SILICON PNP TRIPLE DIFFUSED MAS TYPE

2SA656A
2SA657A
2SA658A

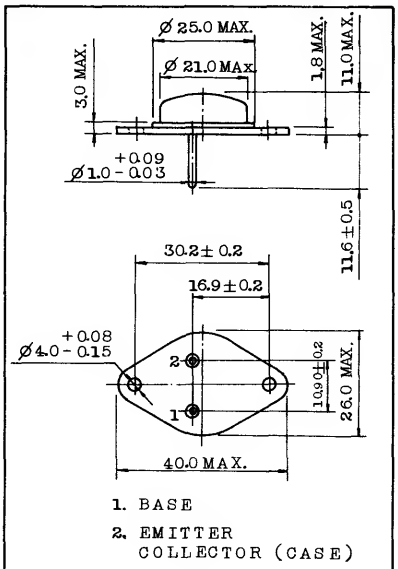
INDUSTRIAL APPLICATIONS

POWER AMPLIFIER APPLICATIONS.
POWER SWITCHING APPLICATIONS.
DC-DC CONVERTER APPLICATIONS.
REGULATOR APPLICATIONS.

FEATURES:

- High Voltage : V_{CBO}=-130V, V_{CEO}=-110V (2SA656A)
- Complementary to 2SC519A, 2SC520A and 2SC521A.

Unit in mm



1. BASE
2. EMITTER
   COLLECTOR (CASE)

JEDEC	TO-3
EIAJ	TC-3, TB-3
TOSHIBA	2-21A1A

Mounting Kit No. AC73
Weight : 12g

MAXIMUM RATINGS (Ta=25°C)

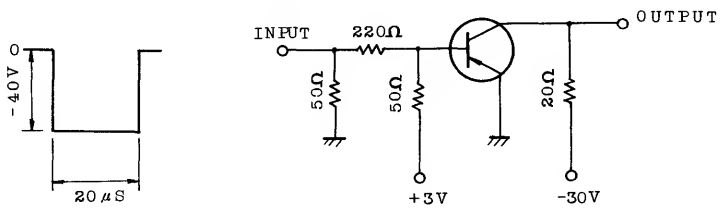
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	2SA656A	V_{CBO}	-130	V
	2SA657A		-100	
	2SA658A		-70	
Collector-Emitter Voltage	2SA656A	V_{CEO}	-110	V
	2SA657A		-80	
	2SA658A		-50	
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current		I_C	-7	A
Base Current		I_B	-2	A
Collector Power Dissipation	Tc=25°C	P_C	50	W
	(Note)		25	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-65 ∿ 150	°C

Note : Unit mounted a 300x300x2mm Al on a heat sink with silicone greased mica insulator.

ELECTRICAL CHARACTERISITICS (Ta=25°C)

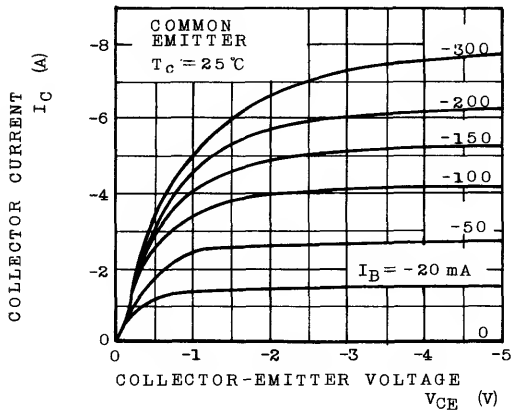
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	2SA656A	I_{CBO}	V_{CB}=-130V, I_E=0	-	-	-100	μA
	2SA657A		V_{CB}=-100V, I_E=0	-	-	-100	
	2SA658A		V_{CB}=-70V, I_E=0	-	-	-100	
Emitter Cut-off Current		I_{EBO}	V_{EB}=-5V, I_C=0	-	-	-5	mA
Collector-Emitter Breakdown Voltage	2SA656A	$V_{(BR)CEO}$	I_C=-50mA, I_B=0	-110	-	-	V
	2SA657A			-80	-	-	
	2SA658A			-50	-	-	
DC Current Gain		$h_{FE(1)}$	V_{CE}=-5V, I_C=-1A	30	-	300	
		$h_{FE(2)}$	V_{CE}=-5V, I_C=-5A	15	-	-	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	I_C=-5A, I_B=-1A	-	-0.7	-2	V
	Base-Emitter	$V_{BE(sat)}$		-	-1.4	-2.5	
Transition Frequency		f_T	V_{CE}=-10V, I_C=-1A	-	5	-	MHz
Collector Output Capacitance		C_{ob}	V_{CB}=-50V, I_E=0, f=1MHz	-	150	-	pF
Switching Time	Turn-on Time	t_{on}	(Fig.)	-	0.5	-	μs
	Storage Time	t_{stg}		-	3.0	-	
	Fall Time	t_f		-	0.4	-	

