

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

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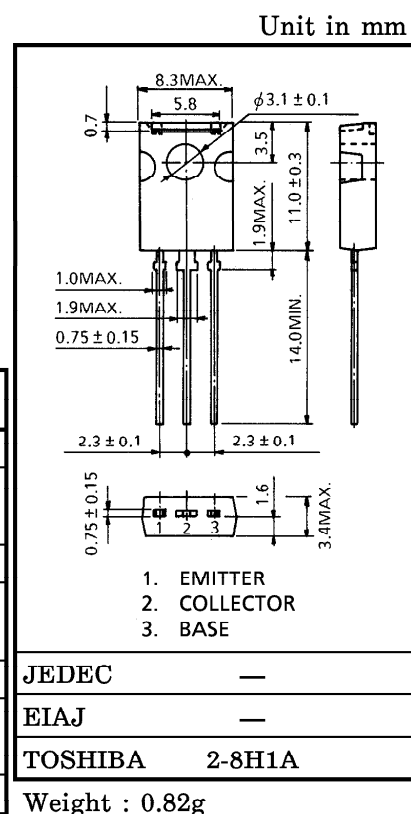
STOROBO FLASH APPLICATIONS.

MEDIUM POWER AMPLIFIER APPLICATIONS.

- High DC Current Gain : $h_{FE}=140\sim600$ ($V_{CE}=2V$, $I_C=0.5A$)
 $h_{FE}=70$ (Min.) ($V_{CE}=2V$, $I_C=4A$)
- Low Saturation Voltage
: $V_{CE(sat)}=1.0V$ (Max.) ($I_C=4A$, $I_B=0.1A$)
- High Collector Power Dissipation
: $P_C=10W$ ($T_c=25^\circ C$), $P_C=1.5W$ ($T_a=25^\circ C$)

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	50	V
Collector-Emitter Voltage		V_{CES}	40	V
		V_{CEO}	20	
Emitter-Base Voltage		V_{EBO}	8	V
Collector Current	DC	I_C	5	A
	Pulse (Note 1)	I_{CP}	8	
Base Current		I_B	1	A
Collector Power Dissipation	$T_a=25^\circ C$	P_C	1.5	W
	$T_c=25^\circ C$		10	
Junction Temperature		T_j	150	$^\circ C$
Storage Temperature Range		T_{stg}	$-55\sim150$	$^\circ C$



