MOSPEC

HIGH-POWER PNP SILICON POWER TRANSISTORS

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

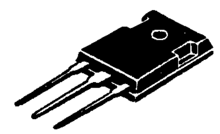
FEATURES:
* Recommend for 105W High Fiderity Audio Frequency Amplifier Output stage
* Complementary to 2SC3519 & 2SC3519A

PNP

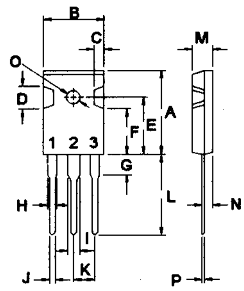
2SA1386
2SA1386A

15 AMPERE
POWER
TRANASISTOR

160 -180 VOLTS
130 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

TO-247(3P)

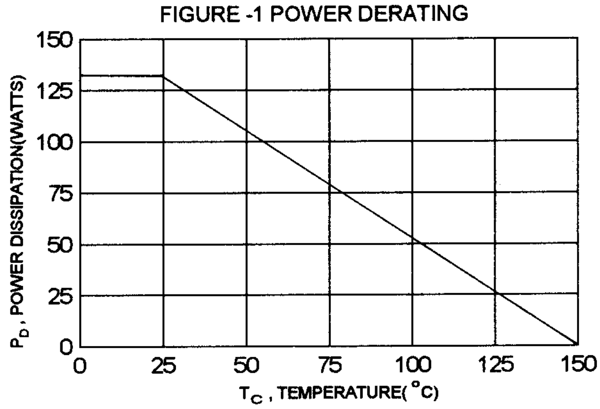
MAXIMUM RATINGS

Characteristic	Symbol	2SA1386	2SA1386A	Unit
Collector-Emitter Voltage	V_{CEO}	160	180	V
Collector-Base Voltage	V_{CBO}	160	180	V
Emitter-Base Voltage	V_{EBO}	5.0		V
Collector Current - Continuous - Peak	I_C I_{CM}	15 20		A
Base current	I_B	4.0		A
Total Power Dissipation @T_C = 25°C Derate above 25°C	P_D	130 1.04		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	0.961	°C/W

FIGURE -1 POWER DERATING

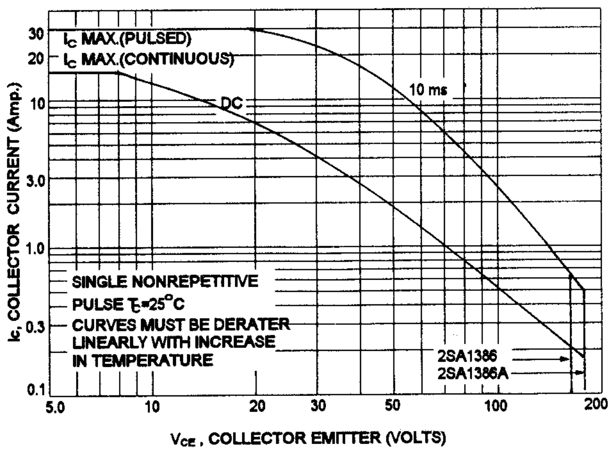


ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C= 25 mA, I_B= 0)	2SA1386 2SA1386A	$V_{(BR)CEO}$	160 180		V
Collector Cutoff Current (V_{CB}= 160 V, I_E= 0) (V_{CB}= 180 V, I_E= 0)	2SA1386 2SA1386A	I_{CBO}		100 100	uA
Emitter Cutoff Current (V_{EB}= 5.0 V, I_C= 0)		I_{EBO}		100	uA
ON CHARACTERISTICS (1)					
DC Current Gain (I_C= 5.0 A, V_{CE}= 4.0 V)		hFE	50		
Collector-Emitter Saturation Voltage (I_C= 5.0 A, I_B= 500 mA)		$V_{CE(sat)}$		2.0	V
DYNAMIC CHARACTERISTICS					
Current-Gain-Bandwidth Product (I_C = 2.0 A, V_{CE} = 12 V, f = 1.0 MHz)		f_T	10		MHz
SWITCHING CHARATERISTICS					
Turn-on Time	V_{CC}= 40 V, I_C= 10 A I_{B1}= $-I_{B2}$= 1.0 A R_L= 4 ohm	t_{on}	0.30(typ)		us
Storage Time		t_s	0.75(typ)		us
Fall Time		t_f	0.25(typ)		us

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

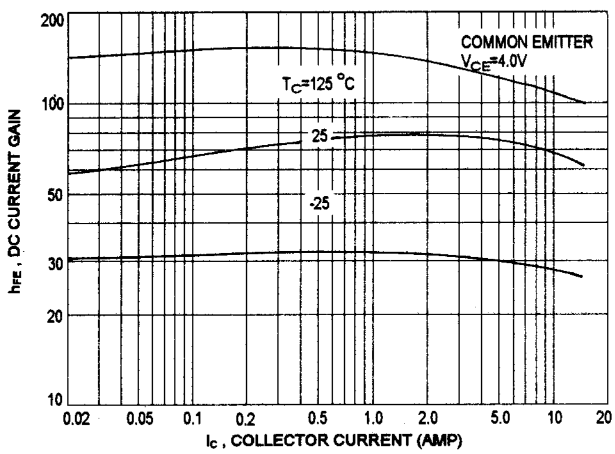
ACTIVE REGION SAFE OPERATING AREA (SOA)



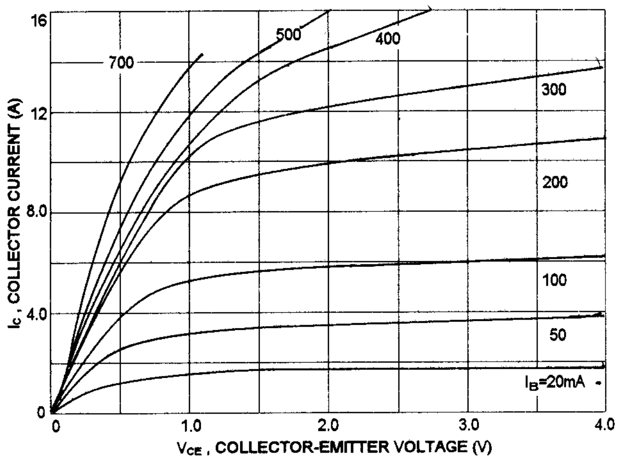
There are two limitation on the power handling ability of a transistor:average junction temperature and second breakdown safe operating area curves indicate I_C-V_{CE} limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation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

The data of SOA 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.

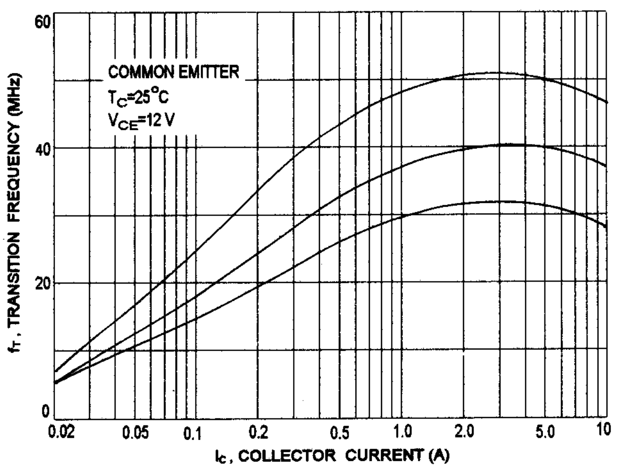
DC CURRENT GAIN



Ic - Vce



f_T - Ic



VCE(sat)-I_B