

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

2SA1160

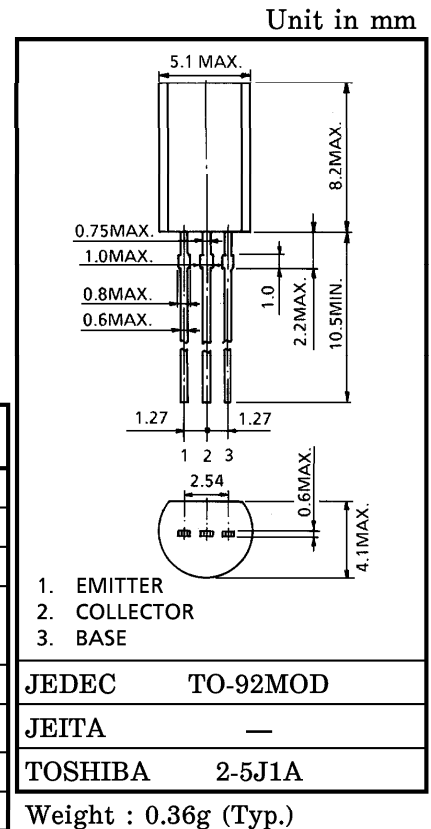
STROBE FLASH APPLICATIONS

MEDIUM POWER AMPLIFIER APPLICATIONS

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

MAXIMUM RATINGS ($T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	-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	
Base Current	I_B	-2	A
Collector Power Dissipation	P_C	900	mW
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55~150	$^\circ C$

