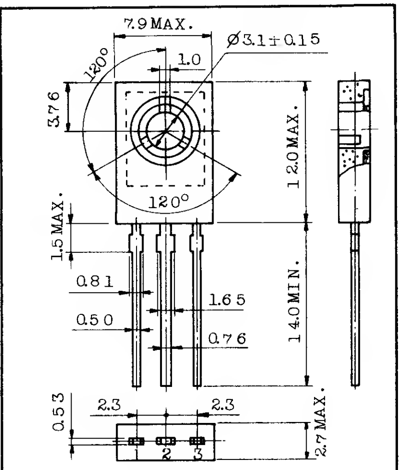
2SA1184

SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

AUDIO FREQUENCY POWER AMPLIFIER APPLICATIONS.

Unit in mm



1. EMITTER
2. COLLECTOR (HEAT SINK)
3. BASE

JEDEC	TO−126
EIAJ	—
TOSHIBA	2−8F1A

Mounting Kit No. AC46C
Weight : 0.72g

FEATURES :

- Complementary to 2SC2824.
- Suitable for driver of 60 to 80 watts.
- High breakdown voltage.

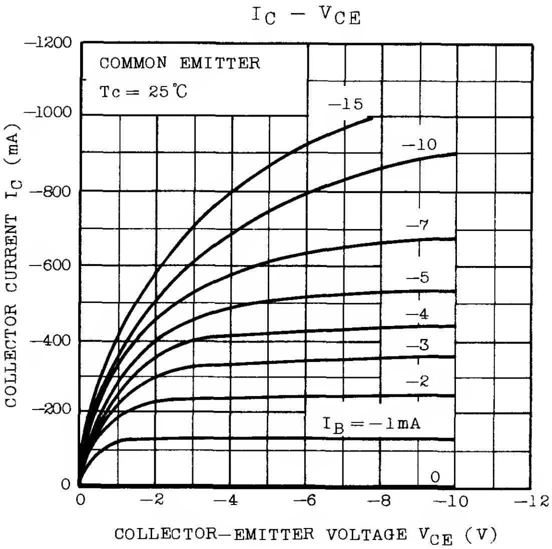
MAXIMUM RATINGS (Ta=25°C)

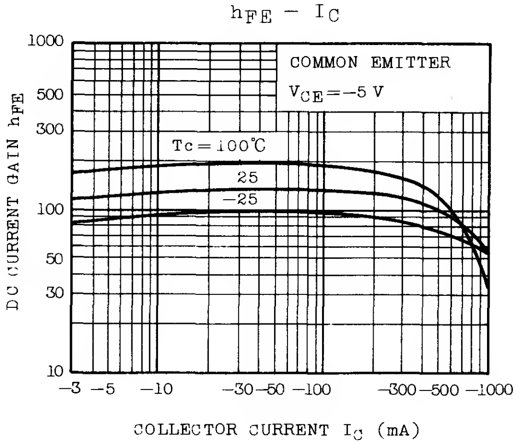
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	-120	V
Collector-Emitter Voltage		V_{CEO}	-120	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current		I_C	-1	A
Base Current		I_B	-100	mA
Collector Power Dissipation	Ta=25°C	P_C	1	W
	Tc=25°C		15	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55~150	°C

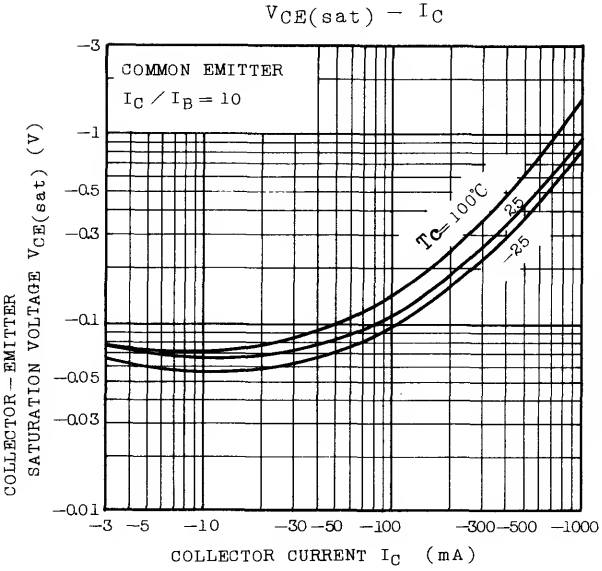
ELECTRICAL CHARACTERISTICS (Ta=25°C)

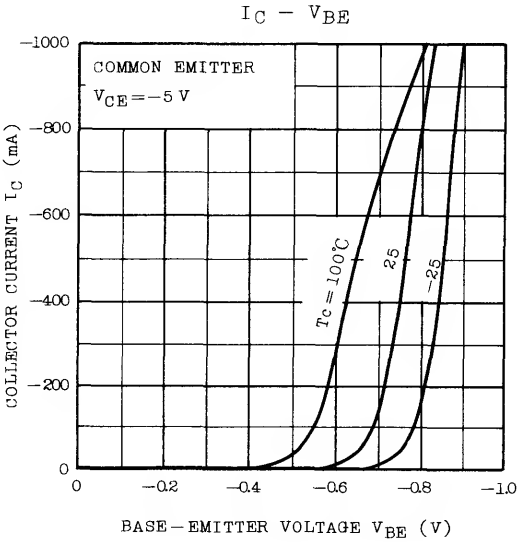
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=-120V, I_E=0	-	-	-100	nA
Emitter Cut-off Current	I_{EBO}	V_{EB}=-5V, I_C=0	-	-	-100	nA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-10mA, I_B=0	-120	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=-1mA, I_C=0	-5	-	-	V
DC Current Gain	h_{FE} (Note)	V_{CE}=-5V, I_C=-100mA	80	-	240	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-500mA, I_B=-50mA	-	-0.40	-1.0	V
Base-Emitter Voltage	V_{BE}	V_{CE}=-5V, I_C=-500mA	-	-0.77	-1.0	V
Transition Frequency	f_T	V_{CE}=-5V, I_C=-100mA	-	120	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=-10V, I_E=0, f=1MHz	-	30	-	pF

