TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

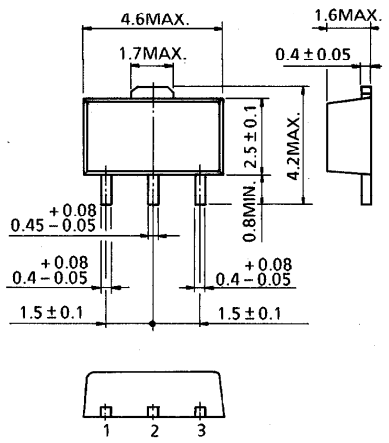
2SA1314

STROBE FLASH APPLICATIONS

AUDIO POWER APPLICATIONS

- High DC Current Gain and Excellent Linearity
  : $h_{FE\,(1)}$ = 140~600 (V_{CE} = −1V, I_C = −0.5A)
  : $h_{FE\,(2)}$ = 60 (Min.), 120 (Typ.), (V_{CE} = −1V, I_C = −4A)
- Low Saturation Voltage
  : $V_{CE\,(sat)}$ = −0.5V (Max.) (I_C = −2A, I_B = −50mA)
- Small Package

Unit in mm



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

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

Weight : 0.05g (Typ.)

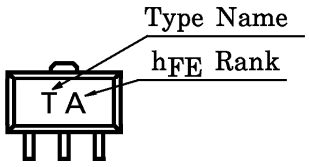
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	−20	V
Collector-Emitter Voltage		V_{CEO}	−10	V
Emitter-Base Voltage		V_{EBO}	−6	V
Collector Current	DC	I_C	−2	A
	Pulsed (Note 1)	I_{CP}	−4	A
Base Current		I_B	−2	A
Collector Power Dissipation	—	P_C	500	mW
	(Note 2)	P_C	1000	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

(Note 1) : Pulse Test : Pulse Width = 10ms (Max.),
Duty Cycle = 30% (Max.)

(Note 2) : Mounted on Ceramic Substrate (250mm² × 0.8mm^t)

Marking

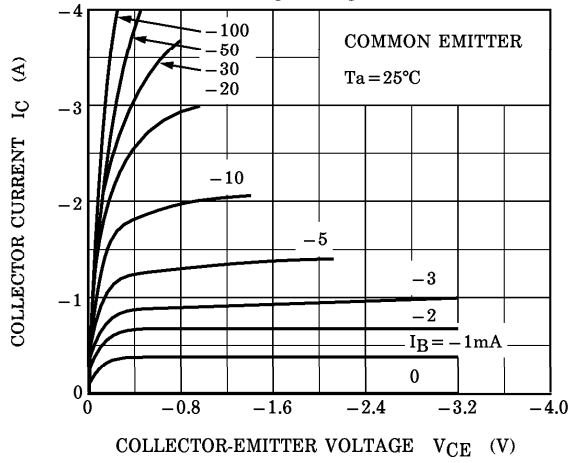


ELECTRICAL CHARACTERISTICS (Ta = 25°C)

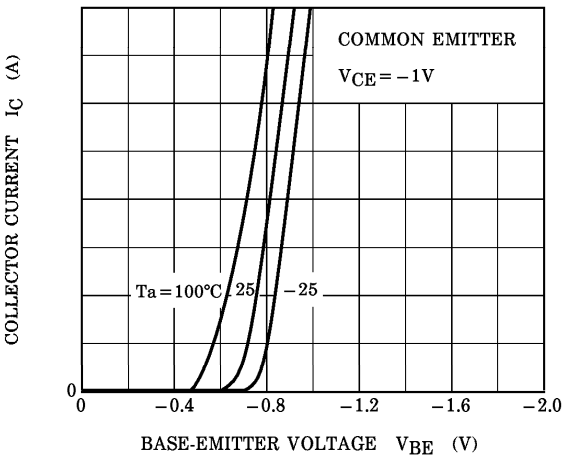
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = -20V$, $I_E = 0$	—	—	−0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -6V$, $I_C = 0$	—	—	−0.1	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)\,CEO}$	$I_C = -10mA$, $I_B = 0$	−10	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)\,EBO}$	$I_E = -1mA$, $I_C = 0$	−6	—	—	V
DC Current Gain (Note 3)	$h_{FE\,(1)}$	$V_{CE} = -1V$, $I_C = -0.5A$	140	—	600	
	$h_{FE\,(2)}$	$V_{CE} = -1V$, $I_C = -4A$	60	120	—	
Collector-Emitter Saturation Voltage	$V_{CE\,(sat)}$	$I_C = -2A$, $I_B = -50mA$	—	−0.2	−0.5	V
Base-Emitter Voltage	V_{BE}	$V_{CE} = -1V$, $I_C = -2A$	—	−0.83	−1.5	V
Transition Frequency	f_T	$V_{CE} = -1V$, $I_C = -0.5A$	—	140	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = -10V$, $I_E = 0$, f = 1MHz	—	50	—	pF

