2SD1356

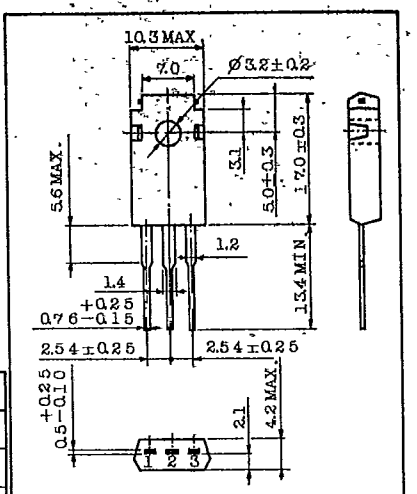
SILICON NPN TRIPLE DIFFUSED TYPE

POWER AMPLIFIER APPLICATIONS.

FEATURES:

- High Power Dissipation : P_C=30W (T_C=25°C)
- Good Linearity of h_{FE}
- Complementary to 2SB996
- Recommended for 20~25W High Fidelity Audio Frequency Amplifier Output Stage.

Unit in mm



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

JEDEC	–
EIAJ	–
TOSHIBA	2-10K1A

Weight : 2.0g

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	4	A
Base Current	I_B	0.4	A
Collector Power Dissipation (T_C=25°C)	P_C	30	W
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}=80V, I_E=0	–	–	30	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=5V, I_C=0	–	–	100	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=50mA, I_B=0	80	–	–	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10mA, I_C=0	5	–	–	V
DC Current Gain	$h_{FE(1)}$ (Note)	V_{CE}=5V, I_C=0.5A	40	–	240	
	$h_{FE(2)}$	V_{CE}=5V, I_C=3A	15	50	–	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=3A, I_B=0.3A	–	0.45	1.5	V
Base-Emitter Voltage	V_{BE}	V_{CE}=5V, I_C=3A	–	1.0	1.5	V
Transition Frequency	f_T	V_{CE}=5V, I_C=0.5A	–	8.0	–	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	–	90	–	pF