Fig. SWITCHING TIME TEST CIRCUIT

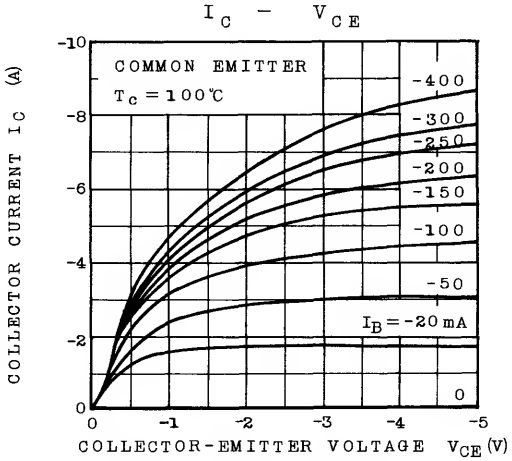


DUTY CYCLE ≦ 2%

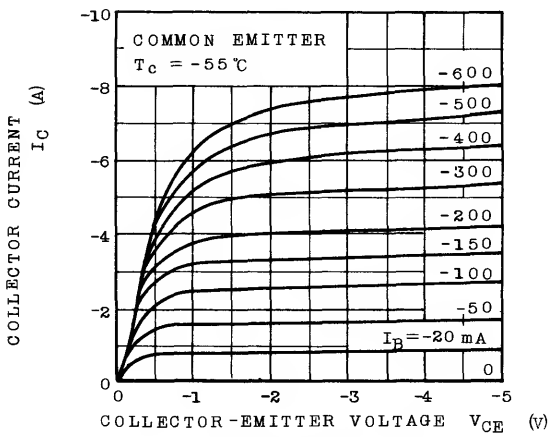
I_C – V_{CE}



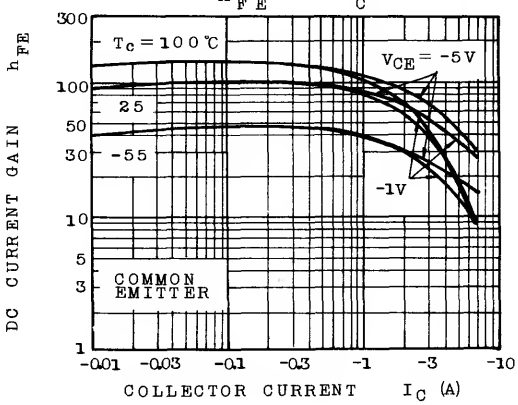
I_C – V_{CE}



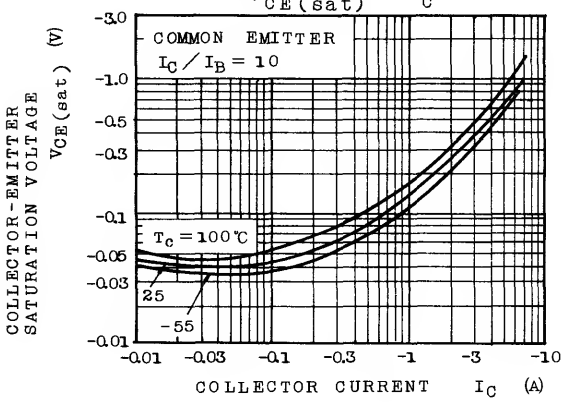
I_C – V_{CE}



