SYC SEMICONDUCTORES Y COMPONENTES

2SD718

NPN 120V 8.0A 80W TO-3P

HIGH-POWER NPN SILICON POWER TRANSISTORS

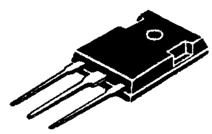
...designed for use in general-purpose amplifier and switching application .

FEATURES:
* Recommend for 45 - 50W Audio Frequency Amplifier Output stage.
* Complementary to 2SB688

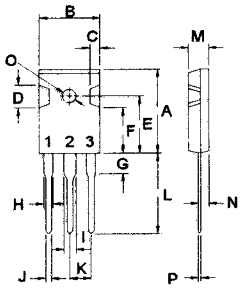
NPN
2SD718

8 AMPERE
POWER
TRANASISTOR

120 VOLTS
80 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

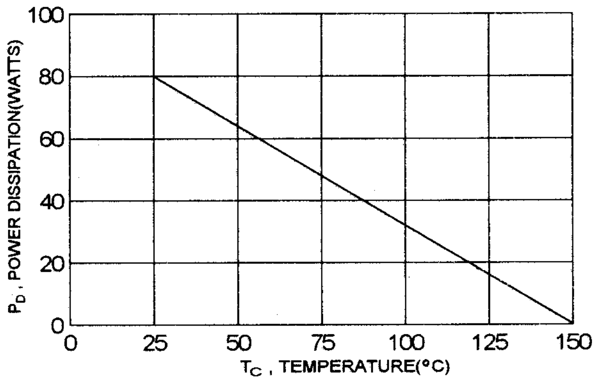
MAXIMUM RATINGS

Characteristic	Symbol	2SD718	Unit
Collector-Emitter Voltage	V_{CEO}	120	V
Collector-Base Voltage	V_{CBO}	120	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous - Peak	I_C I_{CM}	8.0 16	A
Base current	I_B	0.8	A
Total Power Dissipation @T_C = 25°C Derate above 25°C	P_D	80 0.64	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	1.56	°C/W

FIGURE -1 POWER DERATING



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

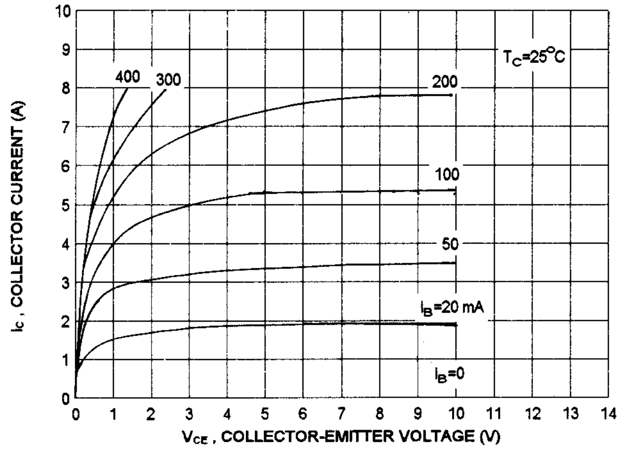
Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage (I_C= 50 mA, I_B= 0)	$V_{(BR)CEO}$	120		V
Collector Cutoff Current (V_{CB}= 120 V, I_E= 0)	I_{CBO}		10	uA
Emitter Cutoff Current (V_{EB}= 5.0 V, I_C= 0)	I_{EBO}		10	uA
ON CHARACTERISTICS (1)				
DC Current Gain (I_C= 1.0 A, V_{CE}= 5.0 V) *	hFE(2)	55	160	
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= 5.0 A, V_{CE}=5.0 V)	$V_{BE(on)}$		1.5	V
DYNAMIC CHARACTERISTICS				
Current-Gain-Bandwidth Product (I_C = 1.0 A, V_{CE} = 5.0 V, f = 1.0 MHz)	f_T	12(typ)		MHz
Output capacitance (V_{CB} = 10 V ,I_E = 0, f = 1.0 MHz)	C_{ob}	170(typ)		pF

