

2N6436 2N6437 2N6438

### **MECHANICAL DATA**

Dimensions in mm (inches)

# (1) 3.84 (0.151) 4.09 (0.161)

## **HIGH POWER PNP SILICON TRANSISTORS**

#### **DESCRIPTION**

**Designed for use in Industrial - Military** Power Amplifier and Switching Circuit **Applications** 

## TO-3 Package (TO-204AA)

Pin 1 - Base Pin 2 - Emitter Case - Collector

ABSOLUTE MAXIMUM RATINGS(T <sub>CASE</sub> = 25°c unless otherwise stated)		2N6436	2N6437	2N6438		
$\overline{V_{CB}}$	Collector – Base Voltage	100	120	140		
$V_{CEO}$	Collector – Emitter Voltage	80   100   120		120		
$V_{EB}$	Emitter – Base Voltage	6.0V				
$I_{\mathbb{C}}$	Collector Current Continuous	25A				
Peak		50A				
I <sub>B</sub>	Base Current		10A			
$P_{D}$	Total Device Dissipation at T <sub>case</sub> = 25°C	140W				
	Derate above 25°C		0.8W/°C			
$T_{stg,}T_{j}$	Operating and Storage Temperature Range	−65 to +200°C		°C		

Semelab Plc 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.

**Semelab plc.** Telephone +44(0)1455 556565. Fax +44(0)1455 552612. E-mail: sales@semelab.co.uk

Website: http://www.semelab.co.uk

Document Number 3252

Issue 3



2N6436 2N6437 2N6438

#### THERMAL DATA

R <sub>thj-case</sub> Tr	hermal Resistance Junction-case	Max	1.25	°C/W	ĺ
--------------------------	---------------------------------	-----	------	------	---

# **ELECTRICAL CHARACTERISTICS FOR** $(T_{case} = 25^{\circ}C)$ unless otherwise stated)

	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
I <sub>CBO</sub>	Collector Cut Off Current	V <sub>CB</sub> = 100V I <sub>E</sub> = 0 <b>2N6436</b>			10	μА
		V <sub>CB</sub> = 120V I <sub>E</sub> = 0 <b>2N6437</b>			10	
		V <sub>CB</sub> = 140V I <sub>E</sub> = 0 <b>2N6438</b>			10	
I <sub>EBO</sub>	Emitter Cut Off Current	$V_{EB} = 6V$ $I_C = 0$			100	μA
	Collector Cut Off Current	V <sub>CE</sub> = 90V <b>2N6436</b>			10	μA
I <sub>CEX</sub>		$V_{BE (off)} = -1.5V T_{C} = 150^{\circ}C$			1.0	mA
		V <sub>CE</sub> = 110V 2N6437			10	μA
		$V_{BE \text{ (off)}} = -1.5V T_{C} = 150^{\circ}C$			1.0	mA
		V <sub>CE</sub> = 130V <b>2N6436</b>			10	μΑ
		$V_{BE \text{ (off)}} = -1.5V T_{C} = 150^{\circ}C$			1.0	mA
I <sub>CEO</sub>		$V_{CE} = 40V I_B = 0$ 2N6436			50	μΑ
	Collector Cut off Current	$V_{CE} = 50V I_B = 0$ <b>2N6437</b>			50	
		$V_{CE} = 60V  I_B = 0.$ 2N6438			50	
	Collector Emitter Breakdown Voltage	2N6436	80			
V <sub>(BR)CEO</sub> *		$I_C = 50 \text{mA}$ $I_B = 0$ <b>2N6437</b>	100			\ \ \ \ \
		2N6438	120			1
h <sub>FE*</sub>	DC Current Gain	V <sub>CE</sub> =2.0V I <sub>C</sub> = 0.5A	30			_
		V <sub>CE</sub> = 2.0V I <sub>C</sub> = 10A	20		120	
		$V_{CE} = 2.0V$ $I_{C} = 25A$	12			
V <sub>CE(sat)</sub> *	Collector - Emitter Saturation Voltage	I <sub>C</sub> = 10A I <sub>B</sub> = 1.0A			1.0	V
		$I_C = 25A$ $I_B = 2.5A$			1.8	
V <sub>BE(sat)</sub> *	Base Emitter Saturation Voltage	$I_C = 10A$ $I_B = 1.0AV$			1.8	
		$I_{C} = 25A$ $I_{B} = 2.5A$			2.5	
f <sub>T</sub>	Current Gain - Bandwidth Product	I <sub>C</sub> = 1.0A V <sub>CE</sub> = 10V	40		MHz	
		f <sub>test</sub> = 10MHz	40			IVIII
C <sub>ob</sub>	Output Capacitance	$I_E = 0A$ $V_{CE} = 10V$			700	pF
		f = 100kHz				"
t <sub>r</sub>	Rise Time	$V_{CC} = 80V$ $I_C = 10A$			0.3	— μs
		$V_{BE(off)} = 6.0V I_{B1} = 1.0A$			0.3	
t <sub>s</sub>	Storage	$V_{CC} = 80V$ $I_C = 10A$			1.0	
t <sub>f</sub>	Fall Time	$V_{BE(off)} = 6.0V I_{B1} = I_{B2} = 1.0A$			0.25	

<sup>\*</sup> Pulse test: Pulse Width  $\leq 300 \mu s$ , Duty Cycle  $\leq 2.0\%$ 

Semelab Plc 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.

**Semelab plc.** Telephone +44(0)1455 556565. Fax +44(0)1455 552612.

Document Number 3252 E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

Issue 3