2SC507

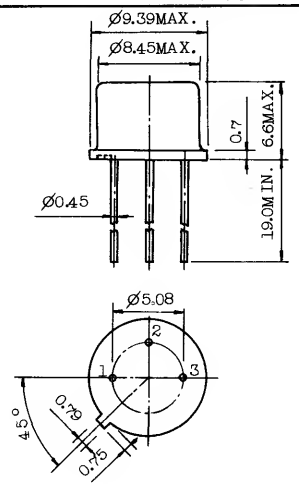
SILICON NPN TRIPLE DIFFUSED TYPE (PCT PROCESS)

VIDEO AMPLIFIER APPLICATIONS.
HIGH FREQUENCY AMPLIFIER APPLICATIONS.
HIGH VOLTAGE SWITCHING APPLICATIONS.

FEATURES:

- High Breakdown Voltage
  : V_{CBO}=170V, V_{CEO}=120V
- High Gain and Excellent h_{FE} Linearity
  : I_C=100mA(Max.)
- High Transition Frequency : f_T=250MHz(Typ.)
- Low Output Capacitance : C_{ob}=2.8pF(Typ.)

Unit in mm



1. EMITTER
2. BASE
3. COLLECTOR(CASE)

JEDEC	TO — 39
EIAJ	TC — 5, TB — 5B
TOSHIBA	2 — 8B1A

Weight : 1.13g

MAXIMUM RATING (Ta=25°C)

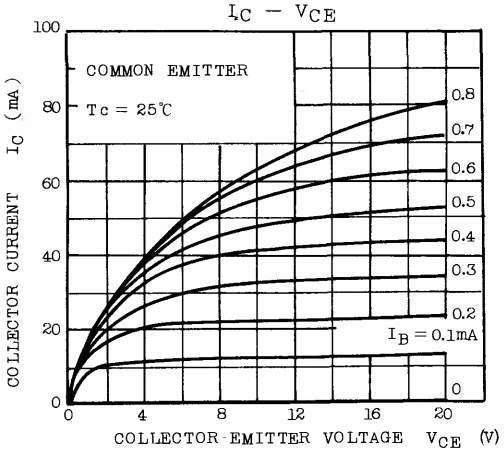
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	170	V
Collector-Emitter Voltage		V_{CEO}	120	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	100	mA
Base Current		I_B	20	mA
Collector Power Dissipation	Ta=25°C	P_C	750	mW
	Tc=25°C		23	W
Junction Temperature		T_j	175	°C
Storage Temperature Range		T_{stg}	-65∿175	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

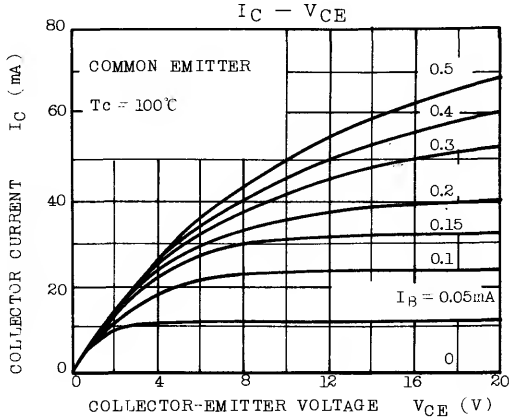
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=100V I_E=0	-	-	0.5	μA
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0	-	-	1.0	μA
Breakdown Voltage	Collector-Base	$V_{(BR)CBO}$	I_C=0.1mA, I_E=0	170	-	-	V
	Collector-Emitter	$V_{(BR)CEO}$	I_C=1mA, I_B=0	120	-	-	
	Emitter-Base	$V_{(BR)EBO}$	I_E=0.1mA, I_C=0	5	-	-	
DC Current Gain		h_{FE} (Note)	V_{CE}=5V, I_C=10mA	40	70	240	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	I_C=10mA, I_B=1mA	-	0.4	0.8	V
	Base-Emitter	$V_{BE(sat)}$	I_C=10mA, I_B=1mA	-	0.85	1.2	
Transition Frequency		f_T	V_{CE}=20V, I_C=10mA	100	250	-	MHz
Collector Output Capacitance		C_{ob}	V_{CB}=20V, I_E=0, f=1MHz	-	2.8	4.0	pF

