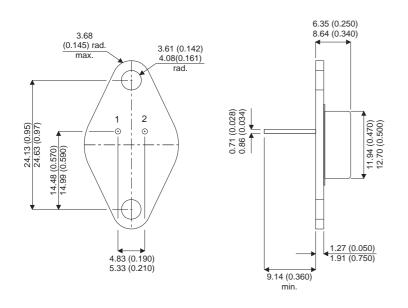


MECHANICAL DATA

Dimensions in mm (inches)



DARLINGTON SILICON **POWER TRANSISTORS**

Designed for general purpose amplifier and low frequency switching applications.

FEATURES

- High DC Current Gain
- Monolithic Construction with Built-in **Base-Emitter Shunt Resistors**

TO-66 (TO-213AA)

Pin 1 -Base Pin 2 -Emitter Case - Collector

ABSOLUTE MAXIMUM RATINGS (T _C = 25°C unless otherwise stated) 2N6300 2N6301					
$\overline{V_{CEO}}$	Collector – Emitter Voltage		60V	80V	
V_{CBO}	Collector – Base Voltage		60V	80V	
V_{EBO}	Emitter – Base Voltage		5V		
I_{C}	Collector Current	Continuous	8A		
		Peak	16A		
I_{B}	Base Current		120mA		
P_{D}	Total Dissipation @ T _C = 25°C		100W	75W	
	Derate above 25°C		0.571W/°C	0.428W/°C	
T_{STG} , T_{J}	Operating and Storage Junction Temperature Range		−65 to +200°C		
$T_{ hetaJC}$	Thermal Resistance – Junction - Case		1.75°C/W	2.33°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.

E-mail: sales@semelab.co.uk

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

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

Document Number 3979





ELECTRICAL CHARACTERISTICS 2N6300 (T_{case} = 25°C unless otherwise stated)

	Parameter	Test Conditions		Min.	Тур.	Max.	Unit		
	OFF CHARACTERISTICS								
V _{CEO(sus)}	Collector – Emitter Sustaining Voltage ¹	I _C = 100mA	I _B = 0	60			٧		
I _{CEO}	Collector Cut-off Current	V _{CE} = 30V	I _B = 0			0.5	mA		
I _{CEX}	Collector Cut-off Current	V _{CE} = Rated V _{CB}	$V_{BE(off)} = 1.5V$ $T_C = 150^{\circ}C$			0.5 5.0	mA		
I _{EBO}	Emitter Cut-off Current	V _{BE} = 5V	I _C = 0			2.0	mA		
	ON CHARACTERISTICS ¹					l.			
h _{FE}	DC Current Gain	$V_{CE} = 3V$	I _C = 4A	750		18000			
		V _{CE} = 3V	I _C = 8A	100			1 -		
V _{CE(sat)}	Collector – Emitter Saturation	I _C = 4A	I _B = 16mA			2.0	V		
	Voltage	I _C = 8A	$I_B = 80 \text{mA}$			3.0	7 v		
V _{BE(sat)}	Base – Emitter Saturation Voltage	I _C = 8A	$I_B = 80 \text{mA}$			4.0	V		
V _{BE(on)}	Base – Emitter On Voltage	V _{CE} = 3V	I _C = 4A			2.8	V		
	DYNAMIC CHARACTERISTICS								
C _{ob}	Output Capacitance	V _{CB} = 10V f = 0.1MHz	I _E = 0			200	pF		
	Magnitude of Common Emitter	$V_{CE} = 3V$							
h _{fe}	Small Signal Short Circuit Current	I _C = 3A		4.0			_		
	Transfer Ratio	f = 1MHz		_					
h _{fe}	Small Signal Current Gain	$V_{CE} = 3V$ f = 1kHz	I _C = 3A	300			_		

Notes

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

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.

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 3979 Issue 1





ELECTRICAL CHARACTERISTICS 2N6301 (T_{case} = 25°C unless otherwise stated)

	Parameter	Test Conditions		Min.	Тур.	Max.	Unit
	OFF CHARACTERISTICS						
V _{CEO(sus)}	Collector – Emitter Sustaining Voltage 1	I _C = 100mA	I _B = 0	80			V
I _{CEO}	Collector Cut-off Current	V _{CE} = 40V	$I_B = 0$			0.5	mA
I _{CEX}	Collector Cut-off Current	V _{CE} = Rated V _{CB}	$V_{BE(off)} = 1.5V$ $T_C = 150^{\circ}C$			0.5 5.0	mA
I _{EBO}	Emitter Cut-off Current	V _{BE} = 5V	I _C = 0			2	mA
	ON CHARACTERISTICS 1	•					
h _{FE}	DC Current Gain	$V_{CE} = 3V$	I _C = 4A	750		18000	
		V _{CE} = 3V	I _C = 8A	100			1 -
V _{CE(sat)}	Collector – Emitter Saturation	I _C = 4A	I _B = 16mA			2.0	V
	Voltage	I _C = 8A	$I_B = 80 \text{mA}$			3.0	V
V _{BE(sat)}	Base – Emitter Saturation Voltage	I _C = 8A	$I_B = 80 \text{mA}$			4.0	V
V _{BE(on)}	Base – Emitter On Voltage	V _{CE} = 3V	I _C = 4A			2.8	V
	DYNAMIC CHARACTERISTICS						
C _{ob}	Output Capacitance	$V_{CB} = 10V$ f = 0.1MHz	I _E = 0			200	pF
	Magnitude of Common Emitter	V _{CE} = 3V					
h _{fe}	Small Signal Short Circuit Current	I _C = 3A		4.0			_
	Transfer Ratio	f = 1MHz					
h _{fe}	Small Signal Current Gain	$V_{CE} = 3V$ f = 1kHz	I _C = 3A	300			_

Notes

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

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.

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 3979 Issue 1