

9097250 TOSHIBA (DISCRETE/OPTO)

56C 07227 D T-37-13

SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

2SA594

HIGH FREQUENCY AMPLIFIER APPLICATIONS

VIDEO AMPLIFIER APPLICATIONS.

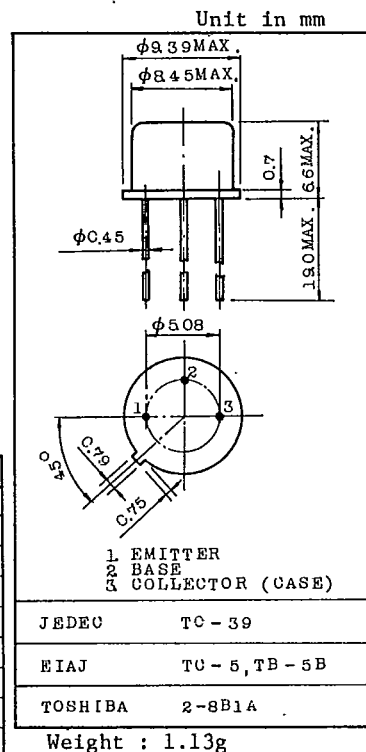
HIGH SPEED SWITCHING APPLICATIONS.

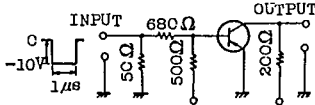
FEATURES:

- High Transition Frequency; $f_T = 200\text{MHz}$ (TYP.)
- Low Output Capacitance; $C_{ob} = 3.5\text{pF}$ (Typ.)
- Low Saturation Voltage; $V_{CE(sat)} = -0.3\text{V}$ (Max.)
at $I_C = -100\text{mA}$, $I_B = -10\text{mA}$
- Complementary to 2SC594

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	-60	V
Collector-Emitter Voltage		V_{CEO}	-45	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current		I_C	-200	mA
Base Current		I_B	-50	mA
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	P_C	750	mW
	$T_c = 25^\circ\text{C}$		5	W
Junction Temperature		T_j	175	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-65 ~ 175	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB}=-45V, I_E=0$	-	-	-0.1	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB}=-5V, I_C=0$	-	-	-0.1	μA
DC Current Gain		$h_{FE(1)}$ (Note.)	$V_{CE}=-1V, I_C=-10mA$	40	-	240	
		$h_{FE(2)}$	$V_{CE}=-3V, I_C=-200mA$	20	-	-	
Collector-Emitter Saturation voltage		$V_{CE(sat)}$	$I_C=-100mA, I_B=-10mA$	-	-	-0.3	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C=-100mA, I_B=-10mA$	-	-	-1.0	V
Transition Frequency		f_T	$V_{CE}=-10V, I_C=-10mA$	100	200	-	MHz
Input Resistance		h_{ie}	$V_{CE}=-10V, I_E=10mA, f=200MHz$	-	-	120	Ω
Collector Output Capacitance		C_{ob}	$V_{CB}=-10V, I_E=0, f=1MHz$	-	3.5	5	PF
Switching Time	Turn-On Time	t_{on}	 DUTY CYCLE $\leq 2\%$ $V_{BB}=3V$ $V_{CC}=-12V$	-	40	-	ns
	Storage Time	t_{stg}		-	250	-	
	Fall Time	t_f		-	30	-	

