

NPN SILICON POWER TRANSISTORS

...designed for use in power amplifier and switching circuits .

FEATURES:

*Collector-Emitter Sustaining Voltage-

$$V_{CEO(sus)} = 100 \text{ V (Min)}$$

* Collector-Emitter Saturation Voltage -

$$V_{CE(sat)} = 1.0 \text{ V (Max.) @ } I_C = 3.0 \text{ A, } I_B = 0.3 \text{ A}$$

* Switching Time - $t_f = 1.0 \text{ us (Max.) @ } I_C = 3.0 \text{ A}$

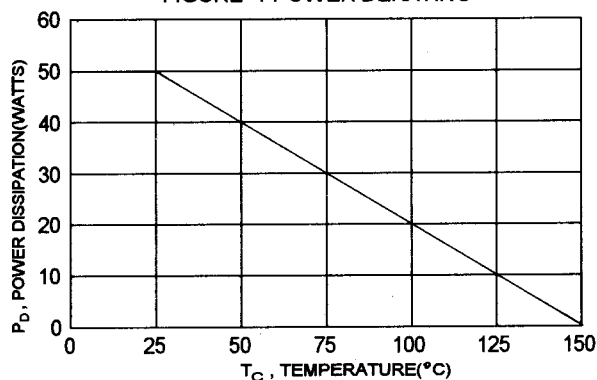
MAXIMUM RATINGS

Characteristic	Symbol	2SC2908	Unit
Collector-Emitter Voltage	V_{CEO}	100	V
Collector-Base Voltage	V_{CBO}	200	V
Emitter-Base Voltage	V_{EBO}	12	V
Collector Current - Continuous - Peak	I_C I_{CM}	5.0 10	A
Base current	I_B	2.5	A
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	50 0.4	W W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

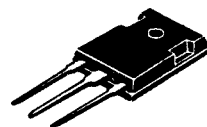
Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	2.5	$^\circ\text{C/W}$

FIGURE -1 POWER DERATING

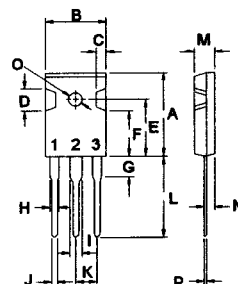


NPN
2SC2908

5.0 AMPERE
SILICON POWER
TRANSISTORS
100 VOLTS
50 WATTS



TO-247(3P)



PIN 1.BASE
2.COLLECTOR
3.EMITTER

DIM	MILLIMETERS	
	MIN	MAX
A	20.63	22.38
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.81	15.22
F	11.72	12.84
G	4.20	4.50
H	1.82	2.46
I	2.92	3.23
J	0.89	1.53
K	5.26	5.66
L	18.50	21.50
M	4.68	5.36
N	2.40	2.80
O	3.25	3.65
P	0.55	0.70

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage ($I_c = 3.0\text{A}$, $I_{B1} = 0.3\text{A}$, $L = 1.0\text{mH}$)	$V_{CEO(SUS)}$	100		V
Collector Cutoff Current ($V_{CE} = 100\text{V}$, $V_{BE(OFF)} = -1.5\text{V}$)	I_{CEX}		10	μA
Collector Cutoff Current ($V_{CB} = 100\text{V}$, $I_E = 0$)	I_{CBO}		10	μA
Emitter Cutoff Current ($V_{EB} = 5.0\text{V}$, $I_C = 0$)	I_{EBO}		10	μA

ON CHARACTERISTICS (1)

DC Current Gain ($I_c = 0.3\text{A}$, $V_{CE} = 5.0\text{V}$) * ($I_c = 3.0\text{A}$, $V_{CE} = 5.0\text{V}$)	$h_{FE(2)}$ h_{FE}	60 40	320	
Collector-Emitter Saturation Voltage ($I_c = 3.0\text{A}$, $I_B = 300\text{mA}$)	$V_{CE(sat)}$		1.0	V
Base-Emitter Saturation Voltage ($I_c = 3.0\text{A}$, $I_B = 300\text{mA}$)	$V_{BE(sat)}$		1.5	V

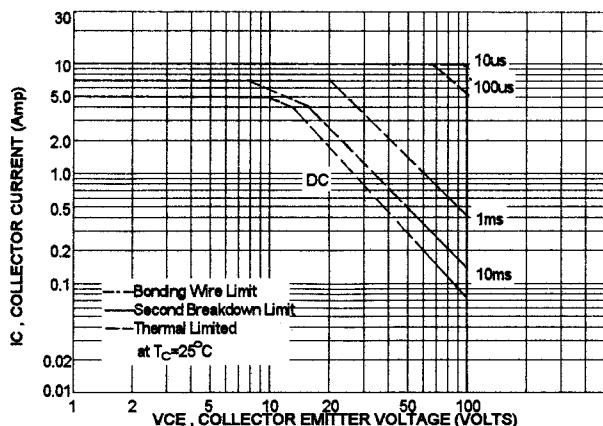
SWITCHING CHARACTERISTICS

Turn-on Time	$V_{CC} = 30\text{V}$, $I_c = 3.0\text{A}$ $I_{B1} = -I_{B2} = 300\text{mA}$ $R_L = 10\text{ohm}$	t_{on}	0.5	μs
Storage Time		t_s	2.0	μs
Fall Time		t_f	1.0	μs

