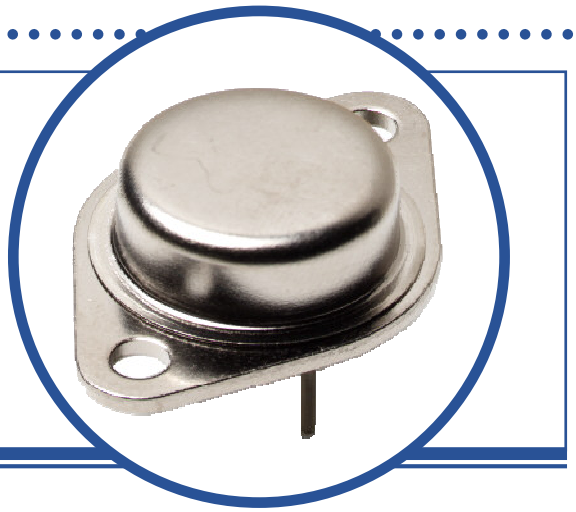
HIGH POWER SILICON PNP/NPN TRANSISTORS

TT electronics
Semelab Limited

2N5876 (PNP)
2N5878 (NPN)

- High Power, Low VCE(Sat).
- Hermetic TO3 (TO-204AA) Metal Package.
- Ideally Suited For Power Amplifier And Switching Applications.
- Screening Options Available.



ABSOLUTE MAXIMUM RATINGS

(T_C = 25°C unless otherwise stated)

			2N5876 PNP	2N5878 NPN
V_{CBO}	Collector – Base Voltage		-80V	80V
V_{CEO}	Collector – Emitter Voltage		-80V	80V
V_{EBO}	Emitter – Base Voltage		-5V	5V
I_C	Continuous Collector Current		10A	
I_B	Base Current		4A	
P_D	Total Power Dissipation at	T_C = 25°C	150W	
		Derate Above 25°C	0.857W/°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
$R_{\theta JC}$	Thermal Resistance, Junction To Case	1.17	°C/W

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ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)[1]

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
$V_{(BR)CEO}$[2]	Collector-Emitter Breakdown Voltage	I_C = 20mA	I_B = 0	80			V
I_{CEO}	Collector Cut-Off Current	V_{CE} = 40V	I_B = 0			1.0	mA
I_{CEX}	Collector Cut-Off Current	V_{CE} = 80V	V_{BE} = -1.5V			0.5	mA
			T_C = 150°C			5	mA
I_{CBO}	Collector Cut-Off Current	V_{CB} = 80V	I_E = 0			0.5	mA
I_{EBO}	Emitter Cut-Off Current	V_{EB} = 5V	I_C = 0			1.0	mA
h_{FE}[2]	Forward-current transfer ratio	I_C = 1.0A	V_{CE} = 4V	35			-
		I_C = 4A	V_{CE} = 4V	20		150	-
		I_C = 10A	V_{CE} = 4V	4			-
$V_{CE(sat)}$[2]	Collector-Emitter Saturation Voltage	I_C = 5A	I_B = 0.5A			1.0	V
		I_C = 10A	I_B = 2.5A			3	V
$V_{BE(sat)}$[2]	Base-Emitter Saturation Voltage	I_C = 10A	I_B = 2.5A			2.5	V
$V_{BE(on)}$[2]	Base-Emitter On Voltage	I_C = 4A	V_{CE} = 4V			1.5	V

DYNAMIC CHARACTERISTICS

f_T[3]	Current Gain-Bandwidth Product	I_C = 0.5A f = 1.0MHz	V_{CE} = 10V	4			MHz
h_{fe}	Small Signal Current Gain	I_C = 1.0A f = 1.0KHz	V_{CE} = 4V	20			-

Notes
(1) For PNP (2N5876) device, voltage and current values are negative
(2) Pulse Width ≤ 380us, δ ≤ 2%
(3) $f_T = |h_{fe}| * f_{test}$

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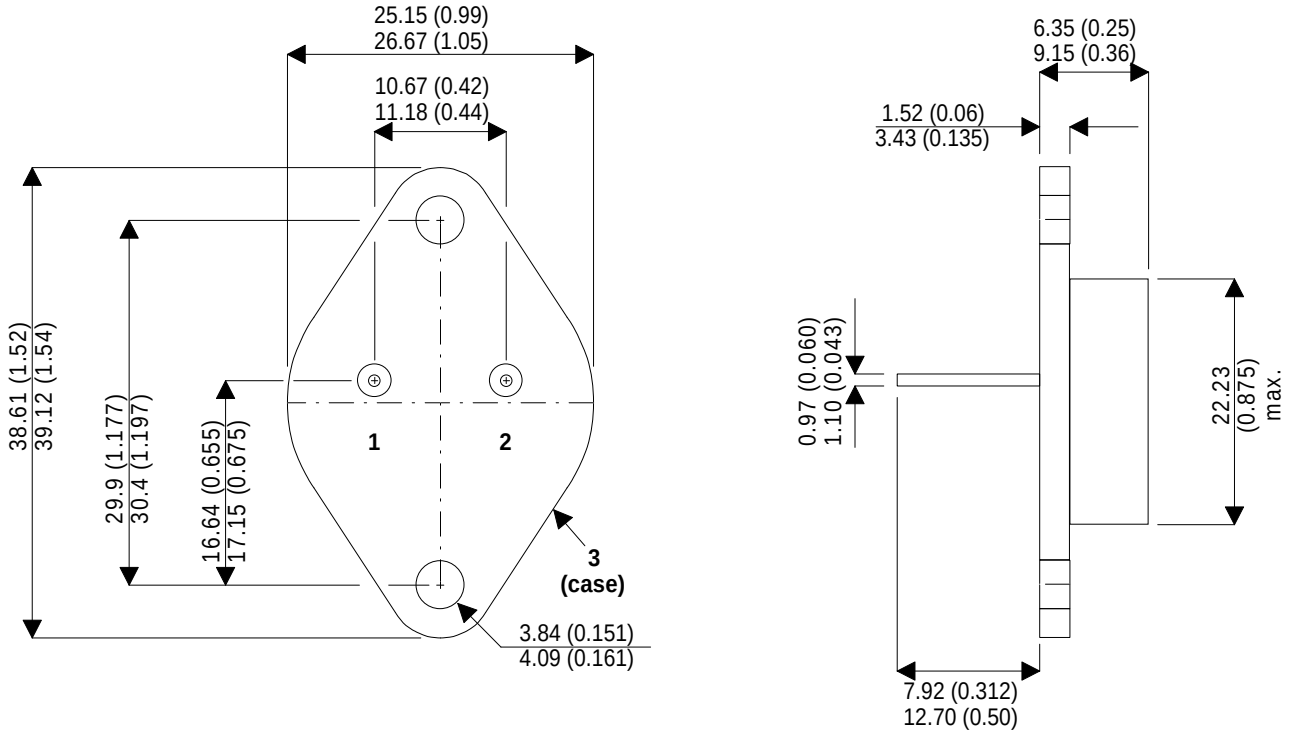
MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AA) METAL PACKAGE

Underside View

Pin 1 - Base Pin 2 - Emitter Case - Collector