SILICON NPN POWER TRANSISTOR

TT electronics
Semelab Limited

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°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°C	6W
		Derate Above 25°C	34.3mW/°C
P_D	Total Power Dissipation at	T_C = 25°C	117W
		Derate Above 25°C	0.67W/°C
T_J	Junction Temperature Range		-65 to +200°C
T_{stg}	Storage Temperature Range		-65 to +200°C

THERMAL PROPERTIES

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

SEMELAB
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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
$V_{(BR)CEO}$[1]	Collector-Emitter Breakdown Voltage	I_C = 20mA	I_B = 0	70			V
$V_{(BR)CER}$[1]	Collector-Emitter Breakdown Voltage	I_C = 20mA	R_{BE} = 100Ω	80			
$V_{(BR)CEX}$[1]	Collector-Emitter Breakdown Voltage	I_C = 20mA	V_{BE} = -1.5V	90			
I_{CEO}	Collector Cut-Off Current	V_{CE} = 60V	I_B = 0			1.0	mA
I_{CEX}	Collector Cut-Off Current	V_{CE} = 100V	V_{BE} = -1.5V			1.0	
			T_A = 150°C			10	
I_{EBO}	Emitter Cut-Off Current	V_{EB} = 7V	I_C = 0			1.0	
h_{FE}[1]	Forward-current transfer ratio	I_C = 0.5A	V_{CE} = 4V	40			
		I_C = 4A	V_{CE} = 4V	20		70	
			T_A = -55°C	15			
		I_C = 10A	V_{CE} = 4V	5			
$V_{CE(sat)}$[1]	Collector-Emitter Saturation Voltage	I_C = 4A	I_B = 0.4A			0.75	V
		I_C = 10A	I_B = 3.3A			2	
$V_{BE(on)}$[1]	Base-Emitter On Voltage	I_C = 4A	V_{CE} = 4V			1.4	

DYNAMIC CHARACTERISTICS

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

Notes
(1) Pulse Width ≤ 300us, δ ≤ 2%

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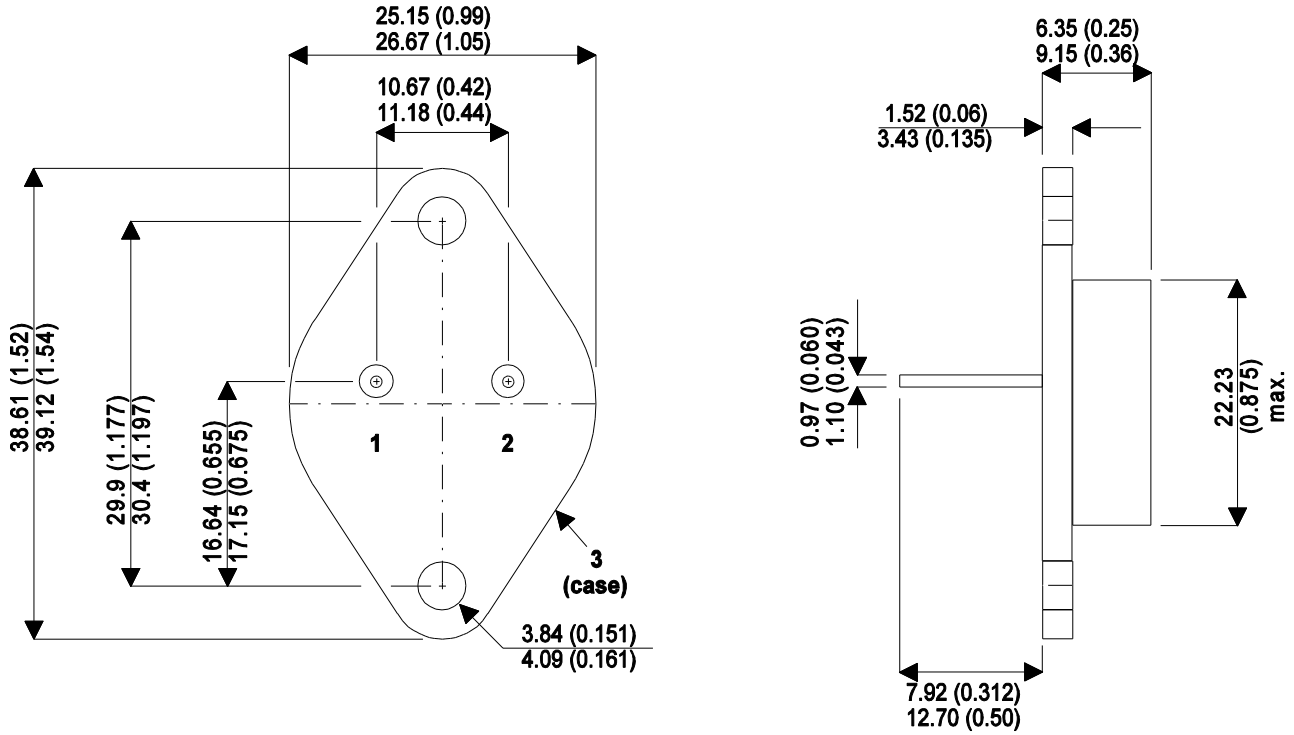
MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AA) METAL PACKAGE

Underside View

Pin 1 - Base Pin 2 - Emitter Case - Collector