

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	$^\circ\text{C}/\text{W}$

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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	

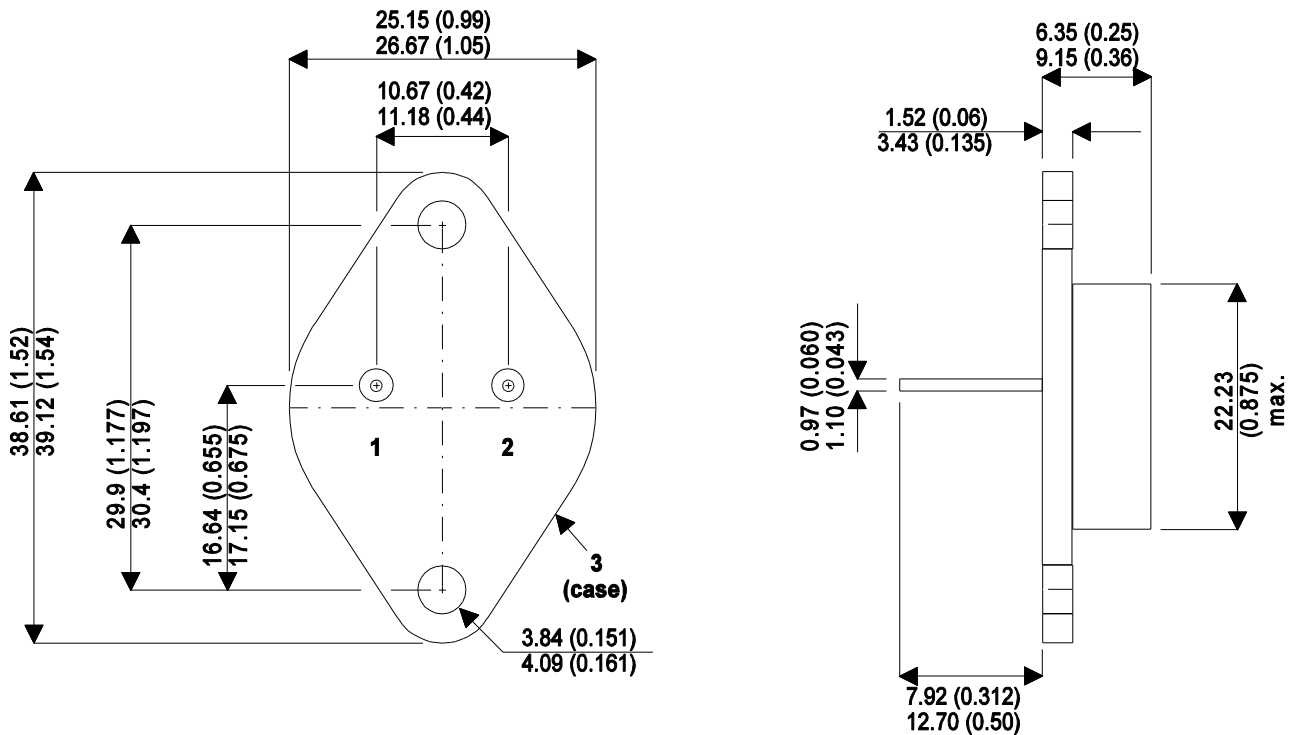
Notes

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

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MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AA) METAL PACKAGE Underside View

Pin 1 - Base

Pin 2 - Emitter

Case - Collector