MOSPEC

HIGH-POWER NPN SILICON POWER TRANSISTORS

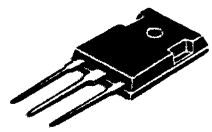
...designed for use in general-purpose amplifier and switching application .

FEATURES:
* Recommend for 150W High Fiderity Audio Frequency Amplifier Output stage
* Complementary to 2SA1494

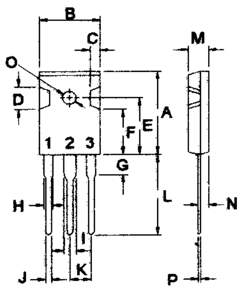
NPN

2SC3858

17 AMPERE
POWER
TRANASISTOR
200 VOLTS
200 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

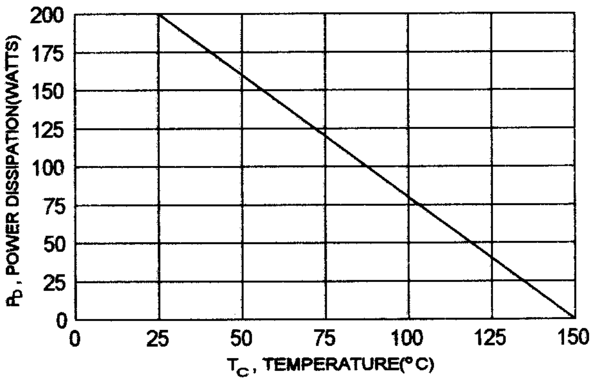
MAXIMUM RATINGS

Characteristic	Symbol	2SC3858	Unit
Collector-Emitter Voltage	V_{CEO}	200	V
Collector-Base Voltage	V_{CBO}	200	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current - Continuous - Peak	I_C I_{CM}	17 20	A
Base current	I_B	2.0	A
Total Power Dissipation @T_C = 25°C Derate above 25°C	P_D	200 1.6	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	0.625	°C/W

FIGURE -1 POWER DERATING



ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

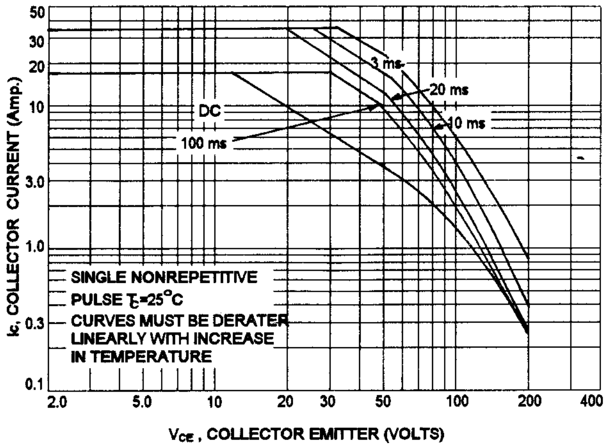
Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage (I_C= 50 mA, I_B= 0)	$V_{(BR)CEO}$	200		V
Collector Cutoff Current (V_{CB}= 200 V, I_E= 0)	I_{CBO}		100	uA
Emitter Cutoff Current (V_{EB}= 6.0 V, I_C= 0)	I_{EBO}		100	uA
ON CHARACTERISTICS (1)				
DC Current Gain (I_C= 8.0 A, V_{CE}= 4.0 V)	hFE	30		
Collector-Emitter Saturation Voltage (I_C= 10 A, I_B= 1.0 A)	$V_{CE(sat)}$		2.5	V
DYNAMIC CHARACTERISTICS				
Current-Gain-Bandwidth Product (I_C = 1.0 A, V_{CE} = 12 V, f = 1.0 MHz)	f_T	10		MHz

SWITCHING CHARATERISTICS

Characteristic	Conditions	Symbol	Min	Max	Unit
Turn-on Time	V_{CC}= 40 V, I_C= 10 A I_{B1}= $-I_{B2}$= 1.0 A R_L= 4.0 ohm	t_{on}	0.50(typ)		us
Storage Time		t_s	1.80(typ)		us
Fall Time		t_f	0.60(typ)		us

