

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC3803

HIGH FREQUENCY AMPLIFIER APPLICATIONS

VIDEO AMPLIFIER APPLICATIONS

HIGH SPEED SWITCHING APPLICATIONS

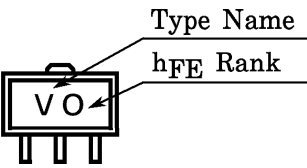
- High Transition Frequency : $f_T=200\text{MHz}$ (Typ.)
- Low Collector Output Capacitance : $C_{ob}=3.5\text{pF}$ (Typ.)
- Complementary to 2SA1483

MAXIMUM RATINGS (Ta = 25°C)

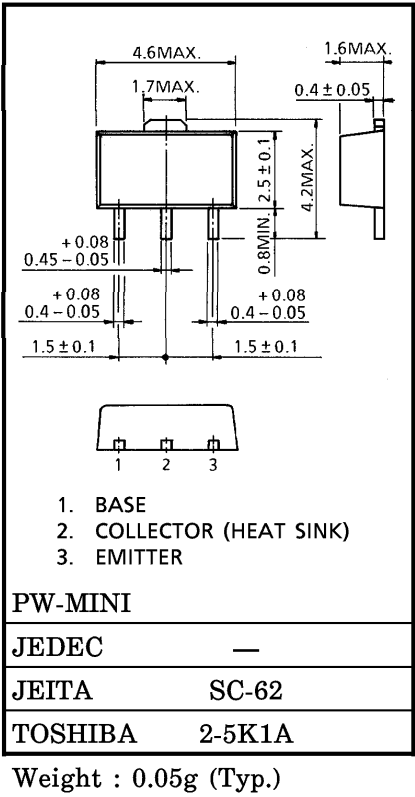
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	60	V
Collector-Emitter Voltage	V_{CE0}	45	V
Emitter-Base Voltage	V_{EB0}	5	V
Continuous Collector Current	I_C	200	mA
Continuous Base Current	I_B	50	mA
Collector Power Dissipation	P_C	500	mW
	P_C (Note)	1000	
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

(Note) : Mounted on ceramic substrate (250mm²×0.8t)

