MOSPEC

PNP SILICON POWER TRANSISTORS

2SB817 transistor is designed for use in general purpose power amplifier,application

FEATURES:
- Collector-Emitter Voltage
  V_{CEO}= 140V(Min)
- DC Current Gain
  hFE= 60-200@I_C= 1.0A
- Complement to 2SD1047

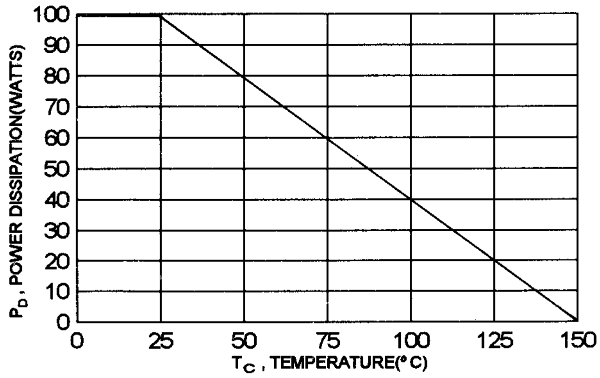
MAXIMUM RATINGS

Characteristic	Symbol	2SB817	Unit
Collector-Emitter Voltage	V_{CEO}	140	V
Collector-Base Voltage	V_{CBO}	160	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current - Continuous - Peak	I_C I_{CM}	12 15	A
Total Power Dissipation @T_C = 25°C Derate above 25°C	P_D	100 0.8	W W/°C
Operating and Storage Junction Temperature Range	T_J ,T_{STG}	-55 to +150	°C

THERMAL CHARACTERISTICS

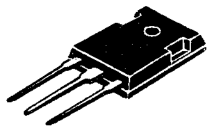
Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	1.25	°C/W

FIGURE -1 POWER DERATING

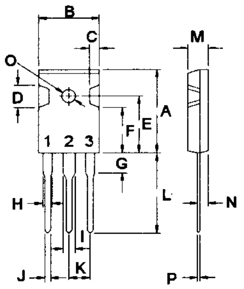


PNP
2SB817

12 AMPERE
POWER
TRANASISTORS
140 VOLTS
100 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°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit

OFF CHARACTERISTICS

Collector-Base Breakdown Voltage (I_C= 5.0 mA, I_E= 0)	$V_{(BR)CBO}$	160		V
Collector-Emitter Breakdown Voltage (I_C= 5.0 mA, I_B= 0)	$V_{(BR)CEO}$	140		V
Emitter-Base Voltage (I_B= 5.0 mA, I_C= 0)	$V_{(BR)EBO}$	6.0		V
Collector Cutoff Current (V_{CB}= 80 V, I_E= 0)	I_{CBO}		100	uA
Emitter Cutoff Current (V_{EB}= 4.0 V, I_C= 0)	I_{EBO}		100	uA

ON CHARACTERISTICS (1)

DC Current Gain (I_C= 1.0 A, V_{CE}= 5.0 V)* (I_C= 6.0 A, V_{CE}= 5.0 V)	hFE(2) hFE	60 20	200	
Collector-Emitter Saturation Voltage (I_C= 5.0 A, I_B= 0.5 A)	$V_{CE(sat)}$		2.5	V
Base-Emitter On Voltage (I_C= 1.0 A, V_{CE}= 5.0 V)	$V_{BE(on)}$		1.5	V

SWITCHING CHARATERISTICS

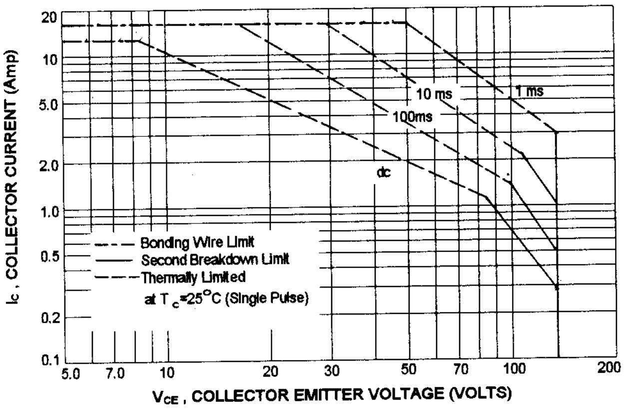
Turn-on Time	V_{CC}= 20V,I_C= 1.0A I_{B1}= -I_{B2}= 100mA PW= 20μs	ton		0.3	us
Storage Time		ts		7.0	us
Fall Time		tf		0.7	us

(1) Pulse Test: Pulse Width =300μ s,Duty Cycle ≦ 2.0%

* hHF(2) Classification:

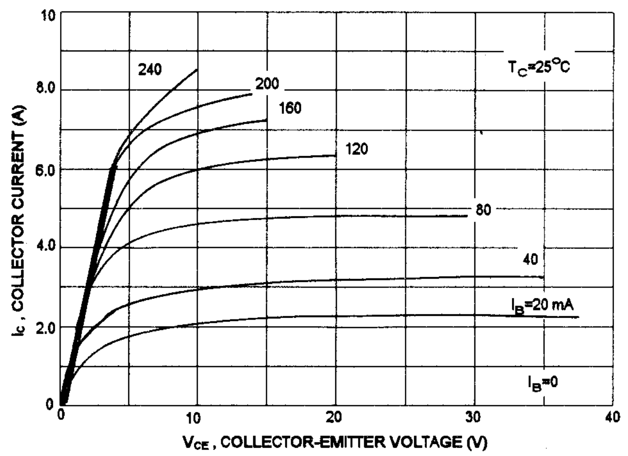
60	D	120	100	E	200

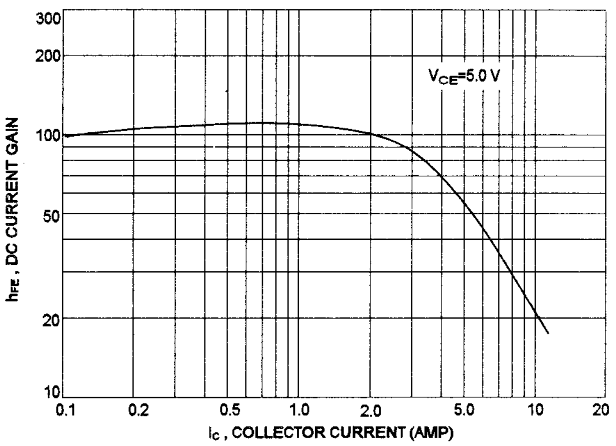
ACTIVE-REGION SAFE OPERATING AREA (SOA)

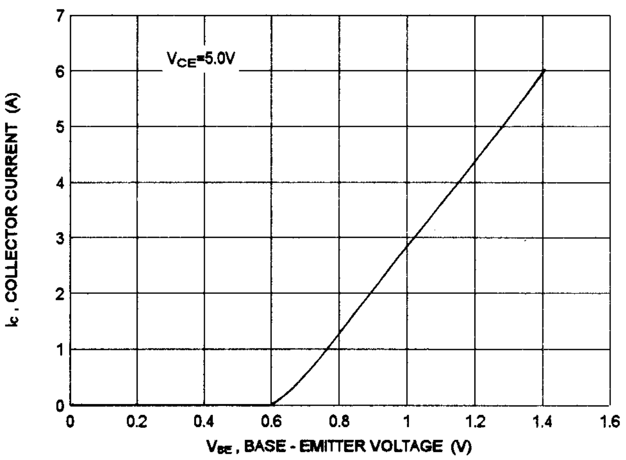


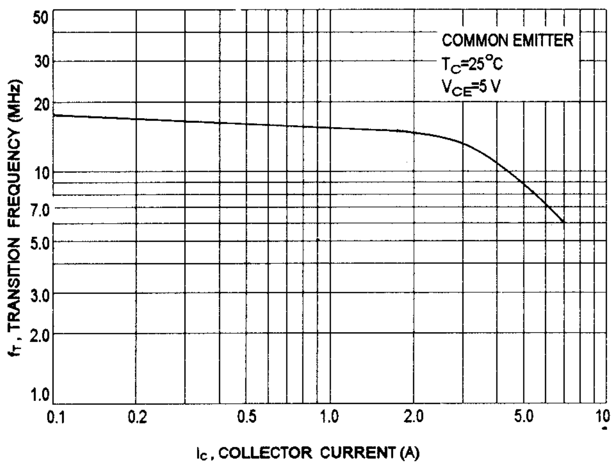
There are two limitation on the power handling ability of a transistor:average junction temperature and second breakdown safe operating area curves indicate I_C-V_{CE} limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation than curves indicate.

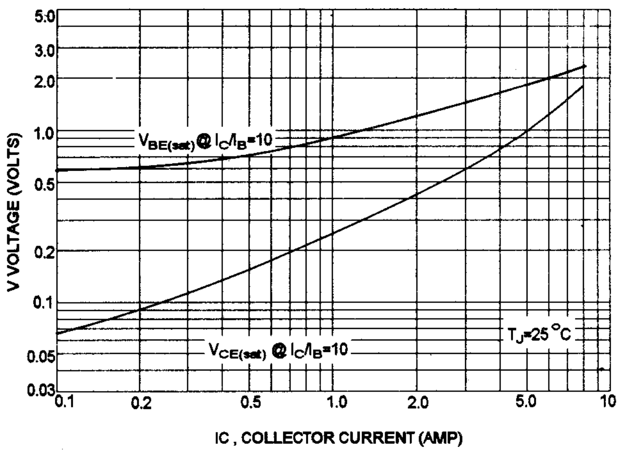
The data of SOA curve is base on $T_{J(PK)}$=150 °C;T_C is variable depending on conditions. second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(PK)} \leq 150$°C,At high case temperatures, thermal limitation will reduce the power that can be handled to values less than the limitations imposed by second breakdown.

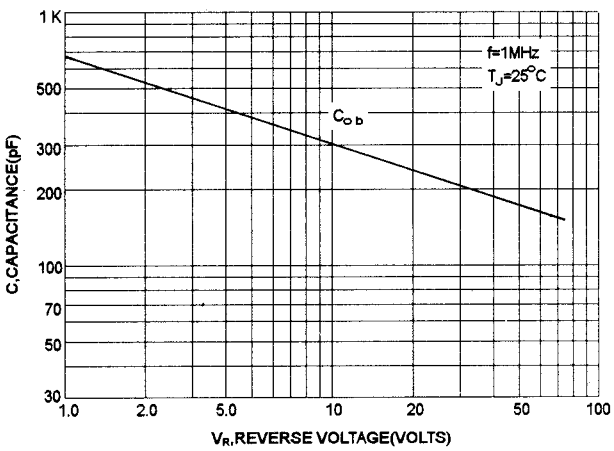

Ic - Vce


DC CURRENT GAIN


Ic - Vbe


fT - Ic


"ON" VOLTAGES


CAPACITANCES