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

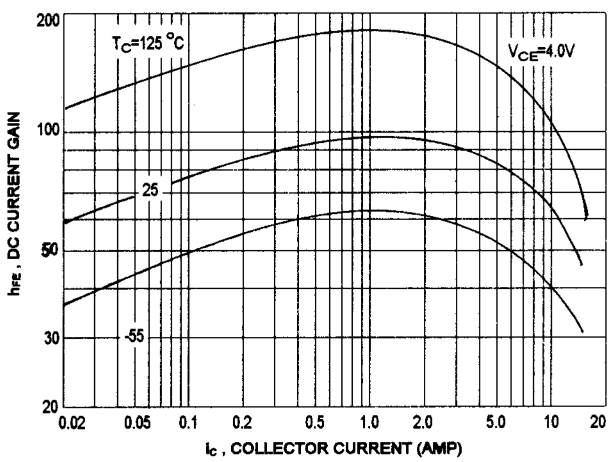
ACTIVE-REGION SAFE OPERATING AREA (SOA)



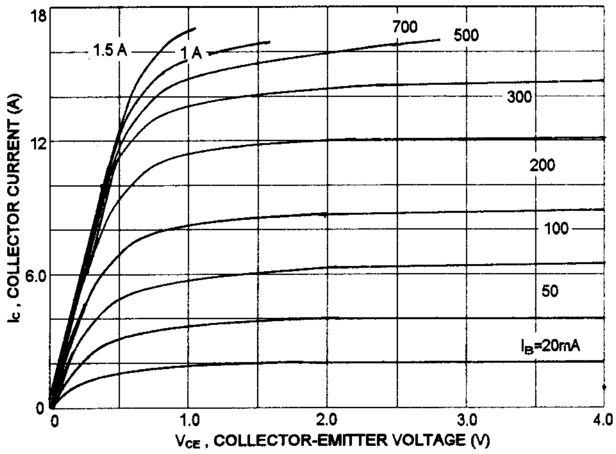
There are two limitation on the power handling ability of a transistor:average junction temperature and second breakdown safe operating area curves indicate I_C-V_{CE} limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation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

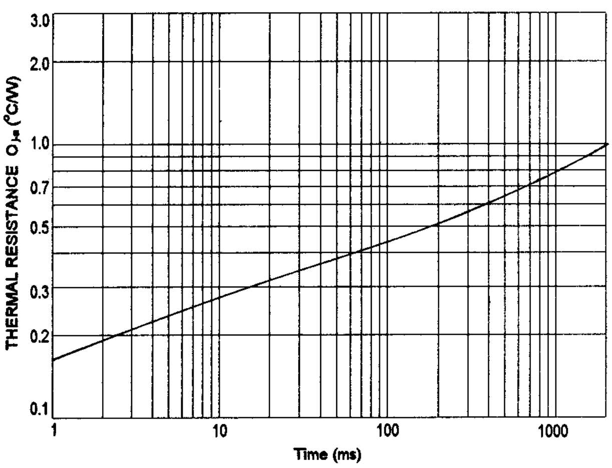
DC CURRENT GAIN



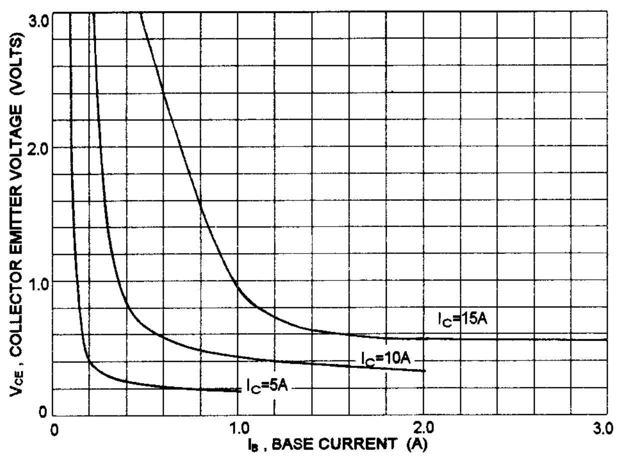
Ic - Vce



O_{j-a} - t



VCE(sat)-I_B



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