TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

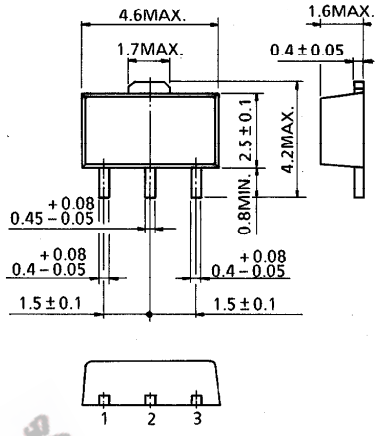
2SA1213

POWER AMPLIFIER APPLICATIONS

POWER SWITCHING APPLICATIONS

- Low Saturation Voltage : $V_{CE\ (sat)} = -0.5V$ (Max.) ($I_C = -1A$)
- High Speed Switching Time: $t_{stg} = 1.0\mu s$ (Typ.)
- $P_C = 1 \sim 2W$ (Mounted on Ceramic Substrate)
- Small Flat Package
- Complementary to 2SC2873

Unit in mm



1. BASE
2. COLLECTOR (HEAT SINK)
3. EMITTER

PW-MINI	
JEDEC	—
EIAJ	SC-62
TOSHIBA	2-5K1A

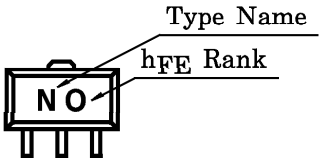
Weight : 0.05g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	−50	V
Collector-Emitter Voltage	V_{CEO}	−50	V
Emitter-Base Voltage	V_{EBO}	−5	V
Collector Current	I_C	−2	A
Base Current	I_B	−0.4	A
Collector Power Dissipation	P_C	500	mW
Collector Power Dissipation	P_C*	1000	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	−55~150	°C

* : Mounted on ceramic substrate ($250mm^2 \times 0.8t$)

Marking



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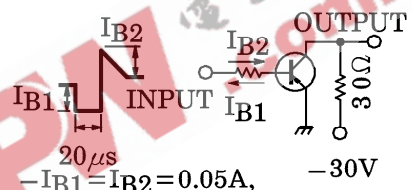
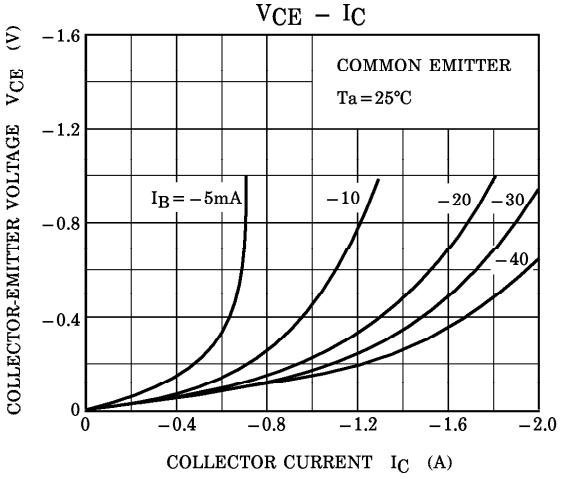
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

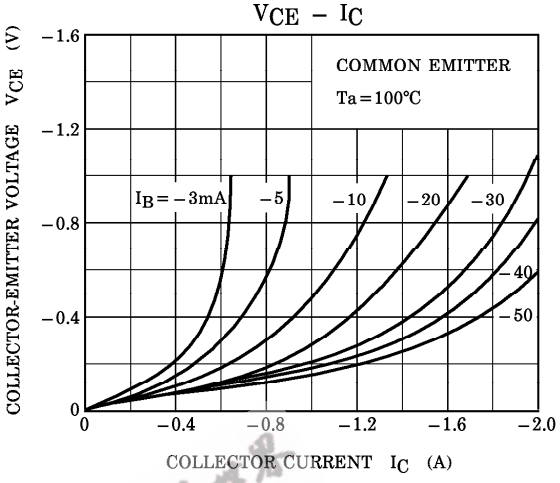
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB}=-50V$, $I_E=0$	—	—	−0.1	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB}=-5V$, $I_C=0$	—	—	−0.1	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C=-10mA$, $I_B=0$	−50	—	—	V
DC Current Gain		$h_{FE(1)}$ (Note)	$V_{CE}=-2V$, $I_C=-0.5A$	70	—	240	
		$h_{FE(2)}$	$V_{CE}=-2V$, $I_C=-2.0A$	20	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C=-1A$, $I_B=-0.05A$	—	—	−0.5	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C=-1A$, $I_B=-0.05A$	—	—	−1.2	V
Transition Frequency		f_T	$V_{CE}=-2V$, $I_C=-0.5A$	—	120	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB}=-10V$, $I_E=0$, $f=1MHz$	—	40	—	pF
Switching Time	Turn-on Time	t_{on}	 $-I_{B1}=I_{B2}=0.05A$, DUTY CYCLE≦1%	—	0.1	—	μs
	Storage Time	t_{stg}		—	1.0	—	
	Fall Time	t_f		—	0.1	—	