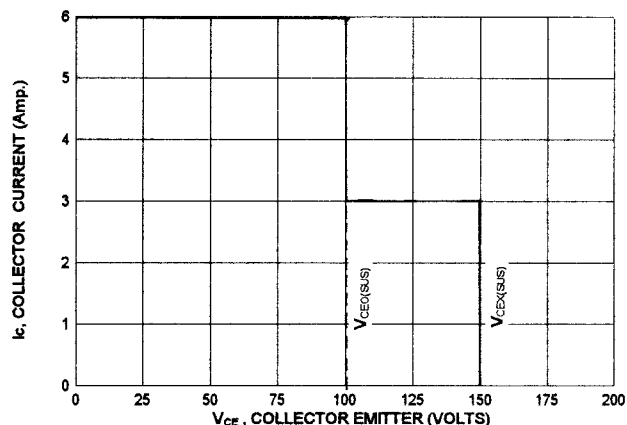
(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$ * $h_{FE(2)}$ Classification :

60	M	120	100	L	200	160	K	320
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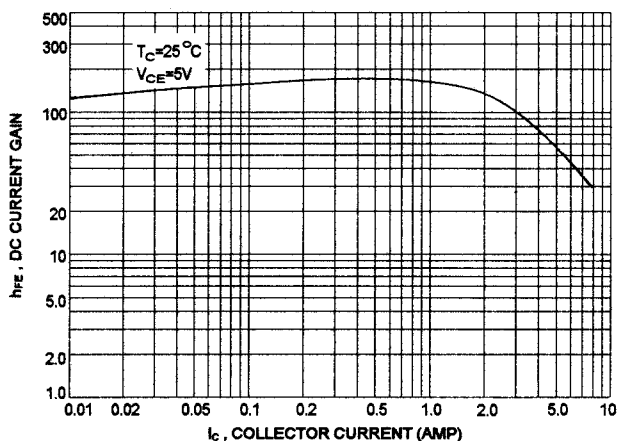
SAFE OPERATING AREA



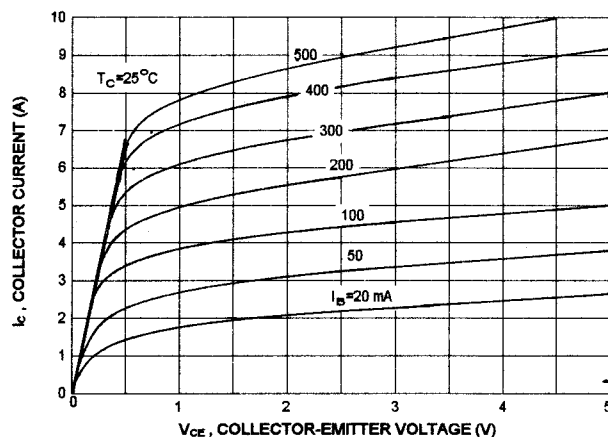
REVERSE BIASE SAFE OPERATING AREA



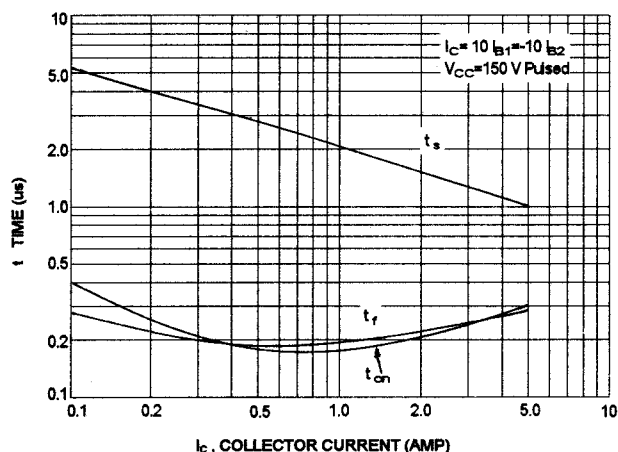
DC CURRENT GAIN



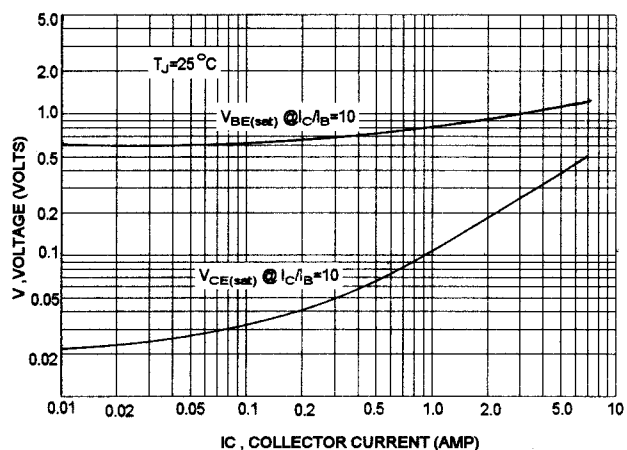
$I_C - V_{CE}$



SWITCHING TIME



"ON" VOLTAGES



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