SILICON NPN POWER TRANSISTOR

2N3055

Features:

- High Gain At High Current.
- Hermetic TO-3 (TO-204AA) Metal Package.
- Ideally Suited For General Purpose Switching and Amplifier Applications.
- Screening Options Available.

Absolute Maximum Ratings (T_A = 25°C unless otherwise noted)

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 Cirrenr		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

SYMBOL	PARAMETER	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

General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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Electrical Specifications

Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	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
$V_{(BR)CEX}$(1)	Collector - Emitter Breakdown Voltage	I_C = 20mA	V_{BE} = -1.5V	90			V
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	mA
		V_{CE} = 100V	V_{BE} = -1.5V T_A = 150°C			10	mA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 7V	I_C = 0			1.0	mA
h_{FE}(1)	DC Current Gain	V_{CE} = 4V	I_C = 0.5A	40			
		V_{CE} = 4V	I_C = 4A	20		70	
		V_{CE} = 4V	I_C = 4A T_A = -55°C	15			
		V_{CE} = 4V	I_C = 10A	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
$V_{BE(on)}$(1)	Base - Emitter Saturation Voltage	V_{CE} = 4V	I_C = 4A			1.4	V

Dynamic Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	TEST CONDITIONS		MIN	TYP	MAX	UNITS
f_T	Transition Frequency	V_{CE} = 10V f = 1.0MHz	I_C = 0.5A	2.5			MHz
C_{obo}	Output Capacitance	V_{CB} = 10V f = 1.0MHz	I_E = 0			700	pF
t_{on}	Turn-On Time	V_{CC} = 30V I_{B1} = 0.4A	I_C = 4A			6	µs
t_{off}	Turn-Off Time	V_{CC} = 30V I_{B1} = -I_{B2} = 0.4A	I_C = 4A			12	µs

Notes:

(1) Pulse Width ≤ 380us, δ ≤ 2%.

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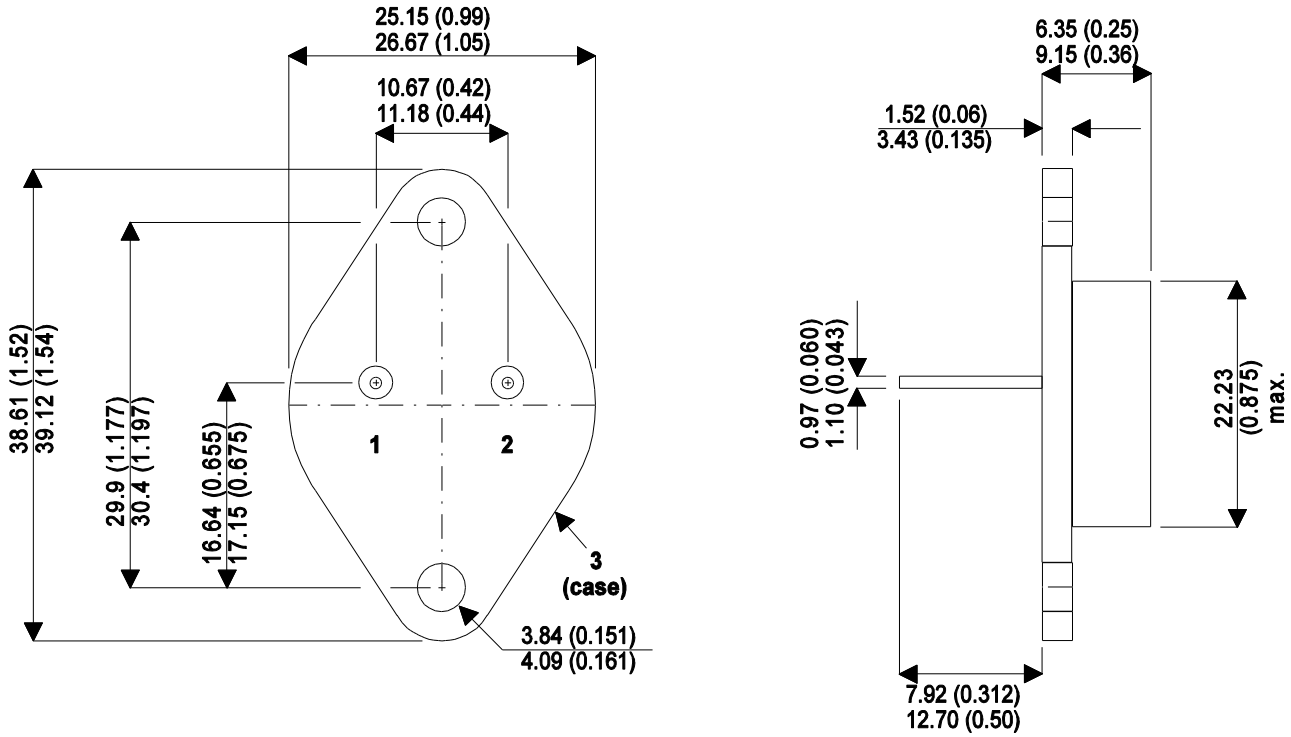
Packaging

Mechanical Data

Dimensions in mm (Inches)



TO-3 (TO-204AA) METAL PACKAGE

Underside View

Pin 1 - Base Pin 2 - Emitter Case - Collector

PART NUMBER VARIANTS

Part Number Reference	Termination Finish[i]	SML ROHS
2N3055	Pre-tinned 63% Tin, 37% Lead	LD[ii]

Notes:

i. Other lead finish options available. Specify lead finish requirements at point of order.

ii. G4 = e0 as defined in J-STD-609 2nd Level Interconnect Category.

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