



#### **MECHANICAL DATA**

Dimensions in mm (inches)

#### 6.35 (0.250) 8.64 (0.340) 3.68 (0.145) rad 3.61 (0.142) 4.08(0.161) max (0.028) 1 2 (0.470) 24.13 (0.95) 24.63 (0.97) 0 0.71 ( 14.48 (0.570) 14.99 (0.590) 11.94 ( 12.70 ( 1.27 (0.050) 4.83 (0.190) 1.91 (0.750) 5.33 (0.210) 9.14 (0.360) min

## COMPLEMENTARY SILICON **MEDIUM POWER TRANSISTORS**

**COMPLEMENTARY TRANSISTORS** 2N6315 (NPN) AND 2N6317 (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<sub>C</sub> = 25°C unless otherwise stated)

$\overline{V_{CEO}}$	Collector – Emitter Voltage	60V		
$V_{CBO}$	Collector – Base Voltage		60V	
$V_{EBO}$	Emitter – Base Voltage	5V		
$I_{C}$	Collector Current	Continuous	7A	
		Peak	15A	
$I_{B}$	Base Current		2A	
$P_{D}$	Total Dissipation @ T <sub>C</sub> = 25°C		90W	
	Derate above 25°C	0.515W/°C		
$T_{STG}$ , $T_{J}$	Operating and Storage Junction Temperature Range		−65 to +200°C	
$R_{\theta JC}$	Thermal Resistance – Juno	1.94°C/W		

Semelab PIc 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.

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

	Parameter Test Conditions		ns	Min.	Тур.	Max.	Unit	
	OFF CHARACTERISTICS						•	
V <sub>CEO(sus)</sub>	Collector – Emitter Sustaining Voltage *	I <sub>C</sub> = 100mA	I <sub>B</sub> = 0	60			V	
I <sub>CEO</sub>	Collector Cut-off Current	V <sub>CE</sub> = 30V	I <sub>B</sub> = 0			0.5		
I <sub>CEX</sub>	Collector Cut-off Current	V <sub>CE</sub> = 60V	$V_{BE(off)} = 1.5V$ $T_C = 150$ °C			0.25 2.0		
I <sub>CBO</sub>	Collector Cut-off Current	V <sub>CB</sub> = 60V	I <sub>E</sub> = 0			0.25	mA	
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>EB</sub> = 5V	I <sub>C</sub> = 0			1.0		
	ON CHARACTERISTICS *	l						
h <sub>FE</sub>	DC Current Gain	$V_{CE} = 4V$	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	I <sub>C</sub> = 4A	$I_{B} = 0.4A$			1.0		
	Voltage	I <sub>C</sub> = 7A	I <sub>B</sub> = 1.75A			2.0	V	
V <sub>BE(sat)</sub>	Base – Emitter Saturation Voltage	I <sub>C</sub> = 7A	I <sub>B</sub> = 1.75A			2.5	7 V	
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	$V_{CE} = 10V$ $I_{C} = 0.25A$ $f = 1MHz$		4.0			MHz	
h <sub>fe</sub>	Small Signal Current Gain	$V_{CE} = 4V$ f = 1kHz	I <sub>C</sub> = 0.5A	20			_	
	DYNAMIC CHARACTERISTICS							
t <sub>r</sub>	Rise Time	V <sub>CC</sub> = 30V				0.7		
t <sub>s</sub>	Storage Time	I <sub>C</sub> = 2.5A				1.0	μS	
t <sub>f</sub>	Fall Time	$I_{B1} = I_{B} = 0.25A$				0.8	_	

#### **Notes**

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