2SC503
2SC504

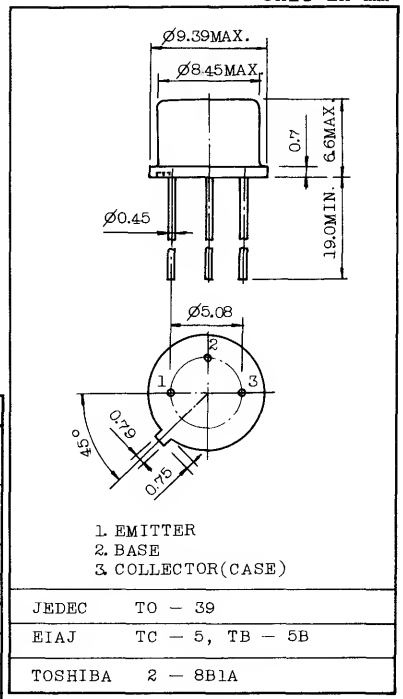
SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

Unit in mm

HIGH FREQUENCY AMPLIFIER APPLICATIONS.
HIGH SPEED SWITCHING APPLICATIONS.

FEATURES:

- High Transition Frequency : f_T=80MHz (Typ.)
- High Breakdown Voltage
  : V_{CEO}=80V (2SC503)
  : V_{CEO}=60V (2SC504)
- Complementary to 2SA503 and 2SA504.



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

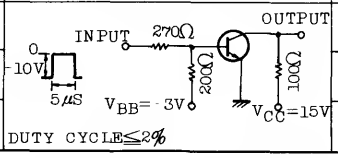
JEDEC	TO − 39
EIAJ	TC − 5, TB − 5B
TOSHIBA	2 − 8B1A

Weight : 1.13g

MAXIMUM RATINGS (Ta=25°C)

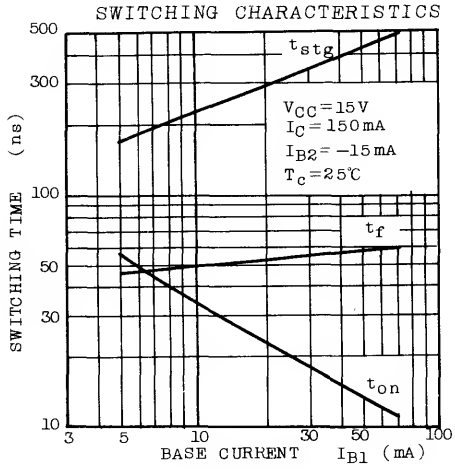
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	2SC503	V_{CBO}	100	V
	2SC504		80	
Collector-Emitter Voltage	2SC503	V_{CEO}	80	V
	2SC504		60	
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	600	mA
Base Current		I_B	100	mA
Collector Power Dissipation	Ta=25°C	P_C	800	mW
	Tc=25°C		6	W
Junction Temperature		T_j	175	°C
Storage Temperature Range		T_{stg}	-65∿175	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

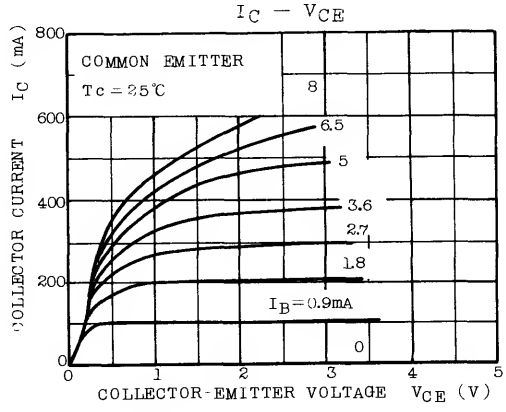
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	2SC503	I_{CBO}	V_{CB}=80V, I_E=0	-	-	0.5	μA
	2SC504		V_{CB}=60V, I_E=0				
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0	-	-	1.0	μA
DC Current Gain		h_{FE} (Note)	V_{CE}=2V, I_C=150mA	30	-	300	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	I_C=150mA, I_B=15mA	-	0.06	0.5	V
	Base-Emitter	$V_{BE(sat)}$	I_C=150mA, I_B=15mA	-	0.8	1.5	
Transition Frequency		f_T	V_{CE}=2V, I_C=150mA	50	80	-	MHz
Collector Output Capacitance		C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	13	30	pF
Base Intrinsic Resistance		$r_{bb'}$	V_{CE}=10V, I_E=-1mA, f=30MHz	-	16	25	Ω
Switching Time	Turn-on Time	t_{on}		-	40	-	ns
	Storage Time	t_{stg}		-	450	-	
	Fall Time	t_f		-	100	-	