(Note 3) : $h_{FE\,(1)}$ Classification A : 140~280, B : 200~400, C : 300~600

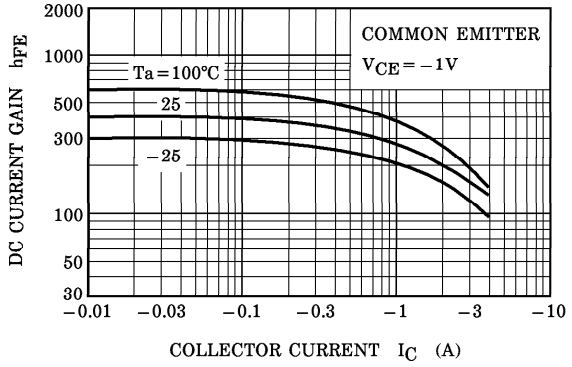
$I_C - V_{CE}$



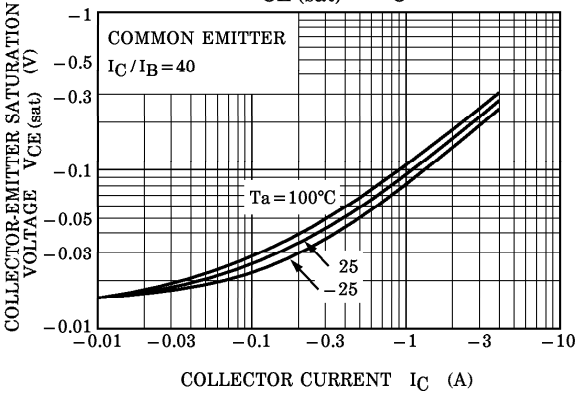
$I_C - V_{BE}$



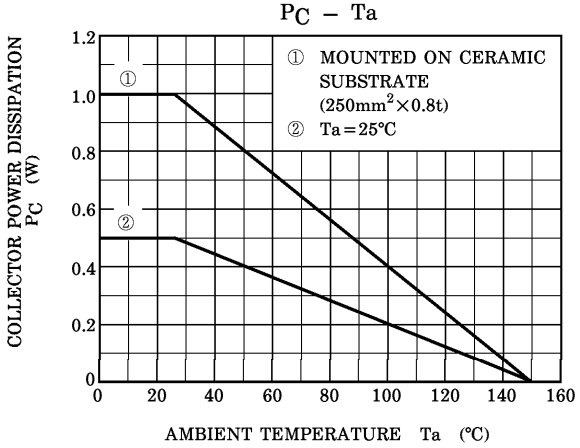
$h_{FE} - I_C$



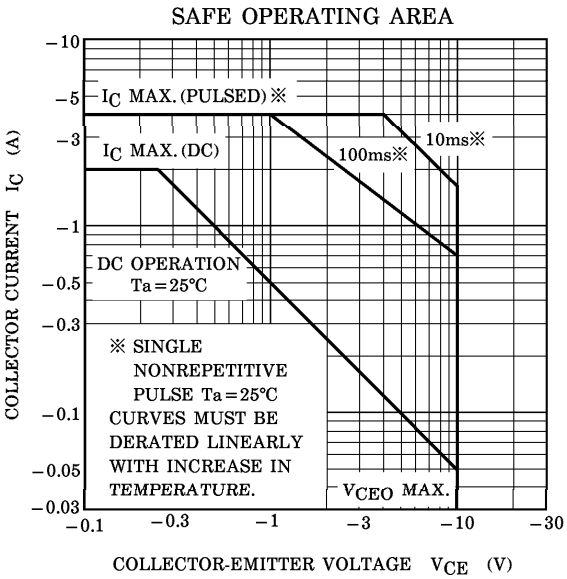
$V_{CE\,(sat)} - I_C$



$P_C - Ta$



SAFE OPERATING AREA



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