

## 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

Parameters	Symbol	2N3054A	2N3054	Unit
Collector-Emitter Voltage	$V_{CEO}$	55		V
Collector-Emitter Voltage $R_{BE} = 100 \Omega$	$V_{CER}$	60		V
Collector-Base Voltage	$V_{CB}$	90		V
Emitter-Base Voltage	$V_{EB}$	7.0		V
Collector Current Continuous Peak	$I_C$	4.0 10		A
Base Current	$I_B$	2.0		A
Total Power Dissipation @ $T_c = 25^\circ\text{C}$ Derate above $T_c = 25^\circ\text{C}$	$P_D$	75 0.43	25 0.143	W W/ $^\circ\text{C}$
Operating and Storage Temperature Range	$T_J, T_{stg}$	-65 to 200		$^\circ\text{C}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.33	7.0	$^\circ\text{C}/\text{W}$

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

Parameters	Symbol	Min	Max	Unit
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### OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage <sup>(1)</sup> $I_C = 100 \text{ mA}, I_B = 0$	$V_{CEO(sus)}$	55	-	Vdc
Collector-Emitter Sustaining Voltage <sup>(1)</sup> $I_C = 100 \text{ mA}, R_{BE} = 100 \Omega$	$V_{CER(sus)}$	60	-	Vdc
Collector Cutoff Current $V_{CE} = 30 \text{ V}, I_B = 0$	$I_{CEO}$	-	500	$\mu\text{Adc}$
Collector Cutoff Current $V_{CE} = 90 \text{ V}, V_{EB} = 1.5 \text{ V}$ $V_{CE} = 90 \text{ V}, V_{EB} = 1.5 \text{ V}, T_c = 150^\circ\text{C}$	$I_{CEX}$	-	1.0 6.0	mAdc
Emitter Cutoff Current $V_{EB} = 4.0 \text{ V}, I_C = 0$	$I_{EBO}$	-	1.0	mAdc

### ON CHARACTERISTICS

DC Current Gain <sup>(1)</sup> $V_{CE} = 4.0 \text{ V}, I_C = 500 \text{ mA}$	$h_{FE}$	25	150	-
DC Current Gain <sup>(1)</sup> $V_{CE} = 4.0 \text{ V}, I_C = 3.0 \text{ A}$	$h_{FE}$	5.0	-	-
Collector-Emitter Saturation Voltage <sup>(1)</sup> $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$ $I_C = 3.0 \text{ A}, I_B = 1.0 \text{ A}$	$V_{CE(sat)}$	-	1.0 6.0	Vdc
Base-Emitter On Voltage <sup>(1)</sup> $V_{CE} = 4.0 \text{ V}, I_C = 500 \text{ mA}$	$V_{BE(on)}$	-	1.7	Vdc

### DYNAMIC CHARACTERISTICS

Current-Gain-Bandwidth Product $V_{CE} = 10 \text{ V}, I_C = 200 \text{ mA}$	$f_T$	3.0	-	MHz
Small-Signal Current Gain $V_{CE} = 4.0 \text{ V}, I_C = 100 \text{ mA}, f = 1.0 \text{ kHz}$	$h_{fe}$	25	180	--
Common-Emitter Cutoff Frequency $V_{CE} = 4.0 \text{ V}, I_C = 100 \text{ mA}$	$f_{hfe}$	30	-	kHz

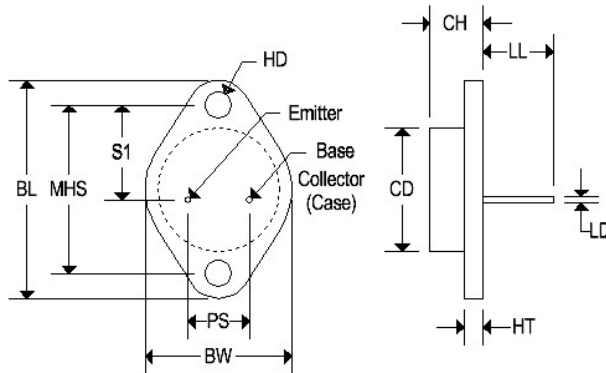
Note 1: Pulse width  $\leq 300 \mu\text{s}$ , duty cycle  $\leq 2\%$ .

# 2N3054(A)

MEDIUM POWER NPN SILICON TRANSISTORS

## MECHANICAL CHARACTERISTICS

Case	TO-66
Marking	Alpha-numeric
Polarity	See below



Dim	TO-66			
	Inches		Millimeters	
	Min	Max	Min	Max
BL	1.205	1.280	30.60	32.50
CD	0.445	0.557	11.303	14.148
CH	0.257	0.284	6.540	7.220
LL	0.374	0.413	9.500	10.50
BW	0.680	0.727	17.26	18.46
LD	0.030	0.036	0.760	0.920
HT	0.054	0.065	1.380	1.650
MHS	0.951	0.976	24.16	24.78
S1	0.545	0.614	13.84	15.60
HD	0.131	0.154	3.320	3.920
PS	0.191	0.210	4.860	5.340