

New Jersey Semi-Conductor Products, Inc.

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2N6300 NPN (SILICON)

DARLINGTON  
 8 AMPERE

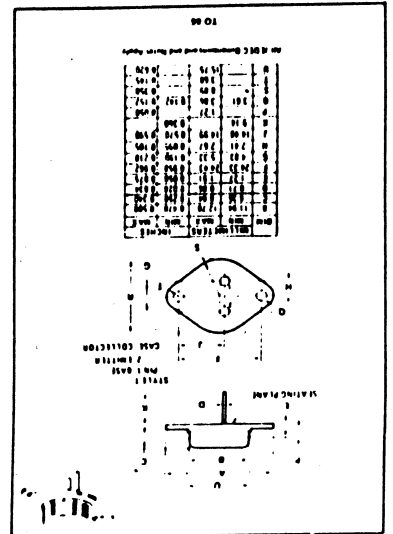
\*MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	60	Vdc
Collector-Base Voltage	V <sub>CB</sub>	60	Vdc
Emitter-Base Voltage	V <sub>EB</sub>	5.0	Vdc
Collector Current - Continuous	I <sub>C</sub>	8.0	Arc
Peak		16	
Base Current	I <sub>B</sub>	120	mArc
Total Device Dissipation - T <sub>C</sub> = 25°C	P <sub>D</sub>	75	Watts
Derate above 25°C		0.428	W/°C
Operating and Storage Junction Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case	θ <sub>JC</sub>	2.33	°C/W

\*Indicates JEDEC Registered Data.



\*ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Sustaining Voltage (1) (I <sub>C</sub> = 100 mArc, I <sub>B</sub> = 0)	V <sub>CEO(sus)</sub>	60	-	Vdc
Collector Cutoff Current (V <sub>CE</sub> = 30 Vdc, I <sub>B</sub> = 0)	I <sub>CEO</sub>	-	0.5	mArc
Collector Cutoff Current (V <sub>CE</sub> = Rated V <sub>CB</sub> , V <sub>BE(off)</sub> = 1.5 Vdc (V <sub>CE</sub> = Rated V <sub>CB</sub> , V <sub>BE(off)</sub> = 1.5 Vdc, T <sub>C</sub> = 150°C)	I <sub>CEX</sub>	-	0.5 5.0	mArc
Emitter Cutoff Current (V <sub>BE</sub> = 5.0 Vdc, I <sub>C</sub> = 0)	I <sub>EBO</sub>	-	2.0	mArc
<b>ON CHARACTERISTICS (1)</b>				
DC Current Gain (I <sub>C</sub> = 4.0 Arc, V <sub>CE</sub> = 3.0 Vdc) (I <sub>C</sub> = 8.0 Arc, V <sub>CE</sub> = 3.0 Vdc)	h <sub>FE</sub>	750 100	18000 -	-
Collector-Emitter Saturation Voltage (I <sub>C</sub> = 4.0 Arc, I <sub>B</sub> = 16 mArc) (I <sub>C</sub> = 8.0 Arc, I <sub>B</sub> = 80 mArc)	V <sub>CE(sat)</sub>	-	2.0 3.0	Vdc
Base-Emitter Saturation Voltage (I <sub>C</sub> = 8.0 Arc, I <sub>B</sub> = 80 mArc)	V <sub>BE(sat)</sub>	-	4.0	Vdc
Base-Emitter On Voltage (I <sub>C</sub> = 4.0 Arc, V <sub>CE</sub> = 3.0 Vdc)	V <sub>BE(on)</sub>	-	2.8	Vdc
<b>DYNAMIC CHARACTERISTICS</b>				
Magnitude of Common-Emitter Small-Signal Short-Circuit Current Transfer Ratio (I <sub>C</sub> = 3.0 Arc, V <sub>CE</sub> = 3.0 Vdc, f = 1.0 MHz)	h <sub>fe</sub>	4.0	-	-
Output Capacitance (V <sub>CB</sub> = 10 Vdc, I <sub>E</sub> = 0, f = 0.1 MHz)	C <sub>ob</sub>	-	200	pF
Small-Signal Current Gain (I <sub>C</sub> = 3.0 Arc, V <sub>CE</sub> = 3.0 Vdc, f = 1.0 kHz)	h <sub>fe</sub>	300	-	-

\*Indicates JEDEC Registered Data.

(1) Pulse Test: Pulse Width = 300 μs, Duty Cycle = 2.0 %.



Quality Semi-Conductors