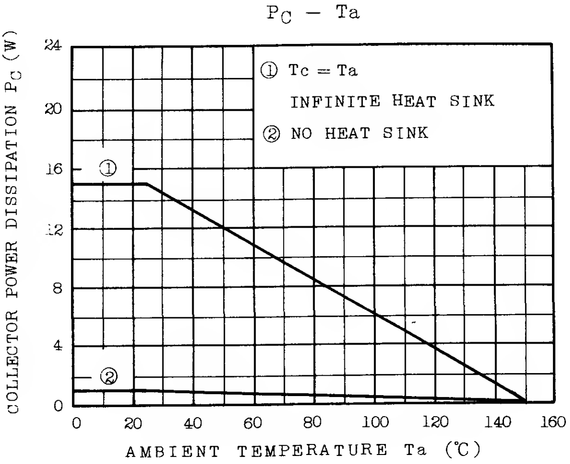
Note : h_{FE} Classitication O:80~160 Y:120~240

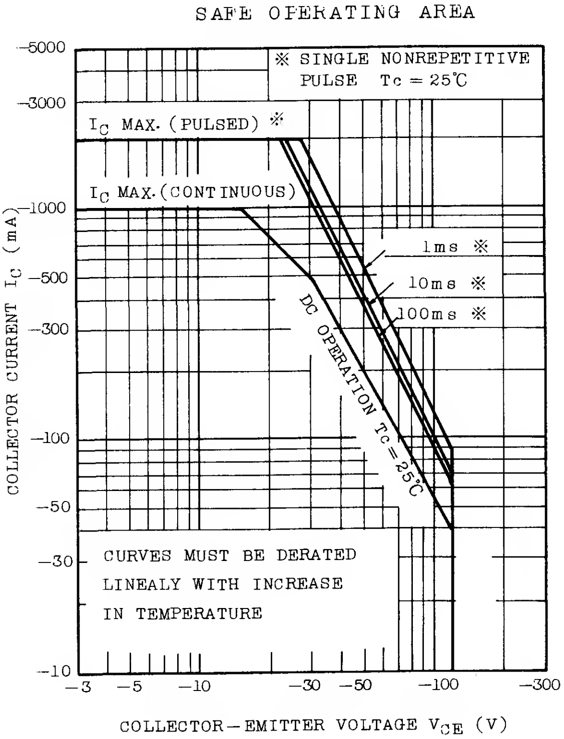

I_C – V_{CE}
COMMON EMITTER
Tc = 25°C
−15
−10
−7
−5
−4
−3
−2
I_B = −1mA
0
COLLECTOR CURRENT I_C (mA)
−1200
−1000
−800
−600
−400
−200
0
0
−2
−4
−6
−8
−10
−12
COLLECTOR−EMITTER VOLTAGE V_{CE} (V)


h_{FE} – I_C
COMMON EMITTER
V_{CE} = −5 V
Tc = 100°C
25
−25
DC CURRENT GAIN h_{FE}
1000
500
300
100
50
30
10
−3
−5
−10
−30
−50
−100
−300
−500
−1000
COLLECTOR CURRENT I_C (mA)


$V_{CE(sat)}$ – I_C
COMMON EMITTER
I_C / I_B = 10
Tc = 100°C
25
−25
COLLECTOR−EMITTER SATURATION VOLTAGE $V_{CE(sat)}$ (V)
−3
−1
−0.5
−0.3
−0.1
−0.05
−0.03
−0.01
−3
−5
−10
−30
−50
−100
−300
−500
−1000
COLLECTOR CURRENT I_C (mA)


I_C – V_{BE}
COMMON EMITTER
V_{CE} = −5 V
Tc = 100°C
25
−25
COLLECTOR CURRENT I_C (mA)
−1000
−800
−600
−400
−200
0
0
−0.2
−0.4
−0.6
−0.8
−1.0
BASE−EMITTER VOLTAGE V_{BE} (V)


PC — Ta
① Tc = Ta
INFINITE HEAT SINK
② NO HEAT SINK
①
②
COLLECTOR POWER DISSIPATION PC (W)
24
20
16
12
8
4
0
0
20
40
60
80
100
120
140
160
AMBIENT TEMPERATURE Ta (℃)


SAFE OPERATING AREA
※ SINGLE NONREPETITIVE PULSE Tc = 25℃
IC MAX. (PULSED) ※
IC MAX. (CONTINUOUS)
1ms ※
10ms ※
100ms ※
DC OPERATION Tc = 25℃
CURVES MUST BE DERATED LINEALY WITH INCREASE IN TEMPERATURE
COLLECTOR CURRENT IC (mA)
−5000
−3000
−1000
−500
−300
−100
−50
−30
−10
−3
−5
−10
−30
−50
−100
−300
COLLECTOR−EMITTER VOLTAGE VCE (V)