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

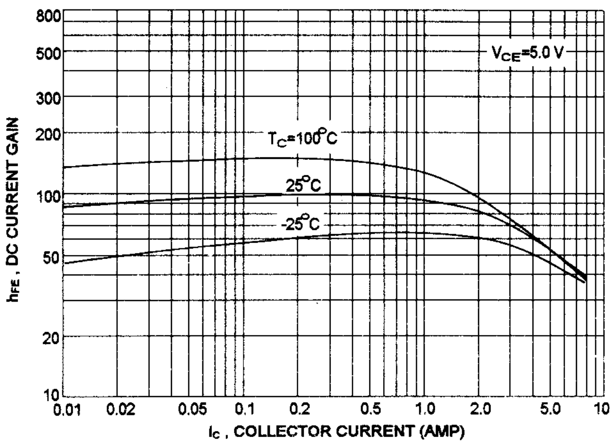
* hFE(2) Classification :

55 R 110	80 O 160

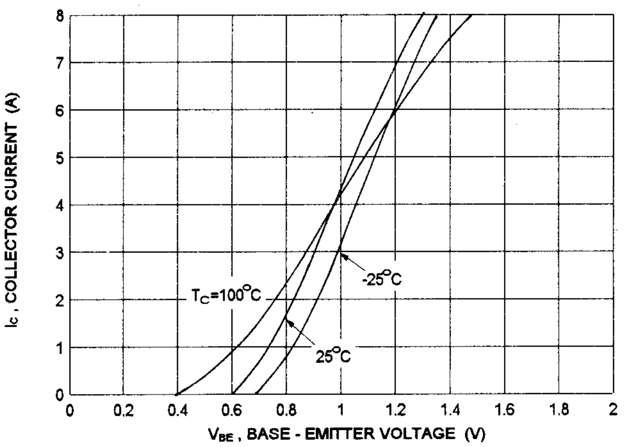
Ic - Vce



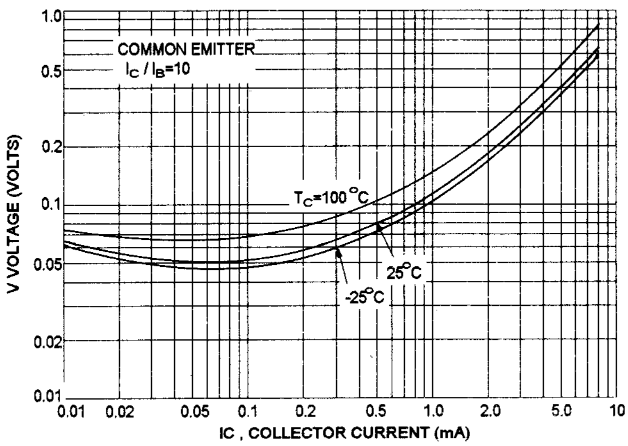
DC CURRENT GAIN



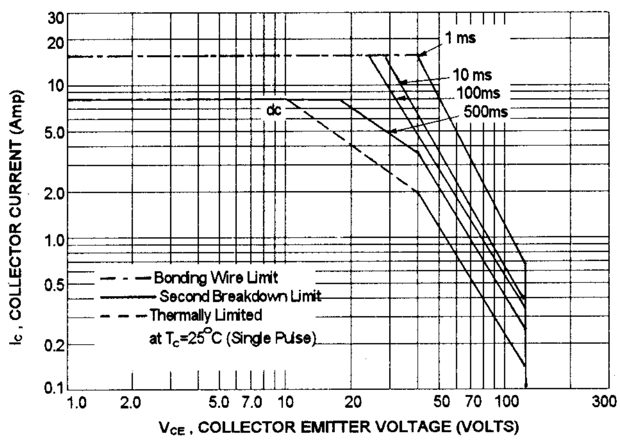
Ic - Vbe



$V_{CE(sat)}$-I_C



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.