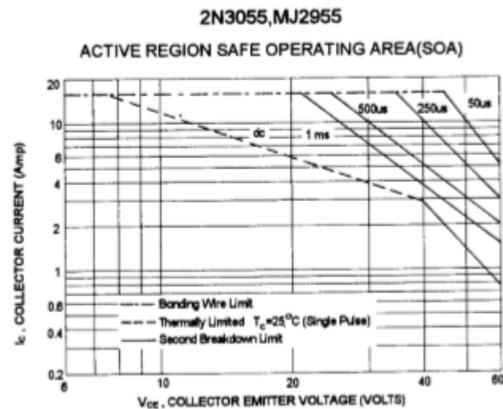
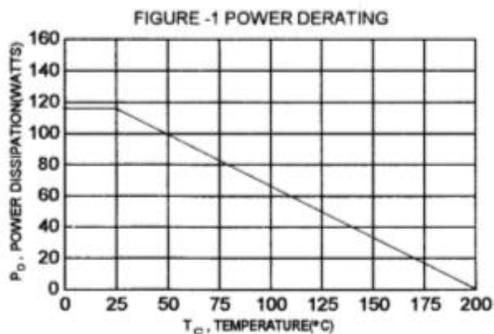
Note 1: Pulse test: pulse width = 300μs, duty cycle ≤ 2.0%.
Note 2: I_{hfe1} * f_{test}

MECHANICAL CHARACTERISTICS

Case	TO-3
Marking	Alpha-numeric
Polarity	See below



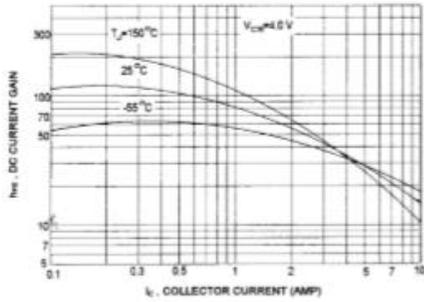
	TO-3			
	Inches		Millimeters	
	Min	Max	Min	Max
CD	-	0.875	-	22.220
CH	0.250	0.335	6.350	8.510
HT	0.055	0.135	1.400	3.430
BW	-	1.050	-	26.670
HD	0.131	0.188	3.330	4.780
LD	0.038	0.043	0.970	1.090
LL	0.312	0.500	7.920	12.700
BL	1.550 REF		39.370 REF	
MHS	1.177	1.197	29.900	30.400
PS	0.420	0.440	10.670	11.180
S1	0.655	0.675	16.640	17.150



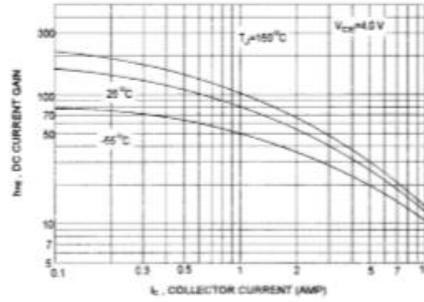
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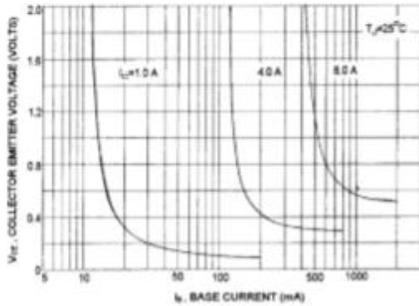
NPN 2N3055
DC CURRENT GAIN



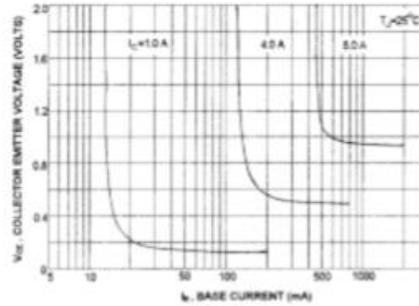
PNP MJ2955
DC CURRENT GAIN



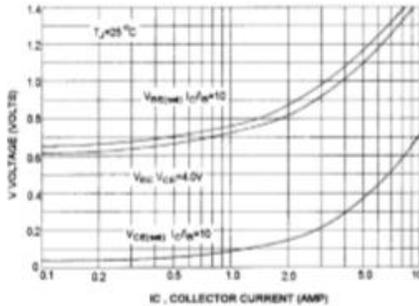
COLLECTOR SATURATION REGION



COLLECTOR SATURATION REGION



"ON" VOLTAGES



"ON" VOLTAGES

