

Power Transistor 15A

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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_{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_{CEX}	-	1 5	
Emitter Cut off Current ($V_{\text{EB}} = 7\text{V}$, $I_C = 0$)	I_{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_{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

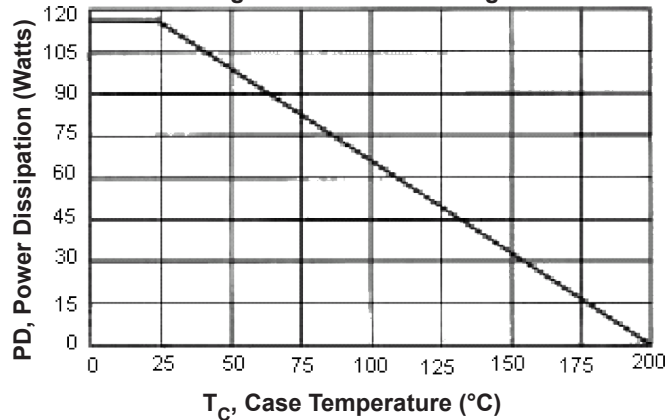
Current Gain-Bandwidth Product (2) ($I_C = 1\text{A}$, $V_{\text{CE}} = 4\text{V}$)	f	800	-	kHz
Small-Signal Current Gain ($I_C = 1\text{A}$, $V_{\text{CE}} = 4\text{V}$, $f = 1\text{kHz}$)	h	10	-	-

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

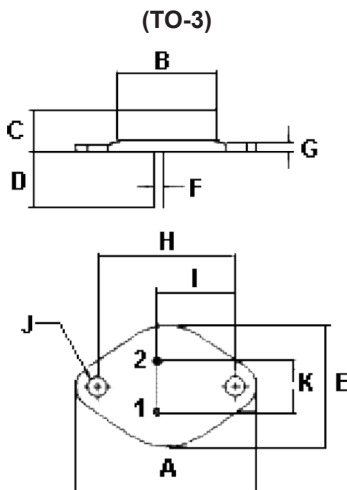
(2) $f_T = |h_{\text{fe}}| \cdot f_{\text{test}}$

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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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