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

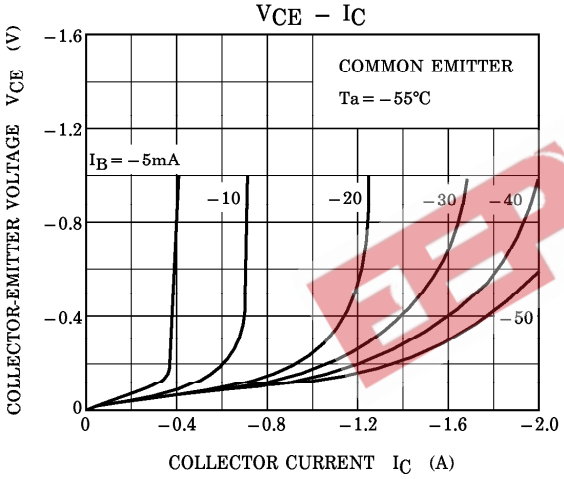
V_{CE} – I_C



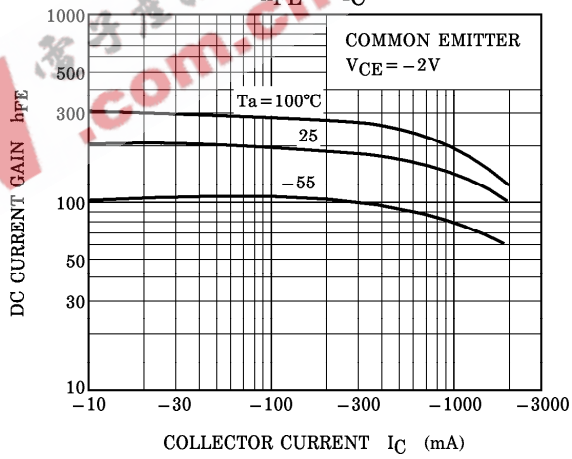
V_{CE} – I_C



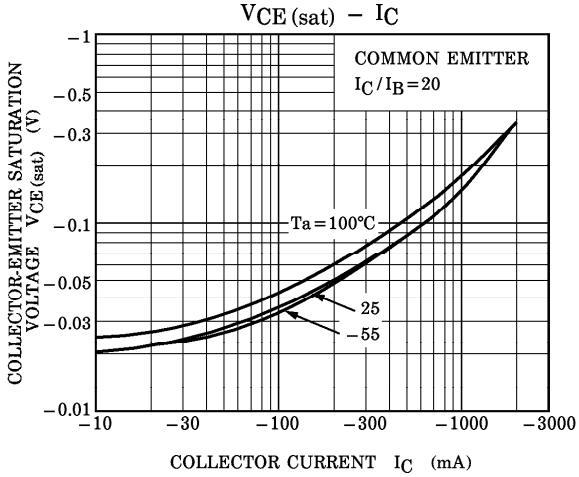
V_{CE} – I_C



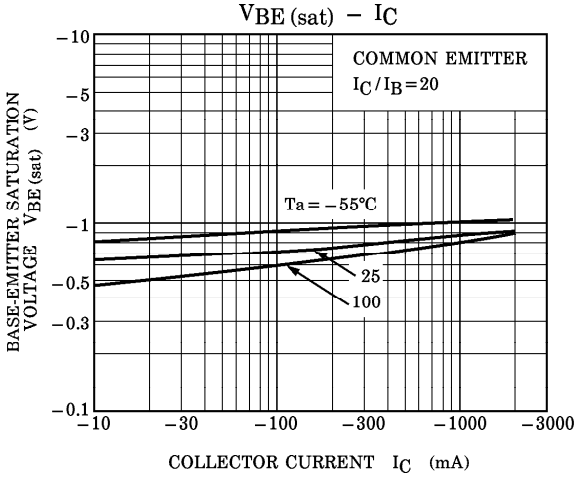
h_{FE} – I_C



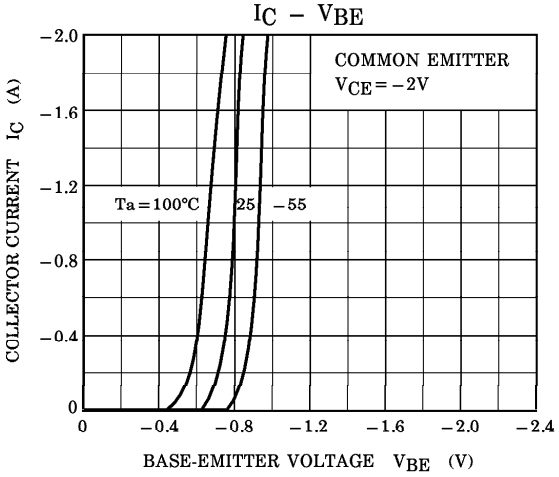
$V_{CE\,(sat)}$ – I_C



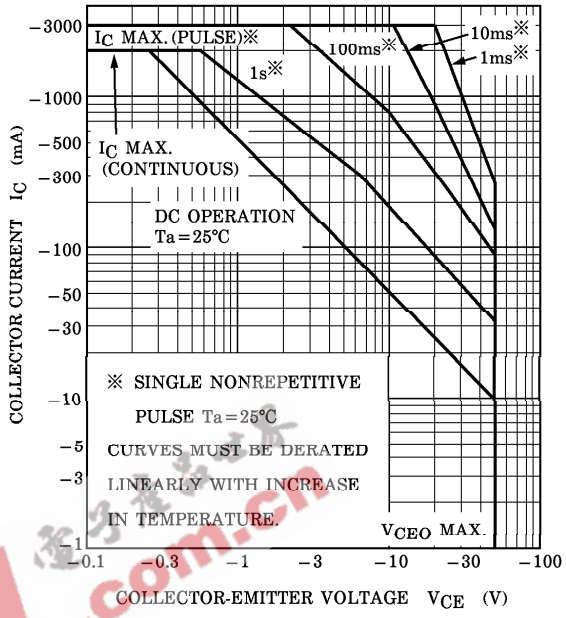
$V_{BE\,(sat)}$ – I_C



I_C – V_{BE}



SAFE OPERATING AREA



P_C – Ta