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

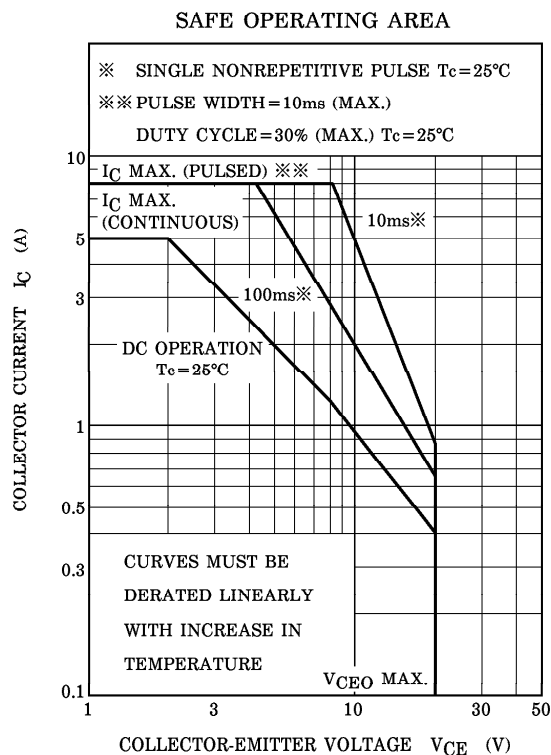
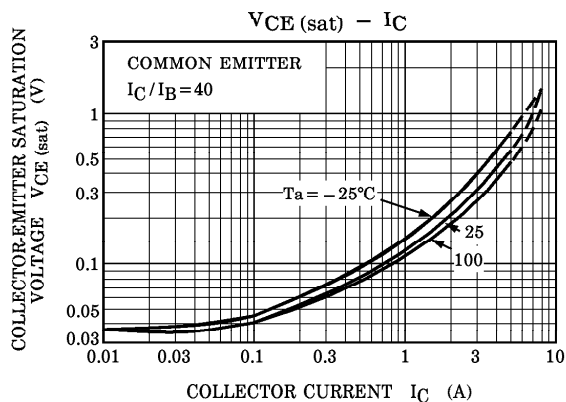
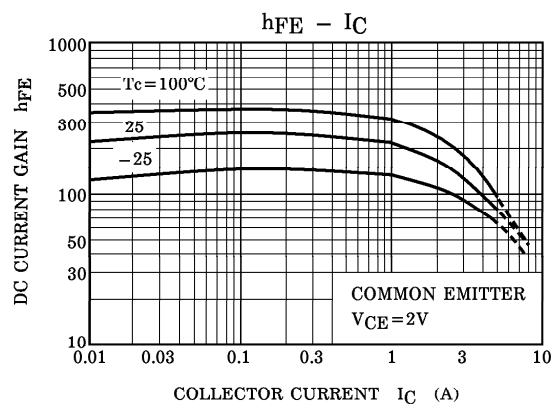
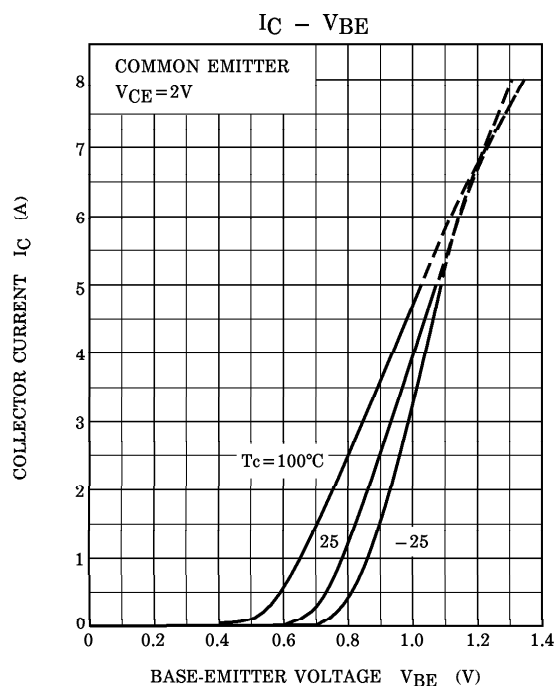
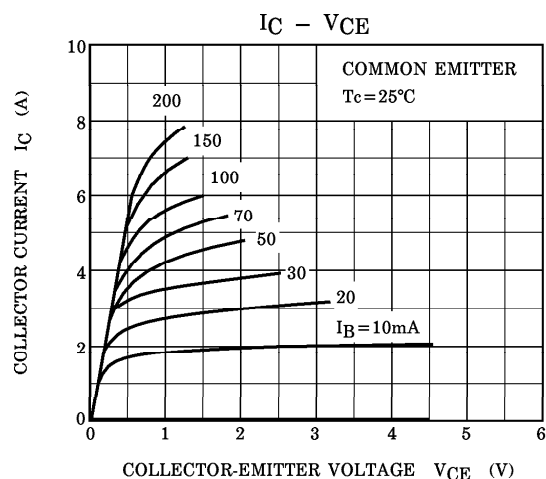
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB}=40V$, $I_E=0$	—	—	100	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=8V$, $I_C=0$	—	—	100	nA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA$, $I_B=0$	20	—	—	V
DC Current Gain	$h_{FE(1)}$ (Note 2)	$V_{CE}=2V$, $I_C=0.5A$	140	—	600	
	$h_{FE(2)}$	$V_{CE}=2V$, $I_C=4A$	70	—	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=4A$, $I_B=0.1A$	—	—	1.0	V
Base-Emitter Voltage	V_{BE}	$V_{CE}=2V$, $I_C=4A$	—	—	1.5	V
Transition Frequency	f_T	$V_{CE}=2V$, $I_C=0.5A$	—	100	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$, $I_E=0$, $f=1MHz$	—	40	—	pF

Note 2 : $h_{FE(1)}$ Classification Y : 140~240, GR : 200~400, BL : 300~600

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