

HIGH POWER SILICON PNP/NPN TRANSISTORS

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 _{CB0}	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 _{θJC}	Thermal Resistance, Junction To Case	1.17	°C/W

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ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise stated)⁽¹⁾

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

DYNAMIC CHARACTERISTICS

$f_T^{(3)}$	Current Gain-Bandwidth Product	$I_C = 0.5\text{A}$ $V_{CE} = 10\text{V}$ $f = 1.0\text{MHz}$	4			MHz
h_{fe}	Small Signal Current Gain	$I_C = 1.0\text{A}$ $V_{CE} = 4\text{V}$ $f = 1.0\text{KHz}$	20			-

Notes

(1) For PNP (2N5876) device, voltage and current values are negative

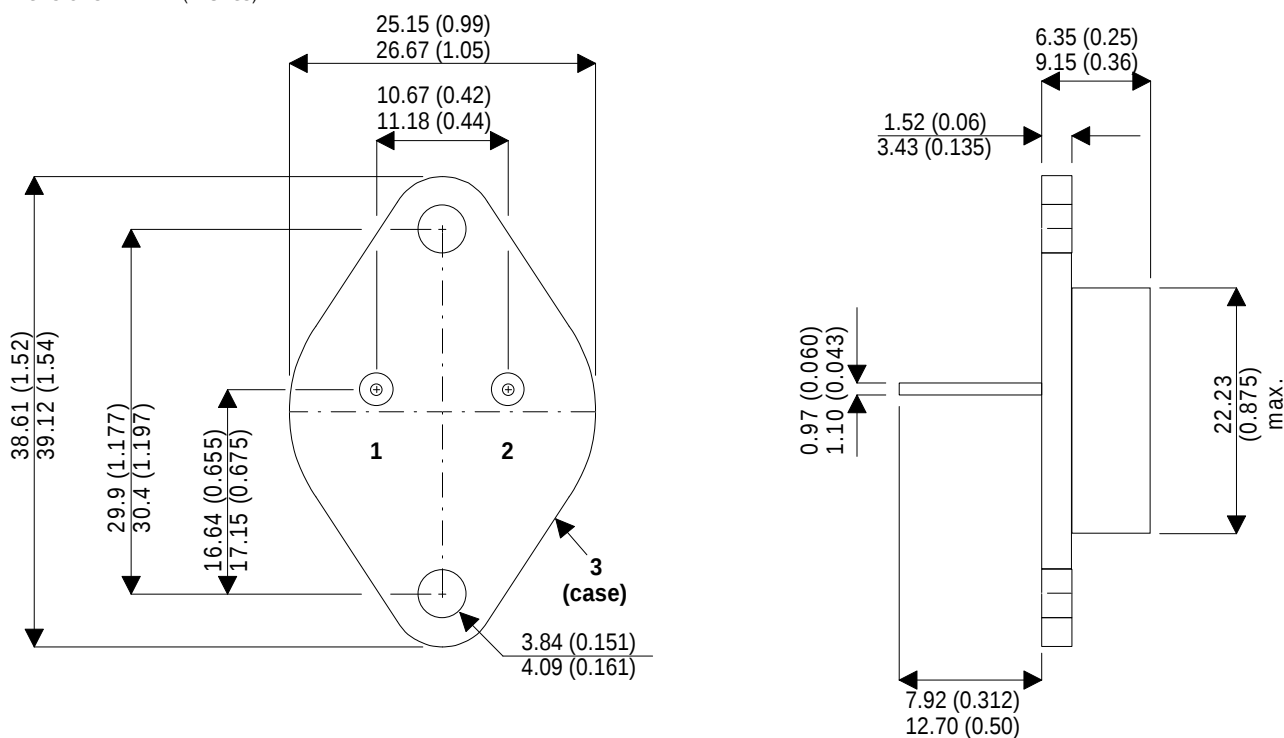
(2) Pulse Width $\leq 380\mu\text{s}$, $\delta \leq 2\%$

(3) $f_T = |h_{fe}| * f_{\text{test}}$

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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