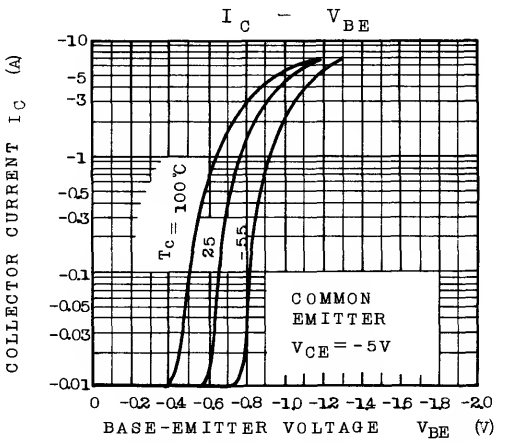
h_{FE} – I_C



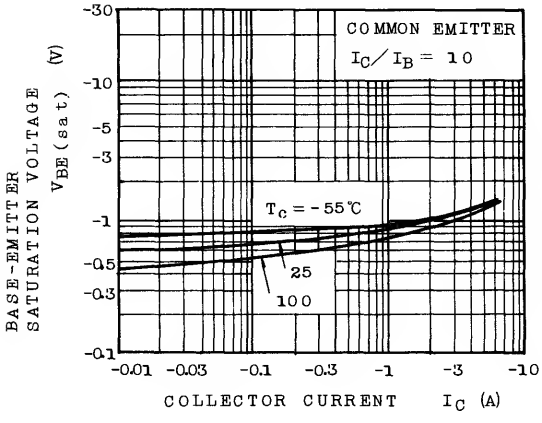
$V_{CE(sat)}$ – I_C



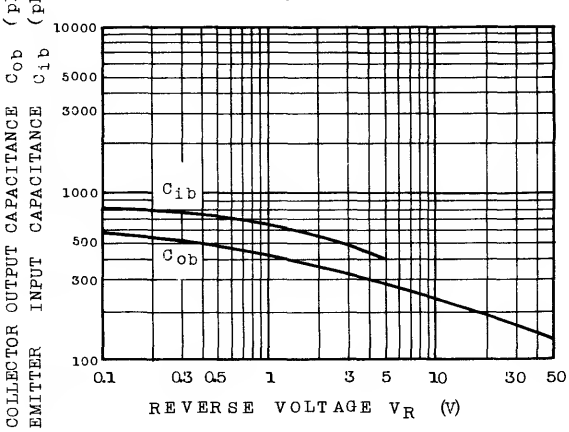
I_C – V_{BE}



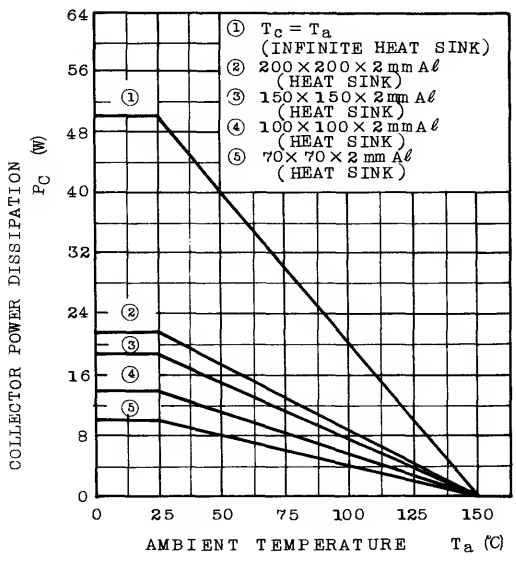
$V_{BE(sat)}$ – I_C



C_{ob}, C_{ib} – V_R



P_C – T_a



SAFE OPERATING AREA