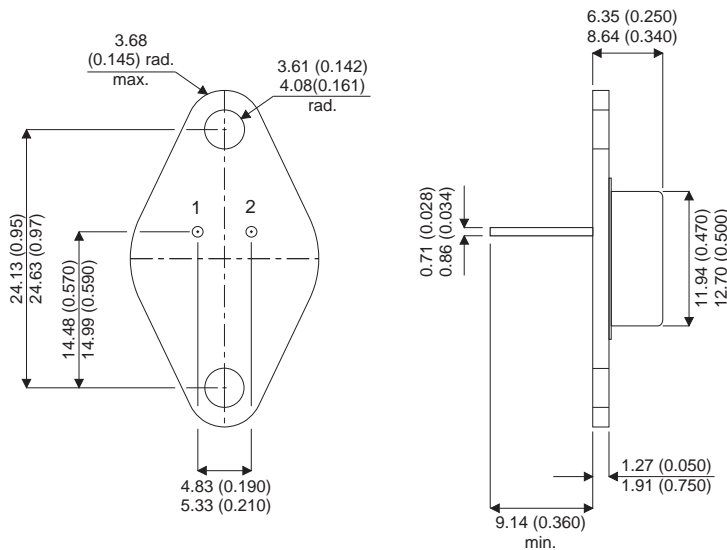


## MECHANICAL DATA

Dimensions in mm (inches)



### TO-66 (TO-213AA)

Pin 1 –Base

Pin 2 –Emitter

Case – Collector

## COMPLEMENTARY SILICON MEDIUM POWER TRANSISTORS

### COMPLEMENTARY TRANSISTORS 2N6316 (NPN) AND 2N6318 (PNP)

#### FEATURES

- Low Collector Emitter Saturation Voltage
- Low Leakage Current
- Excellent DC Current Gain

#### APPLICATIONS:

Designed for general purpose amplifier and switching applications.

### ABSOLUTE MAXIMUM RATINGS( $T_C = 25^\circ\text{C}$ unless otherwise stated)

$V_{CEO}$	Collector – Emitter Voltage	80V
$V_{CBO}$	Collector – Base Voltage	80V
$V_{EBO}$	Emitter – Base Voltage	5V
$I_C$	Collector Current	Continuous Peak
		7A 15A
$I_B$	Base Current	2A
$P_D$	Total Dissipation @ $T_C = 25^\circ\text{C}$	90W
	Derate above $25^\circ\text{C}$	0.515W/ $^\circ\text{C}$
$T_{STG}, T_J$	Operating and Storage Junction Temperature Range	$-65$ to $+200^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance – Junction - Case	1.94 $^\circ\text{C/W}$

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.

## ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS							
V <sub>CEO(sus)</sub>	Collector – Emitter Sustaining Voltage *	I <sub>C</sub> = 100mA	I <sub>B</sub> = 0	80			V
I <sub>CEO</sub>	Collector Cut-off Current	V <sub>CE</sub> = 40V	I <sub>B</sub> = 0			0.5	mA
I <sub>CEX</sub>	Collector Cut-off Current	V <sub>CE</sub> = 80V	V <sub>BE(off)</sub> = 1.5V T <sub>C</sub> = 150°C			0.25	
I <sub>CBO</sub>	Collector Cut-off Current	V <sub>CB</sub> = 80V	I <sub>E</sub> = 0			2.0	
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>EB</sub> = 5V	I <sub>C</sub> = 0			0.25	
ON CHARACTERISTICS *							
h <sub>FE</sub>	DC Current Gain	V <sub>CE</sub> = 4V	I <sub>C</sub> = 0.5A	35			—
		V <sub>CE</sub> = 4V	I <sub>C</sub> = 2.5A	20		100	
		V <sub>CE</sub> = 4V	I <sub>C</sub> = 7.0A	4			
V <sub>CE(sat)</sub>	Collector – Emitter Saturation Voltage	I <sub>C</sub> = 4A	I <sub>B</sub> = 0.4A			1.0	V
		I <sub>C</sub> = 7A	I <sub>B</sub> = 1.75A			2.0	
V <sub>BE(sat)</sub>	Base – Emitter Saturation Voltage	I <sub>C</sub> = 7A	I <sub>B</sub> = 1.75A			2.5	
V <sub>BE(on)</sub>	Base – Emitter On Voltage	V <sub>CE</sub> = 4V	I <sub>C</sub> = 2.5A			1.5	
DYNAMIC CHARACTERISTICS							
C <sub>ob</sub>	Output Capacitance	V <sub>CB</sub> = 10V f = 1MHz	I <sub>E</sub> = 0			300	pF
f <sub>T</sub>	Current Gain – Bandwidth Product	V <sub>CE</sub> = 10V I <sub>C</sub> = 0.25A f = 1MHz		4.0			MHz
h <sub>fe</sub>	Small Signal Current Gain	V <sub>CE</sub> = 4V f = 1kHz	I <sub>C</sub> = 0.5A	20			—
DYNAMIC CHARACTERISTICS							
t <sub>r</sub>	Rise Time	V <sub>CC</sub> = 30V				0.7	μS
t <sub>s</sub>	Storage Time	I <sub>C</sub> = 2.5A				1.0	
t <sub>f</sub>	Fall Time	I <sub>B1</sub> = I <sub>B</sub> =0.25A				0.8	

### Notes

\* Pulse test: t<sub>p</sub> = 300μs , Duty Cycle = 2%

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