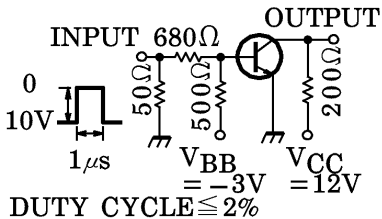
MARKING



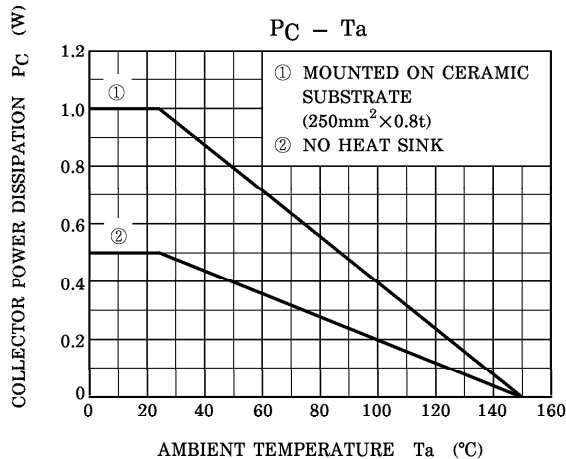
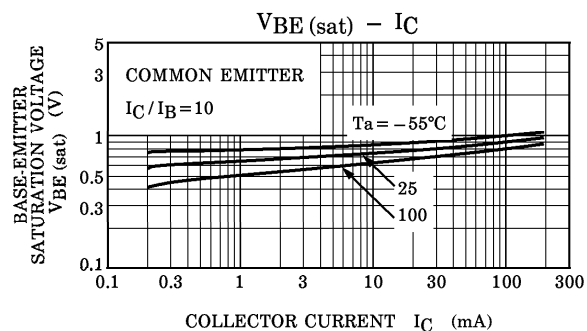
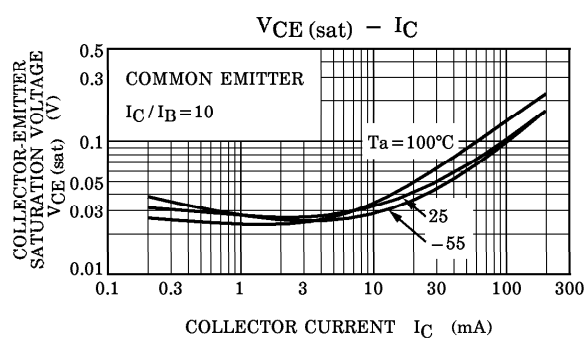
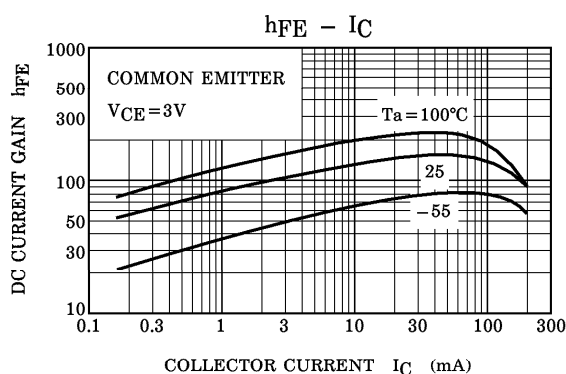
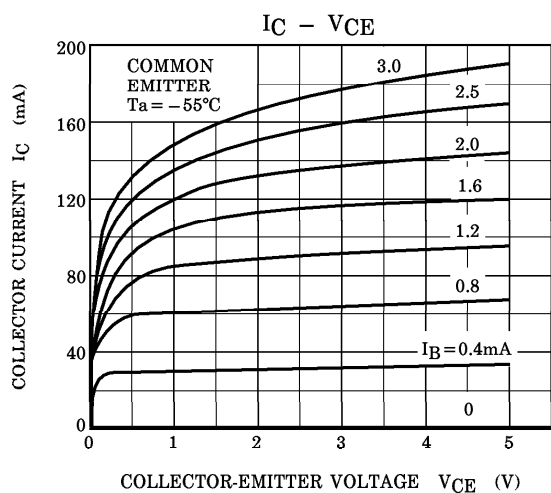
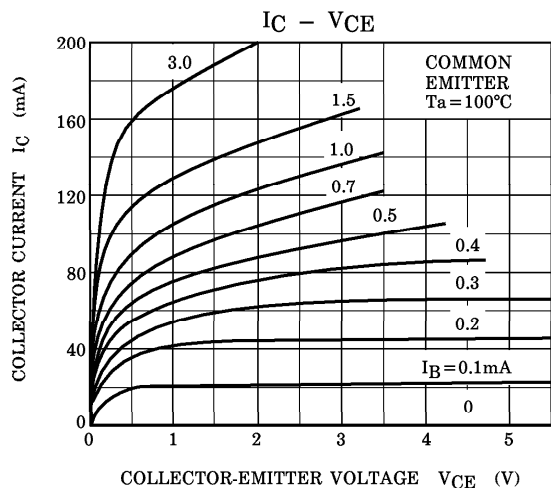
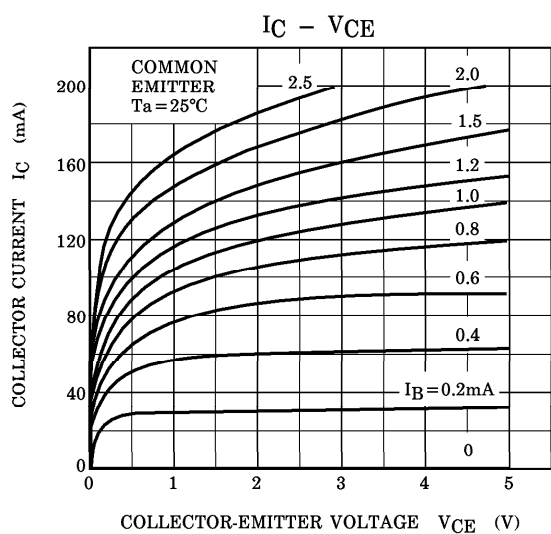
Unit in mm



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)		$Re(h_{ie})$	$V_{CE} = 10V, I_E = -10mA, f = 200MHz$	—	—	120	Ω
Collector Output Capacitance		C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	3.5	5.0	pF
Switching Time	Turn-on Time	t_{on}	 <p>INPUT 680Ω OUTPUT</p> <p>10V 1μs 50Ω 50Ω 200Ω</p> <p>$V_{BB} = -3V$ $V_{CC} = 12V$</p> <p>DUTY CYCLE $\leq 2\%$</p>	—	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



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