2SC594

SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

HIGH FREQUENCY AMPLIFIER APPLICATIONS.

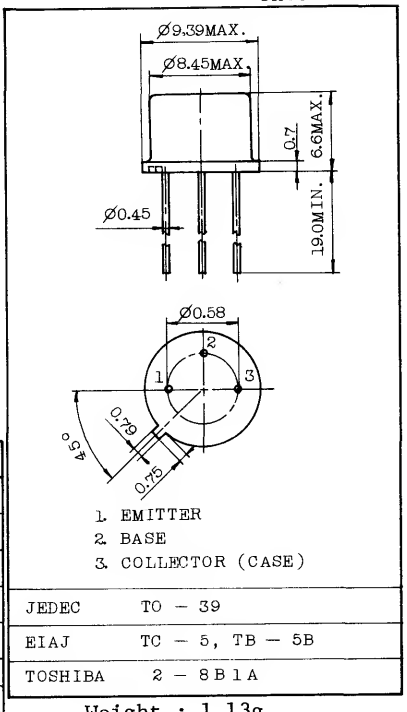
VIDEO AMPLIFIER APPLICATIONS.

HIGH SPEED SWITCHING APPLICATIONS.

FEATURES:

- High Transition Frequency : f_T=200MHz (Typ.)
- Low Output Capacitance : C_{ob}=3.5pF (Typ.)
- Low Saturation Voltage
  : $V_{CE(sat)}$=0.3V (Max.) at I_C=100mA, I_B=10mA
- Complementary to 2SA594.

Unit in mm



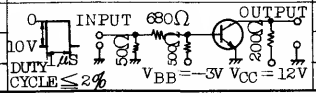
JEDEC	TO – 39
EIAJ	TC – 5, TB – 5B
TOSHIBA	2 – 8B1A

Weight : 1.13g

MAXIMUM RATINGS (Ta=25°C)

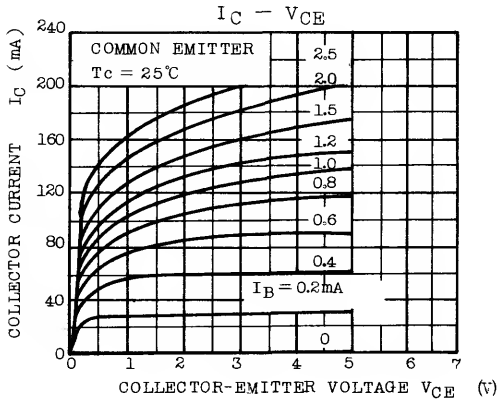
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	60	V
Collector-Emitter Voltage		V_{CEO}	45	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	200	mA
Base Current		I_B	50	mA
Collector Power Dissipation	Ta=25°C	P_C	750	mW
	Tc=25°C		5	W
Junction Temperature		T_j	175	°C
Storage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

ELECTRICAL CHARACTERISTICS (Ta=25°C)

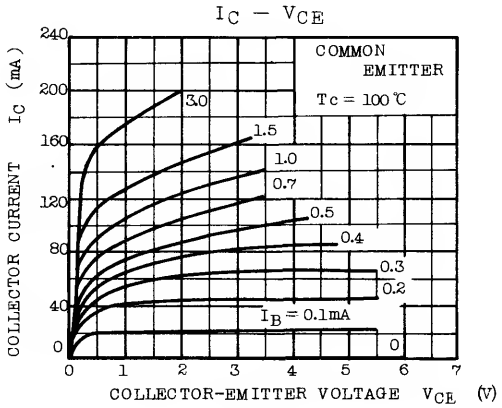
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=45V, I_E=0	–	–	0.1	μA
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0	–	–	0.1	μA
DC Current Gain		$h_{FE(1)}$ (Note)	V_{CE}=1V, I_C=10mA	40	–	240	
		$h_{FE(2)}$	V_{CE}=3V, I_C=200mA	20	–	–	
Collector-Emitter 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 Impedance (Real Part)		r_{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	5.0	pF
Switching Time	Turn-on Time	t_{on}		–	30	–	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,

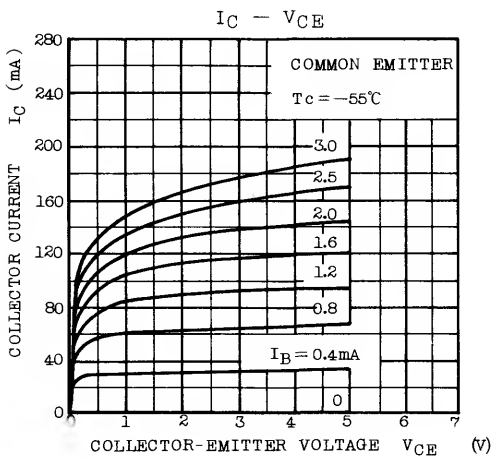
$I_C - V_{CE}$



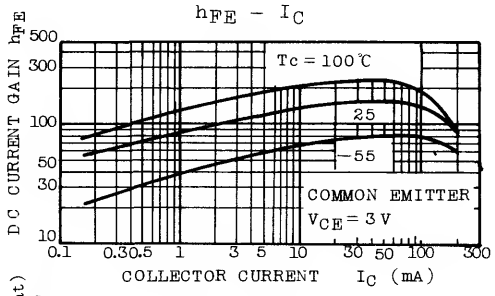
$I_C - V_{CE}$



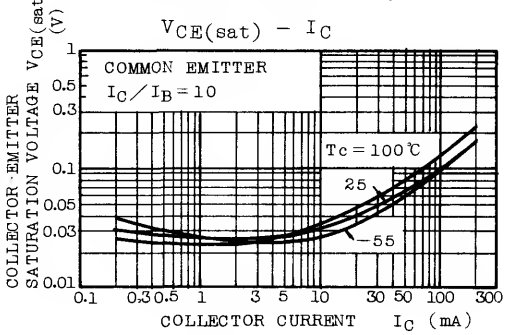
$I_C - V_{CE}$



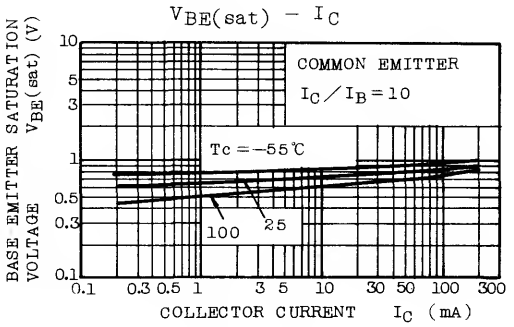
$h_{FE} - I_C$



$V_{CE(sat)} - I_C$



$V_{BE(sat)} - I_C$



$P_C - Ta$