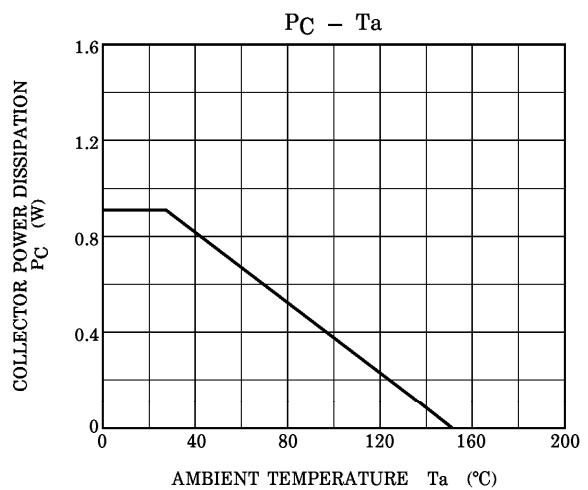
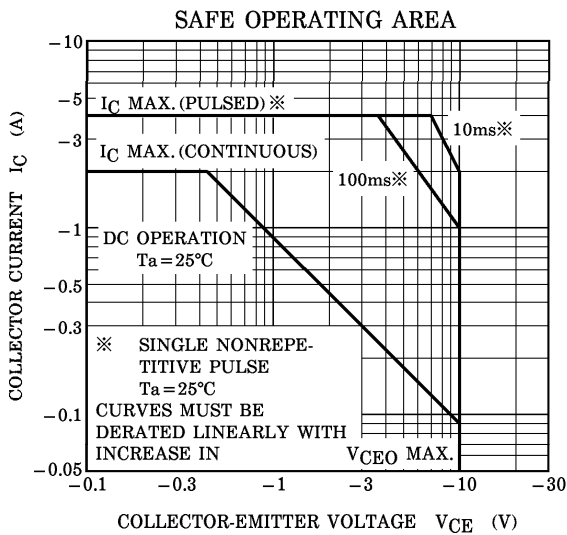
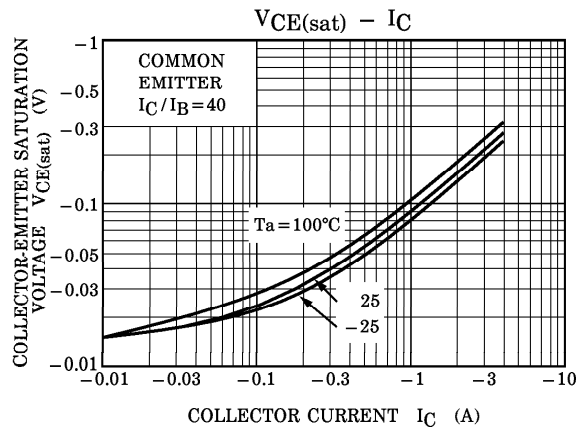
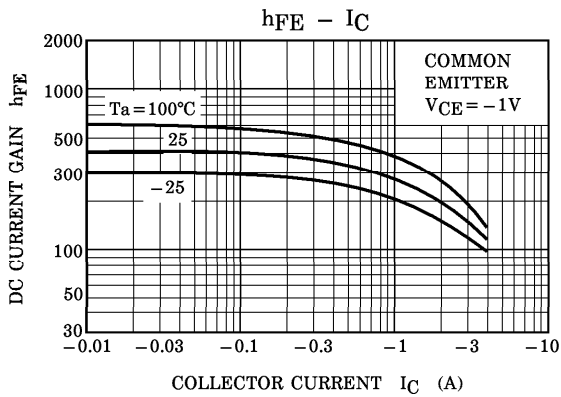
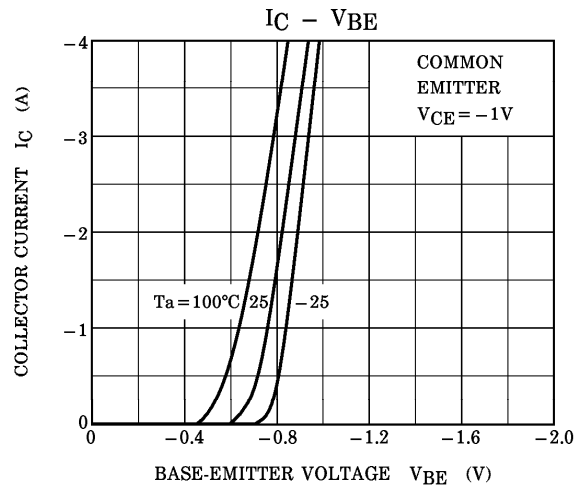
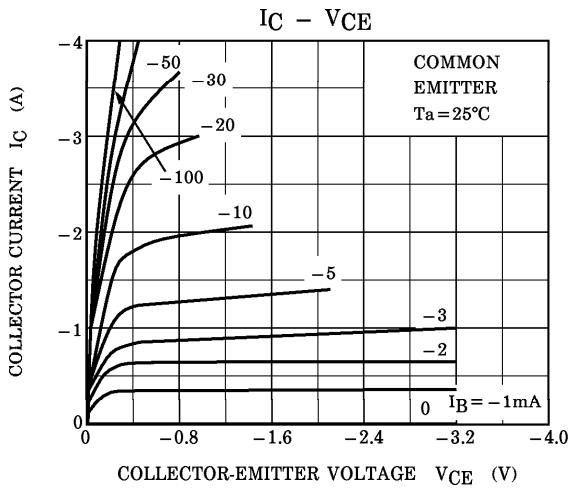


(Note 1) : Pulse Width = 10ms (Max.), Duty Cycle = 30% (Max.)

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CB0}	$V_{CB} = -20V, I_E = 0$	—	—	-100	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -6V, I_C = 0$	—	—	-100	nA
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	$h_{FE(1)}$ (Note 2)	$V_{CE} = -1V, I_C = -0.5A$	140	—	600	
	$h_{FE(2)}$	$V_{CE} = -1V, I_C = -4A$	60	120	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -2A, I_B = -50mA$	—	-0.20	-0.50	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 2) : $h_{FE(1)}$ Classification A : 140~280, B : 200~400, C : 300~600



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