Note : h_{FE} Classification R : 40 ∿ 80, O : 70 ∿ 140, Y : 120 ∿ 240

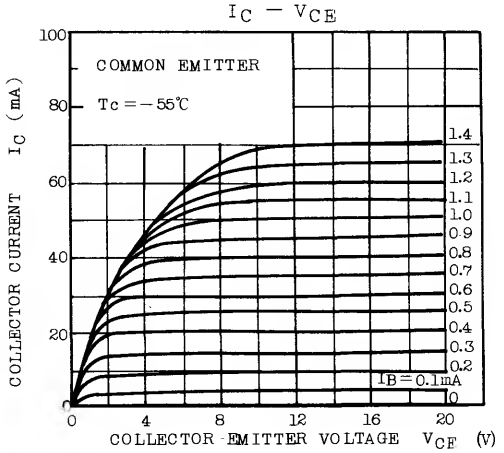
$I_C - V_{CE}$



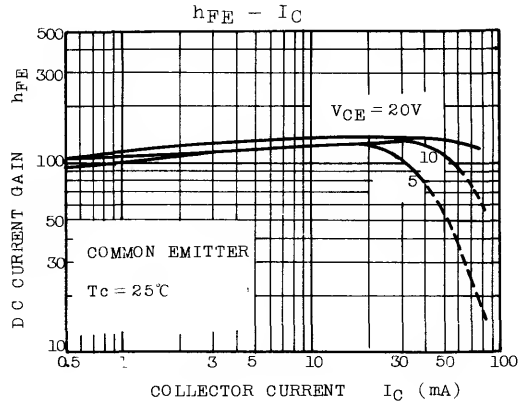
$I_C - V_{CE}$



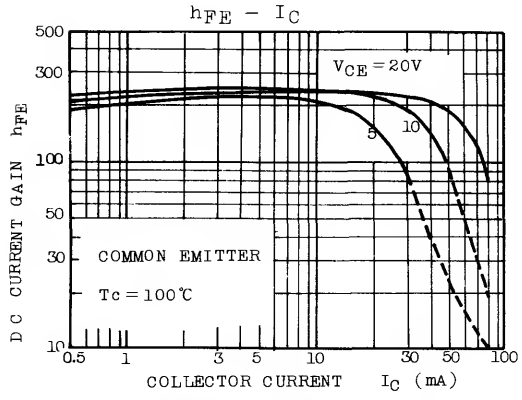
$I_C - V_{CE}$



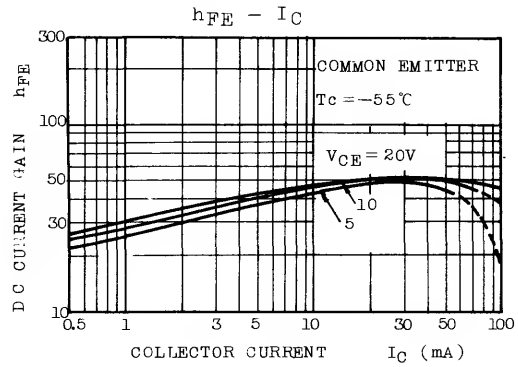
$h_{FE} - I_C$



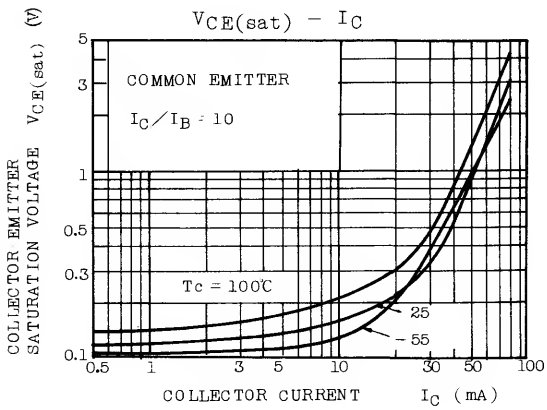
$h_{FE} - I_C$



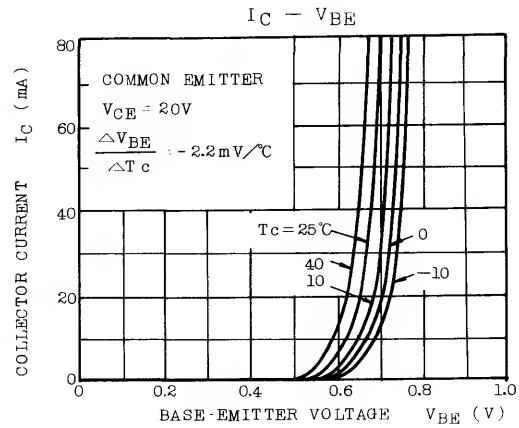
$h_{FE} - I_C$



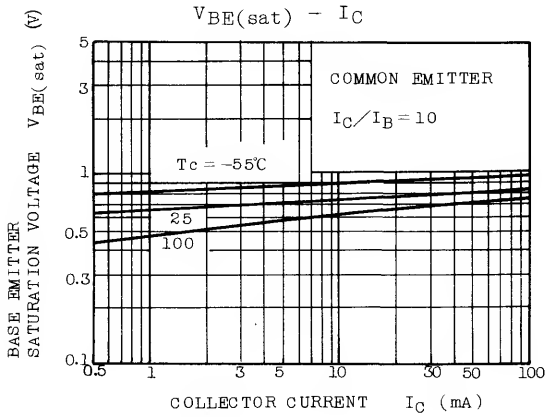
$V_{CE(sat)} - I_C$



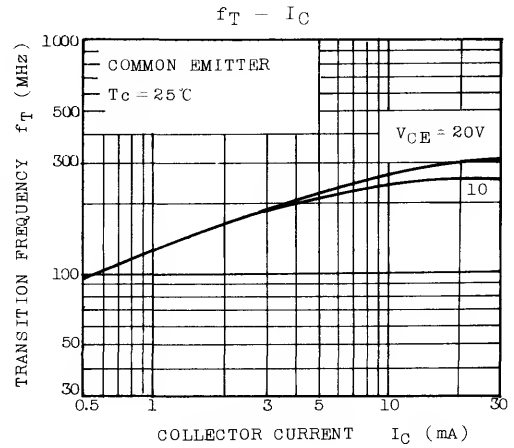
$I_C - V_{BE}$



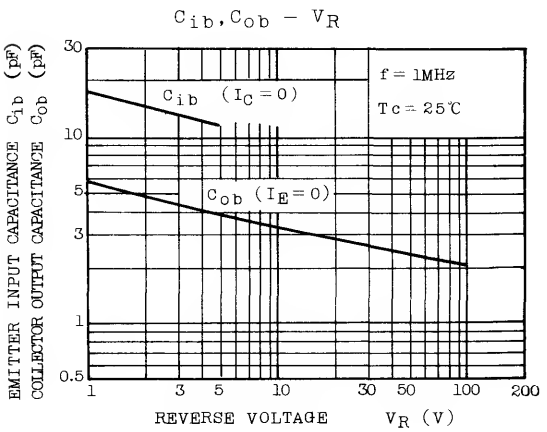
$V_{BE(sat)} - I_C$



$f_T - I_C$



$C_{ib}, C_{ob} - V_R$



$P_C - Ta$