Note: h_{FE} Classification O : 30∿90, Y : 50∿150, GR : 100∿300

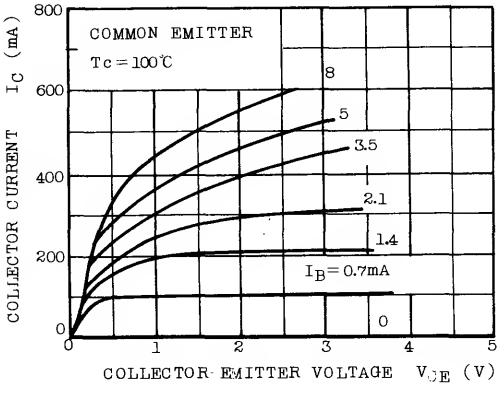
SWITCHING CHARACTERISTICS



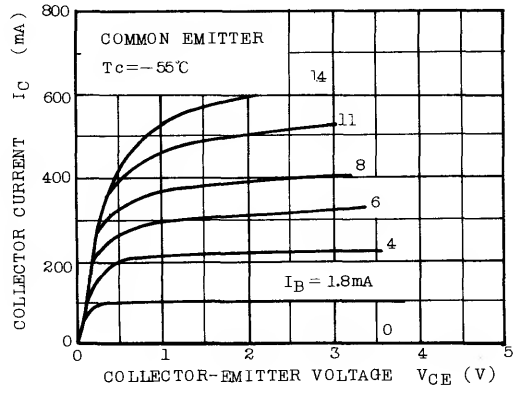
$I_C - V_{CE}$



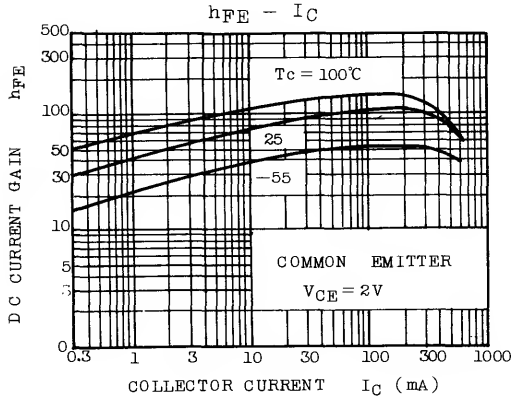
$I_C - V_{CE}$



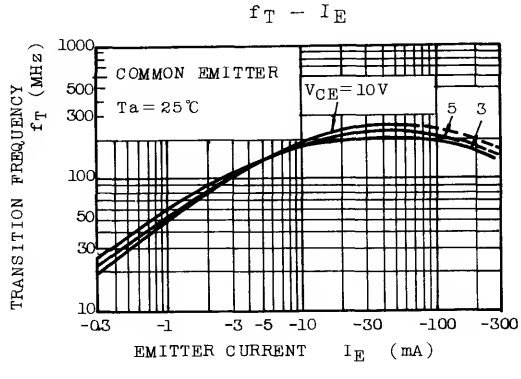
$I_C - V_{CE}$



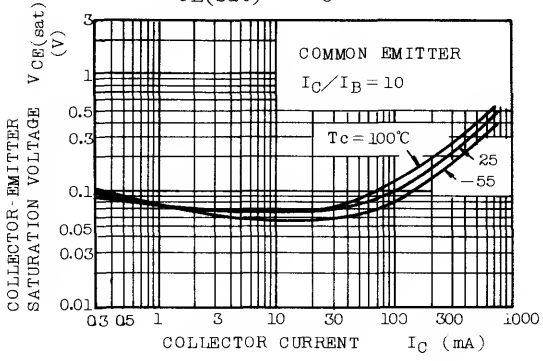
$h_{FE} - I_C$



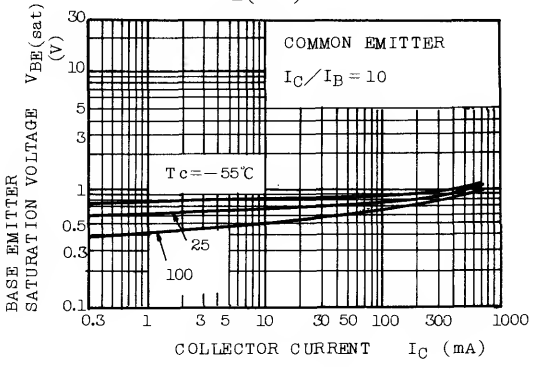
$f_T - I_E$



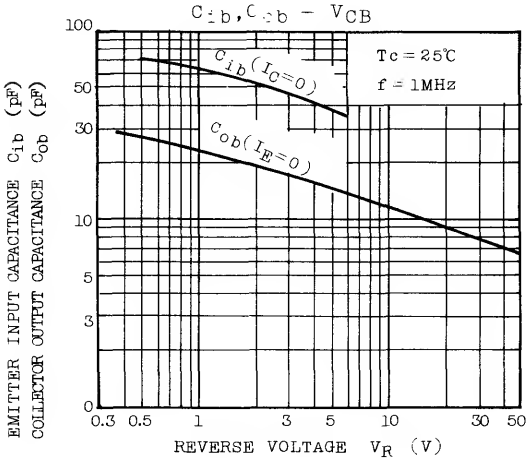
$V_{CE(sat)} - I_C$



$V_{BE(sat)} - I_C$



$C_{ib}, C_{ob} - V_{CB}$



$P_C - Ta$