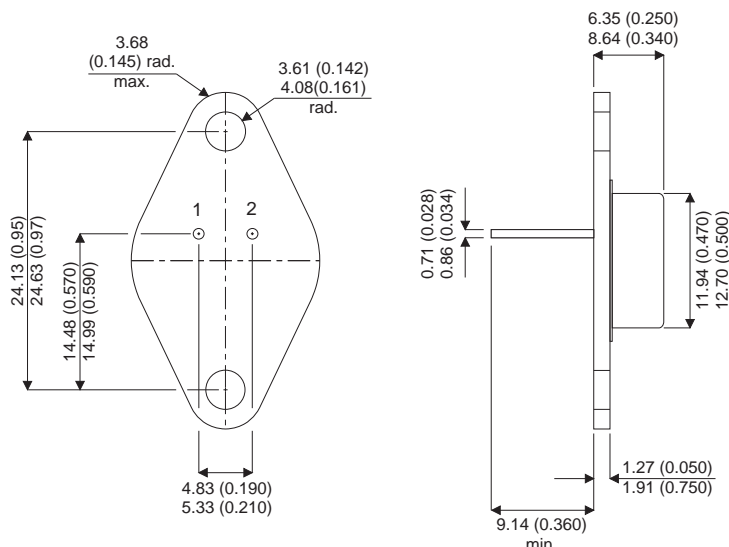


MECHANICAL DATA

Dimensions in mm (inches)



**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.

TO-66 (TO-213AA)

Pin 1 –Base Pin 2 –Emitter Case – Collector

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°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 $^\circ\text{C}/\text{W}$

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 ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
$V_{CEO(sus)}$	Collector – Emitter Sustaining Voltage *	$I_C = 100mA$	$I_B = 0$	80	V
I_{CEO}	Collector Cut-off Current	$V_{CE} = 40V$	$I_B = 0$		0.5
I_{CEX}	Collector Cut-off Current	$V_{CE} = 80V$	$V_{BE(off)} = 1.5V$ $T_C = 150^{\circ}C$		0.25
I_{CBO}	Collector Cut-off Current	$V_{CB} = 80V$	$I_E = 0$		2.0
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5V$	$I_C = 0$		0.25
					1.0
ON CHARACTERISTICS *					
h_{FE}	DC Current Gain	$V_{CE} = 4V$	$I_C = 0.5A$	35	
		$V_{CE} = 4V$	$I_C = 2.5A$	20	100
		$V_{CE} = 4V$	$I_C = 7.0A$	4	
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage	$I_C = 4A$	$I_B = 0.4A$		1.0
		$I_C = 7A$	$I_B = 1.75A$		2.0
$V_{BE(sat)}$	Base – Emitter Saturation Voltage	$I_C = 7A$	$I_B = 1.75A$		2.5
$V_{BE(on)}$	Base – Emitter On Voltage	$V_{CE} = 4V$	$I_C = 2.5A$		1.5
DYNAMIC CHARACTERISTICS					
C_{ob}	Output Capacitance	$V_{CB} = 10V$ $f = 1MHz$	$I_E = 0$		300
f_T	Current Gain – Bandwidth Product	$V_{CE} = 10V$ $I_C = 0.25A$ $f = 1MHz$		4.0	MHz
h_{fe}	Small Signal Current Gain	$V_{CE} = 4V$ $f = 1kHz$	$I_C = 0.5A$	20	—
DYNAMIC CHARACTERISTICS					
t_r	Rise Time	$V_{CC} = 30V$			0.7
t_s	Storage Time	$I_C = 2.5A$			1.0
t_f	Fall Time	$I_{B1} = I_B = 0.25A$			0.8

Notes

* Pulse test: $t_p = 300\mu s$, Duty Cycle = 2%

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