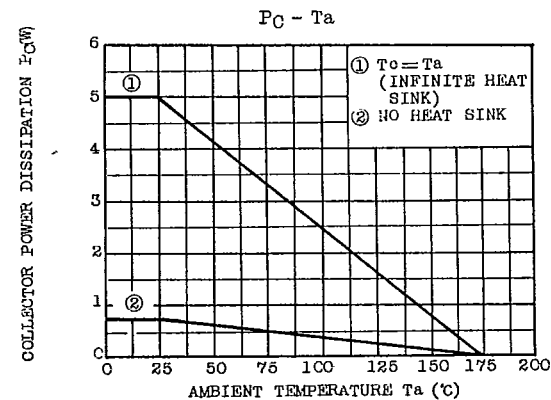
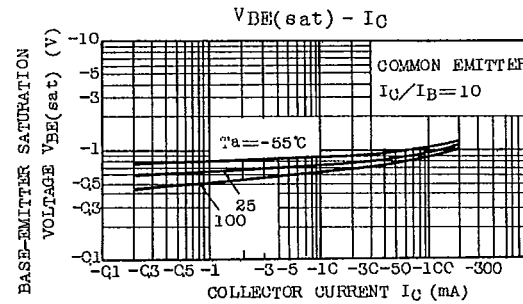
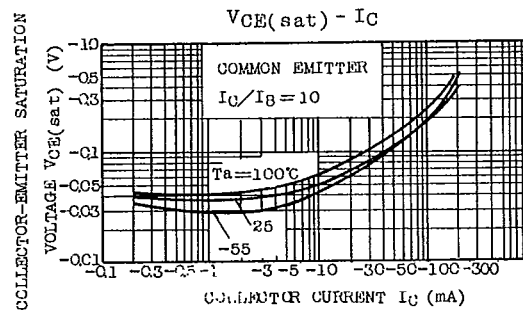
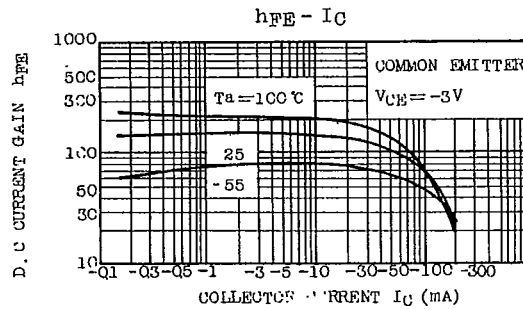
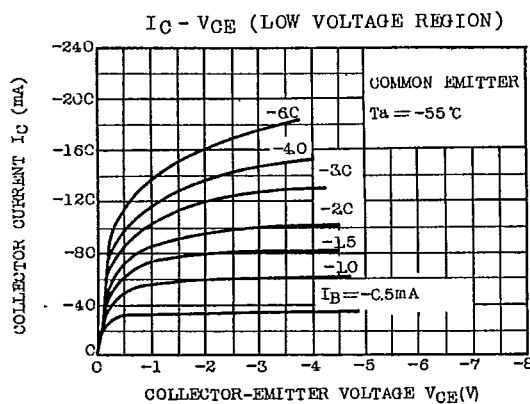
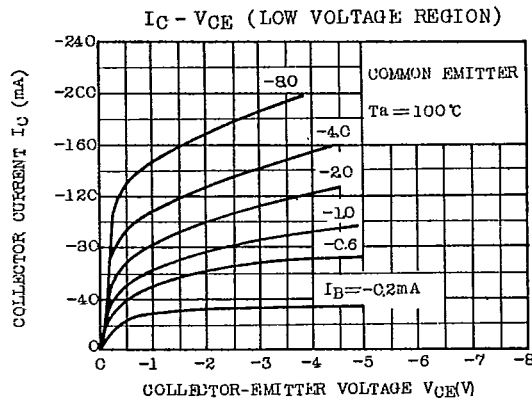
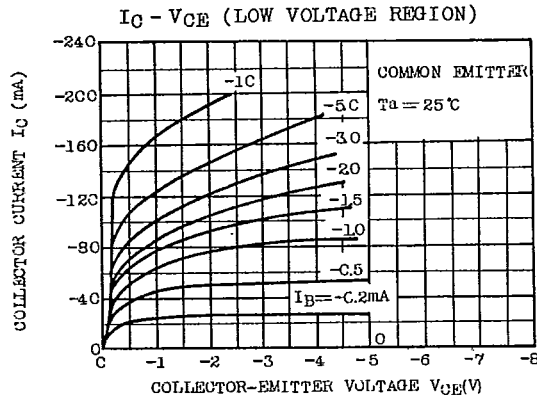
Note ; $h_{FE(1)}$ Classification R : 40 ~ 80, O : 70 ~ 140, Y : 120 ~ 240

TOSHIBA CORPORATION

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