Note : $h_{FE(1)}$ Classification R : 40~80, O : 70~140, Y : 120~240

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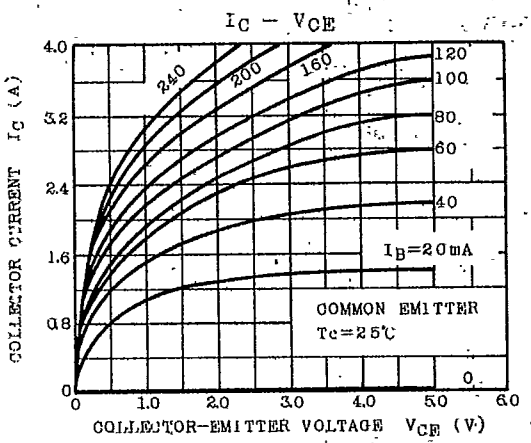
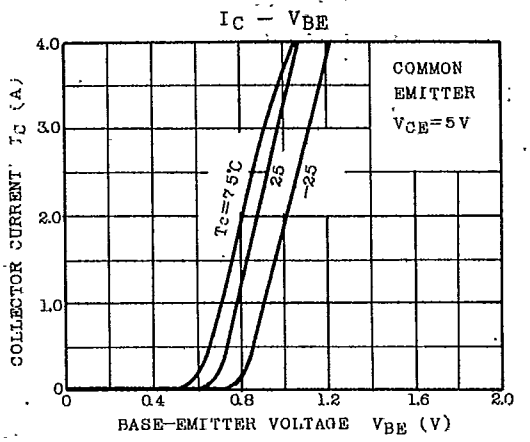
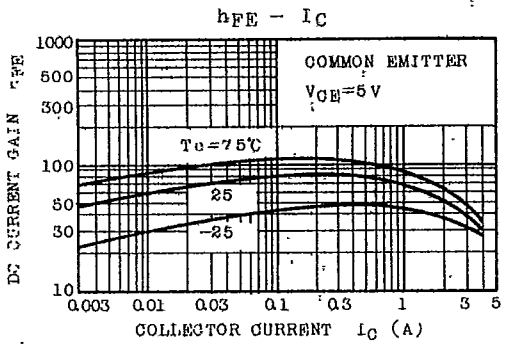
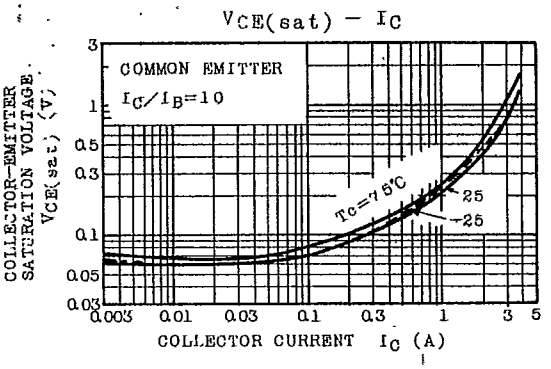
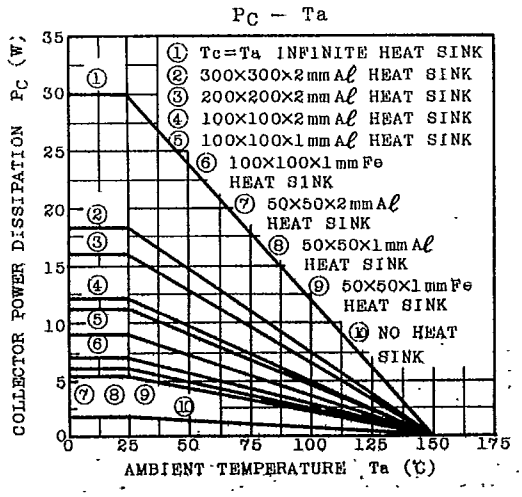
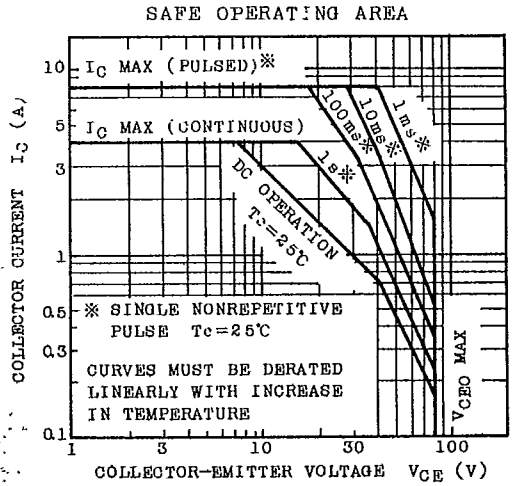

$I_C - V_{CE}$
COLLECTOR CURRENT I_C (A)
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)
240
200
160
120
100
80
60
40
I_B=20mA
0
COMMON EMITTER
Tc=25℃


$I_C - V_{BE}$
COLLECTOR CURRENT I_C (A)
BASE-EMITTER VOLTAGE V_{BE} (V)
COMMON EMITTER
V_{CE}=5V
Tc=75℃
25
-25


$h_{FE} - I_C$
DC CURRENT GAIN h_{FE}
COLLECTOR CURRENT I_C (A)
COMMON EMITTER
V_{CE}=5V
Tc=75℃
25
-25


$V_{CE(sat)} - I_C$
COLLECTOR-EMITTER SATURATION VOLTAGE $V_{CE(sat)}$ (V)
COLLECTOR CURRENT I_C (A)
COMMON EMITTER
I_C/I_B=10
Tc=75℃
25
-25


$P_C - Ta$
COLLECTOR POWER DISSIPATION P_C (W)
AMBIENT TEMPERATURE Ta (℃)
① Tc=Ta INFINITE HEAT SINK
② 300×300×2mmAℓ HEAT SINK
③ 200×200×2mmAℓ HEAT SINK
④ 100×100×2mmAℓ HEAT SINK
⑤ 100×100×1mmAℓ HEAT SINK
⑥ 100×100×1mmFe HEAT SINK
⑦ 50×50×2mmAℓ HEAT SINK
⑧ 50×50×1mmAℓ HEAT SINK
⑨ 50×50×1mmFe HEAT SINK
⑩ NO HEAT SINK


SAFE OPERATING AREA
COLLECTOR CURRENT I_C (A)
COLLECTOR-EMITTER VOLTAGE V_{CE} (V)
I_C MAX (PULSED)※
I_C MAX (CONTINUOUS)
100ms※
10ms※
1ms※
1s※
DC OPERATION Tc=25℃
※ SINGLE NONREPETITIVE PULSE Tc=25℃
CURVES MUST BE DERATED LINEARLY WITH INCREASE IN TEMPERATURE
V_{CEO} MAX