

# Power Transistor 15A



## Features:

- The 2N3055H is a Silicon power base transistor for high power audio, seriespass power supplies, disk-head positioners and other linear application. These devices can also be used in power switching circuits such as converters or inverters
- Higher safe operating area than 2N3055 at  $V_{CE} > 40V$
- Low saturation voltages
- High power dissipation capability

## Maximum Ratings

Rating	Symbol	Rating	Unit
Collector-Emitter Voltage	$V_{CEO}$	60	V
Collector-Emitter Voltage	$V_{CER}$	70	
Collector-Base Voltage	$V_{CBO}$	100	
Emitter-Base Voltage	$V_{EBO}$	7	
Collector Current-Continuous	$I_C$	15	A
Base Current	$I_B$	7	
Total Power Dissipation at $T_C = 25^\circ C$ Derate above $25^\circ C$	$P_D$	115 0.657	W W/ $^\circ C$
Operating and Storage Junction Temperature Range	$T_J, T_{STG}$	-65 to +200	$^\circ C$

## Thermal Characteristics

Characteristic	Symbol	Max.	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1.52	$^\circ C/W$

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## Electrical Characteristics ( $T_C = 25^\circ\text{C}$ unless otherwise notes)

Characteristic	Symbol	Min.	Max.	Unit
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### OFF Characteristics (1)

Collector-Emitter Sustaining Voltage ( $I_C = 200\text{mA}$ , $I_B = 0$ )	$V_{\text{CEO(sus)}}$	60	-	V
Collector-Emitter Sustaining Voltage ( $I_C = 200\text{mA}$ , $R_{\text{BE}} = 100\Omega$ )	$V_{\text{CER(sus)}}$	70	-	
Collector-Emitter Sustaining Voltage ( $I_C = 100\text{mA}$ , $V_{\text{BE(off)}} = 1.5\text{V}$ )	$V_{\text{CEX(sus)}}$	90	-	
Collector Cut off Current ( $V_{\text{CE}} = 30\text{V}$ , $I_B = 0$ )	$I_{\text{CEO}}$	-	0.7	mA
Collector Cut off Current ( $V_{\text{CE}} = 100\text{V}$ , $V_{\text{BE(off)}} = 1.5\text{V}$ ) ( $V_{\text{CE}} = 100\text{V}$ , $V_{\text{BE(off)}} = 1.5\text{V}$ , $T_C = 150^\circ\text{C}$ )	$I_{\text{CEX}}$	-	1 5	
Emitter Cut off Current ( $V_{\text{EB}} = 7\text{V}$ , $I_C = 0$ )	$I_{\text{EBO}}$	-	5	

### ON Characteristics

DC Current Gain ( $I_C = 4\text{A}$ , $V_{\text{CE}} = 4\text{V}$ ) ( $I_C = 10\text{A}$ , $V_{\text{CE}} = 4\text{V}$ )	$h_{\text{FE}}$	20 5	70	-
Collector-Emitter Saturation Voltage ( $I_C = 4\text{A}$ , $I_B = 0.4\text{A}$ ) ( $I_C = 10\text{A}$ , $I_B = 3.3\text{A}$ )	$V_{\text{CE(sat)}}$	-	1.1 8	V
Base-Emitter on Voltage ( $I_C = 4\text{A}$ , $V_{\text{CE}} = 4\text{V}$ )	$V_{\text{BE(on)}}$	-	1.8	

### Second Breakdown

Second Breakdown Collector Current with Base Forward Based ( $t = 1\text{s}$ (non-repetitive), $V_{\text{CE}} = 60\text{V}$ )	$I$	800	-	kHz
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### Dynamic Characteristics

Current Gain-Bandwidth Product (2) ( $I_C = 1\text{A}$ , $V_{\text{CE}} = 4\text{V}$ )	$f$	800	-	kHz
Small-Signal Current Gain ( $I_C = 1\text{A}$ , $V_{\text{CE}} = 4\text{V}$ , $f = 1\text{kHz}$ )	$h$	10	-	-

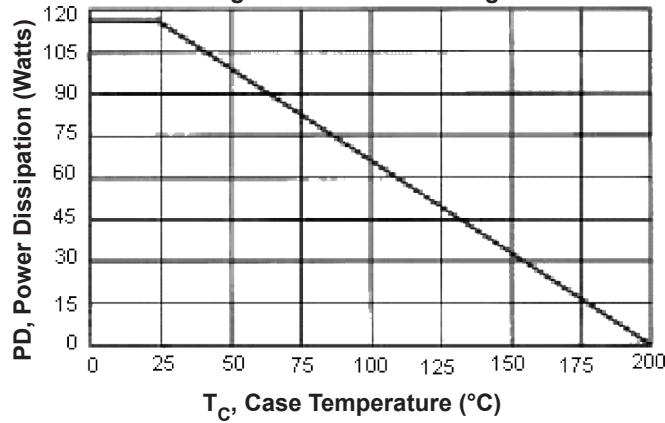
(1) Pulse Test : Pulse Width =  $300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

(2)  $f_T = |h_{\text{fe}}| \cdot f_{\text{test}}$

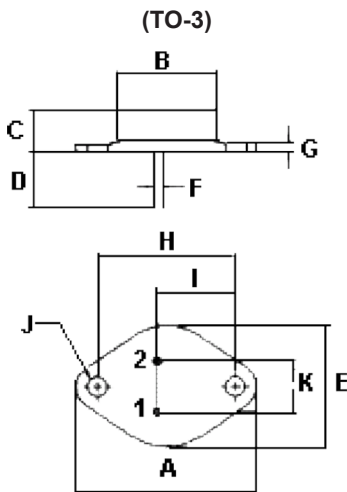
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Figure 1 - Power Derating



## Dimensions



Dimensions	Min.	Max.
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.2	26.67
F	0.92	1.09
G	1.38	1.62
H	29.9	30.4
I	16.64	17.3
J	3.88	4.36
K	10.67	11.18

Dimensions : Millimetres

## Pin Configuration

1. Base
2. Emitter
- Collector
- (Case)

## Part Number Table

Description	Part Number
NPN Silicon Transistors, 60V, 115W	2N3055H

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