SILICON EPITAXIAL NPN TRANSISTOR

TT electronics
Semelab Limited

2N5886

- Hermetic TO3 Metal Package.
- Designed For General Purpose, Switching and Power Amplifier Applications
- Screening Options Available

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage		80V
V_{CEO}	Collector – Emitter Voltage		80V
V_{EBO}	Emitter – Base Voltage		5V
I_C	Continuous Collector Current		25A
I_B	Base Current		7.5A
P_D	Total Power Dissipation at	T_C = 25°C	200W
		Derate Above 25°C	1.15W/°C
T_J	Junction Temperature Range		-65 to +200°C
T_{stg}	Storage Temperature Range		-65 to +200°C

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			0.875	°C/W

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

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
$V_{(BR)CEO}$[1]	Collector-Emitter Breakdown Voltage	I_C = 50mA	I_B = 0	80			V
I_{CEX}	Collector Cut-Off Current	V_{CE} = 80V	V_{BE} = -1.5V			1.0	mA
			T_C = 150°C			10	
I_{CEO}	Collector Cut-Off Current	V_{CE} = 40V	I_B = 0			2.0	
I_{CBO}	Collector Cut-Off Current	V_{CB} = 80V	I_E = 0			1.0	
I_{EBO}	Emitter Cut-Off Current	V_{EB} = 5V	I_C = 0			1.0	
h_{FE}[1]	Forward-current transfer ratio	I_C = 3A	V_{CE} = 4V	35			
		I_C = 10A	V_{CE} = 4V	20		100	
		I_C = 25A	V_{CE} = 4V	4			
$V_{BE(on)}$[1]	Base-Emitter On Voltage	I_C = 10A	V_{CE} = 4V			1.5	V
$V_{BE(sat)}$[1]	Base-Emitter Saturation Voltage	I_C = 25A	I_B = 6.25A			2.5	
$V_{CE(sat)}$[1]	Collector-Emitter Saturation Voltage	I_C = 15A	I_B = 1.5A			1.0	
		I_C = 25A	I_B = 6.25A			4	

DYNAMIC CHARACTERISTICS

h_{fe}[2]	Small-Signal Current Gain	I_C = 3A f = 1.0KHz	V_{CE} = 4V	20			
C_{obo}	Output Capacitance	I_E = 0 f = 1.0MHz	V_{CB} = 10V			500	pF
f_T	Transition Frequency	I_C = 1.0A f = 1.0MHz	V_{CE} = 10V	4			MHz

SWITCHING CHARACTERISTICS

t_r	Rise Time	V_{CC} = 30V, I_C = 10A I_{B1} = I_{B2} = 1.0A		0.7		µs
t_s	Storage Time			1.0		µs
t_f	Fall Time			0.8		µs

Notes
(1) Pulse Width ≤ 300us, δ ≤ 2%.
(2) Guaranteed by design, not production tested.

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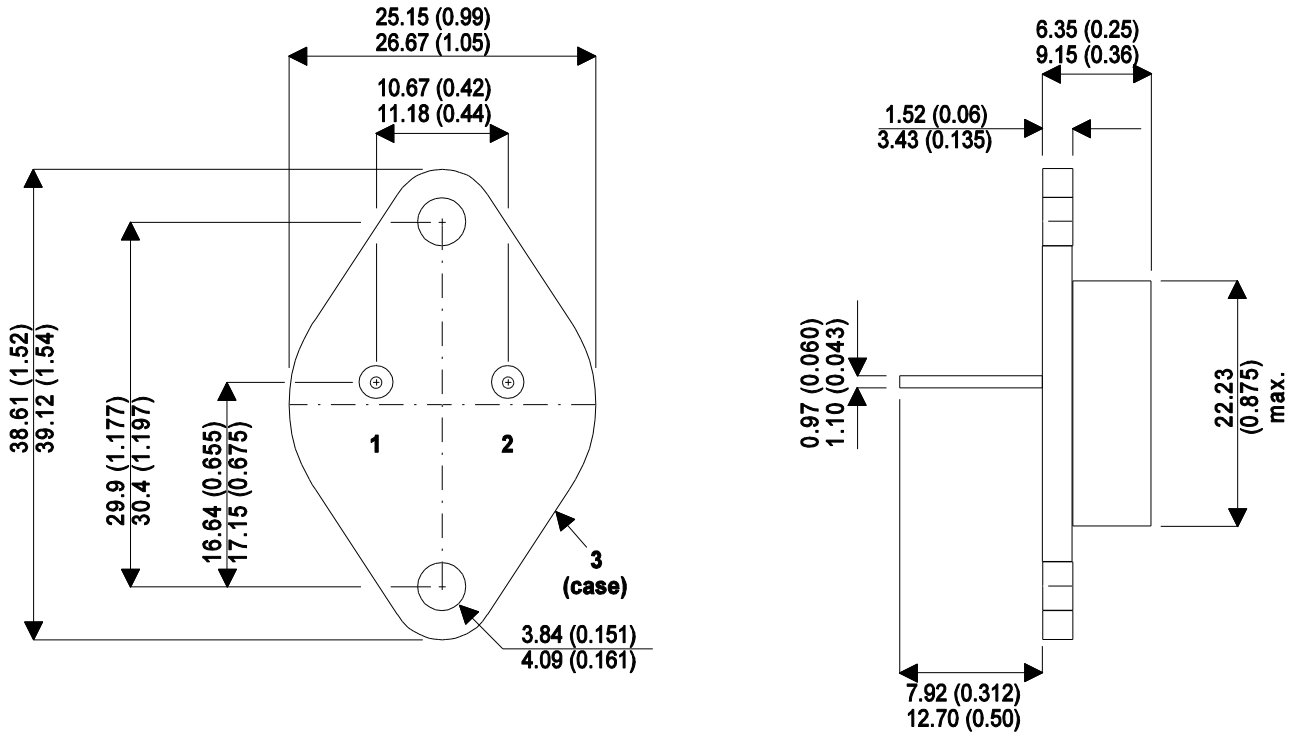
MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AA) METAL PACKAGE

Underside View

Pin 1 - Base Pin 2 - Emitter Case - Collector