

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC3803

HIGH FREQUENCY AMPLIFIER APPLICATIONS

VIDEO AMPLIFIER APPLICATIONS

HIGH SPEED SWITCHING APPLICATIONS

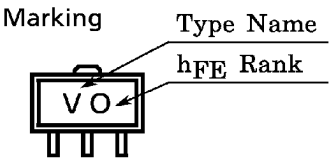
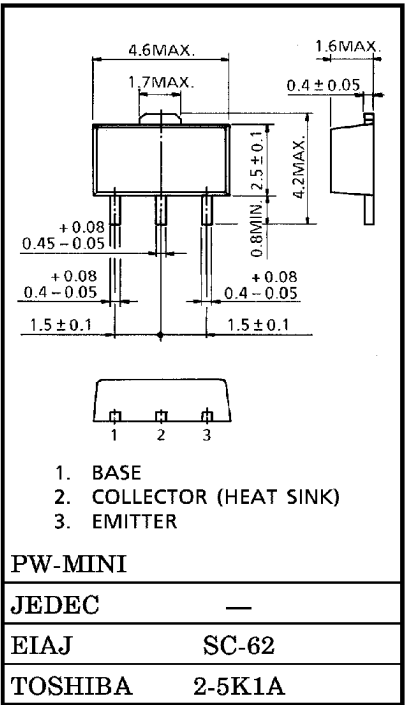
- High Transition Frequency : $f_T=200\text{MHz}$ (Typ.)
- Low Collector Output Capacitance : $C_{ob}=3.5\text{pF}$ (Typ.)
- Complementary to 2SA1483

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	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)

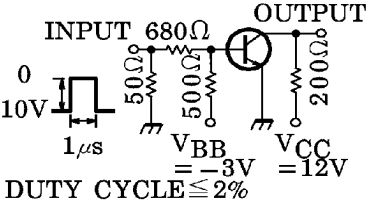
Unit in mm



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	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}	 INPUT 680Ω OUTPUT 0 10V 50Ω 50Ω 200Ω 1μs V_{BB} = -3V V_{CC} = 12V DUTY CYCLE ≤ 2%	—	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

