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2N6315 NPN SILICON POWER TRANSISTOR

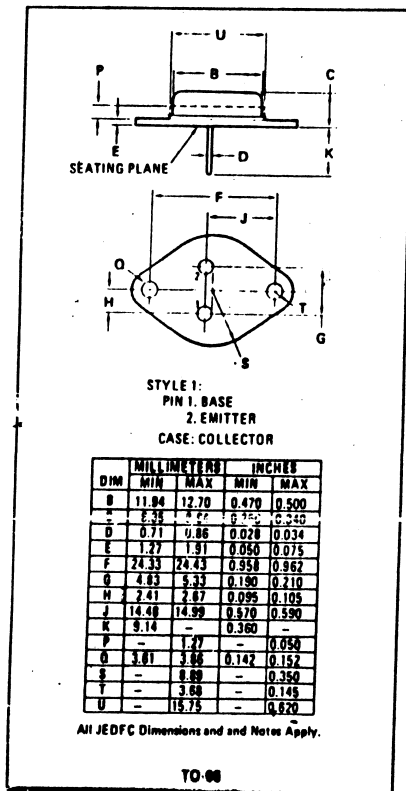
*MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	60	Vdc
Collector-Base Voltage	V_{CB}	60	Vdc
Emitter-Base Voltage	V_{EB}	5.0	Vdc
Collector Current - Continuous	I_C	7.0	Adc
Peak		15	
Base Current	I_B	2.0	Adc
Total Device Dissipation - $T_C = 25^\circ\text{C}$	P_D	90	Watts
Derate above 25°C		0.515	W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case	θ_{JC}	1.94	$^\circ\text{C/W}$

*Indicates JEDEC registered data. Limits and conditions differ on some parameters and re-registration reflecting these changes has been requested. All above values meet or exceed present JEDEC registered data.



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

*ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (1) ($I_C = 100 \text{ mA dc}, I_B = 0$)	$V_{CE(sus)}$	60	-	Vdc
Collector Cutoff Current ($V_{CE} = 30 \text{ Vdc}, I_B = 0$)	I_{CEO}	-	0.5	mA dc
Collector Cutoff Current ($V_{CE} = 60 \text{ Vdc}, V_{BE(off)} = 1.5 \text{ Vdc}$) ($V_{CE} = 60 \text{ Vdc}, V_{BE(off)} = 1.5 \text{ Vdc}, T_C = 150^\circ\text{C}$)	I_{CEX}	-	0.25 2	mA dc
Collector Cutoff Current ($V_{CB} = 60 \text{ Vdc}, I_E = 0$)	I_{CBO}	-	0.25	mA dc
Emitter Cutoff Current ($V_{EB} = 5.0 \text{ Vdc}, I_C = 0$)	I_{EBO}	-	1.0	mA dc

ON CHARACTERISTICS				
DC Current Gain (1) ($I_C = 0.5 \text{ A dc}, V_{CE} = 4.0 \text{ Vdc}$) ($I_C = 2.5 \text{ A dc}, V_{CE} = 4.0 \text{ Vdc}$) ($I_C = 7.0 \text{ A dc}, V_{CE} = 4.0 \text{ Vdc}$)	h_{FE}	35 20 40	- 100 -	-
Collector-Emitter Saturation Voltage (1) ($I_C = 4.0 \text{ A dc}, I_B = 0.4 \text{ A dc}$) ($I_C = 7.0 \text{ A dc}, I_B = 1.75 \text{ A dc}$)	$V_{CE(sat)}$	-	1.0 2.0	Vdc
Base-Emitter Saturation Voltage (1) ($I_C = 7.0 \text{ A dc}, I_B = 1.75 \text{ A dc}$)	$V_{BE(sat)}$	-	2.5	Vdc
Base-Emitter On Voltage (1) ($I_C = 2.5 \text{ A dc}, V_{CE} = 4.0 \text{ Vdc}$)	$V_{BE(on)}$	-	1.5	Vdc

DYNAMIC CHARACTERISTICS				
Current-Gain - Bandwidth Product (2) ($I_C = 0.25 \text{ A dc}, V_{CE} = 10 \text{ Vdc}, f_{test} = 1.0 \text{ MHz}$)	f_T	4.0	-	MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 1.0 \text{ MHz}$)	C_{ob}	-	200	pF
Small-Signal Current Gain ($I_C = 0.5 \text{ A dc}, V_{CE} = 4.0 \text{ Vdc}, f = 1.0 \text{ kHz}$)	h_{fe}	20	-	-

SWITCHING CHARACTERISTICS				
Rise Time	($V_{CC} = 30 \text{ Vdc}, I_C = 2.5 \text{ A dc},$ $I_{B1} = I_{B2} = 0.25 \text{ A dc}$)	t_r	-	0.7 μs
Storage Time		t_s	-	1.0 μs
Fall Time		t_f	-	0.8 μs

*Indicates JEDEC Registered Data.

(1) Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.

(2) $f_T = |h_{fe}| \cdot f_{test}$