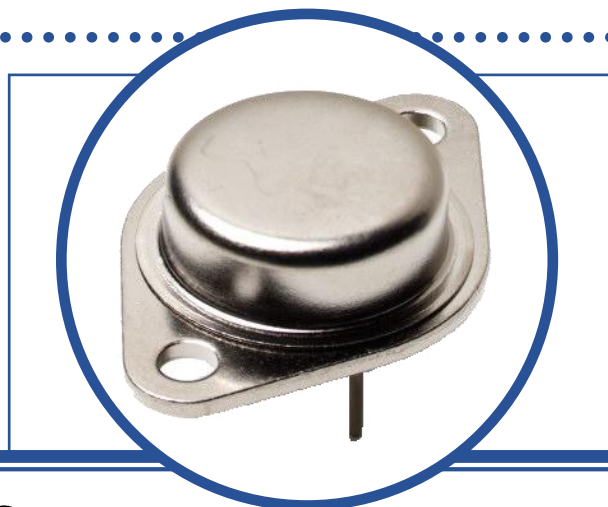


SILICON NPN POWER TRANSISTOR

2N3055

- High Gain At High Current.
- Hermetic TO3 Metal package.
- Ideally Suited For General Purpose Switching And Amplifier Applications
- Screening Options Available



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

V_{CBO}	Collector – Base Voltage	100V
V_{CEO}	Collector – Emitter Voltage	70V
V_{EBO}	Emitter – Base Voltage	7V
I_C	Continuous Collector Current	15A
I_B	Base Current	7A
P_D	Total Power Dissipation at $T_A = 25^\circ\text{C}$	6W
	Derate Above 25°C	34.3mW/ $^\circ\text{C}$
P_D	Total Power Dissipation at $T_C = 25^\circ\text{C}$	117W
	Derate Above 25°C	0.67W/ $^\circ\text{C}$
T_J	Junction Temperature Range	-65 to +200 $^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65 to +200 $^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	29.17	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance, Junction To Case	1.5	$^\circ\text{C}/\text{W}$

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.



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SILICON NPN POWER TRANSISTOR 2N3055

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 20\text{mA}$ $I_B = 0$	70			V
$V_{(BR)CER}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 20\text{mA}$ $R_{BE} = 100\Omega$	80			
$V_{(BR)CEX}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 20\text{mA}$ $V_{BE} = -1.5\text{V}$	90			
I_{CEO}	Collector Cut-Off Current	$V_{CE} = 60\text{V}$ $I_B = 0$			1.0	mA
I_{CEX}	Collector Cut-Off Current	$V_{CE} = 100\text{V}$ $V_{BE} = -1.5\text{V}$			1.0	
		$T_A = 150^\circ\text{C}$			10	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 7\text{V}$ $I_C = 0$			1.0	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 0.5\text{A}$ $V_{CE} = 4\text{V}$	40			
		$I_C = 4\text{A}$ $V_{CE} = 4\text{V}$	20		70	
		$T_A = -55^\circ\text{C}$	15			
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 4\text{A}$ $I_B = 0.4\text{A}$			0.75	V
		$I_C = 10\text{A}$ $I_B = 3.3\text{A}$			2	
$V_{BE(on)}^{(1)}$	Base-Emitter On Voltage	$I_C = 4\text{A}$ $V_{CE} = 4\text{V}$			1.4	

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	$I_C = 1.0\text{A}$ $V_{CE} = 4\text{V}$ $f = 1.0\text{MHz}$	0.8		4	MHz
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			700	pF
t_{on}	Turn-On Time	$I_C = 4\text{A}$ $V_{CC} = 30\text{V}$ $I_{B1} = 0.4\text{A}$			6	μs
t_{off}	Turn-Off Time	$I_C = 4\text{A}$ $V_{CC} = 30\text{V}$ $I_{B1} = -I_{B2} = 0.4\text{A}$			12	

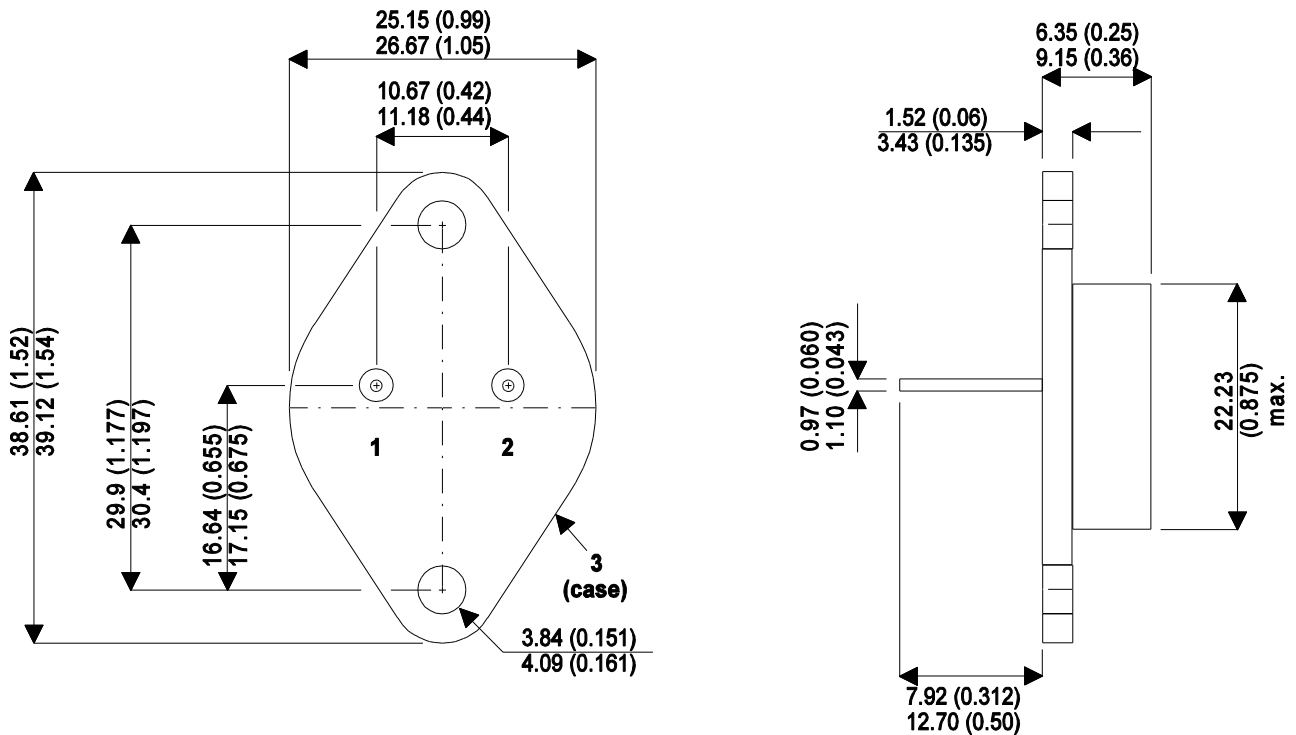
Notes

(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

SILICON NPN POWER TRANSISTOR 2N3055

MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AA) METAL PACKAGE Underside View

Pin 1 - Base

Pin 2 - Emitter

Case - Collector