

HIGH POWER SILICON PNP/NPN TRANSISTORS

2N5875 (PNP) 2N5877 (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)

		2N5875 PNP	2N5877 NPN
V _{CB0}	Collector – Base Voltage	-60V	60V
V _{CEO}	Collector – Emitter Voltage	-60V	60V
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

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

HIGH POWER SILICON PNP/NPN TRANSISTORS 2N5875 / 2N5877

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	$I_C = 20\text{mA}$ $I_B = 0$	60			V
I_{CEO}	Collector Cut-Off Current	$V_{CE} = 30\text{V}$ $I_B = 0$			1.0	
I_{CEX}	Collector Cut-Off Current	$V_{CE} = 60\text{V}$ $V_{BE} = -1.5\text{V}$ $T_C = 150^\circ\text{C}$			0.5 5	mA
I_{CBO}	Collector Cut-Off Current	$V_{CB} = 60\text{V}$ $I_E = 0$			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	$I_C = 1.0\text{A}$ $V_{CE} = 4\text{V}$ $I_C = 4\text{A}$ $V_{CE} = 4\text{V}$ $I_C = 10\text{A}$ $V_{CE} = 4\text{V}$	35 20 4			
$V_{CE(sat)}^{(2)}$	Collector-Emitter Saturation Voltage	$I_C = 5\text{A}$ $I_B = 0.5\text{A}$ $I_C = 10\text{A}$ $I_B = 2.5\text{A}$			1.0 3	V
$V_{BE(sat)}^{(2)}$	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 (2N5875) device, voltage and current values are negative

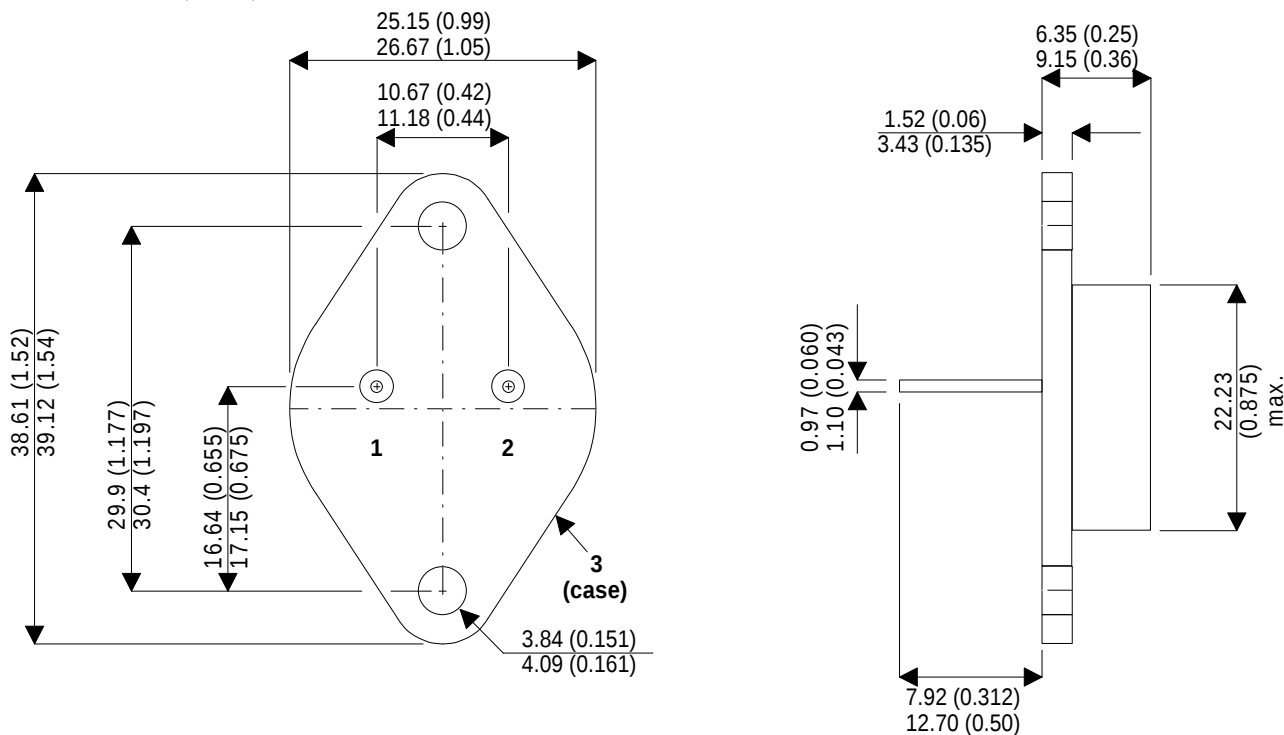
(2) Pulse Width $\leq 380\mu\text{s}$, $\delta \leq 2\%$

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

HIGH POWER SILICON PNP/NPN TRANSISTORS 2N5875 / 2N5877

MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AA) METAL PACKAGE Underside View

Pin 1 - Base

Pin 2 - Emitter

Case - Collector