TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

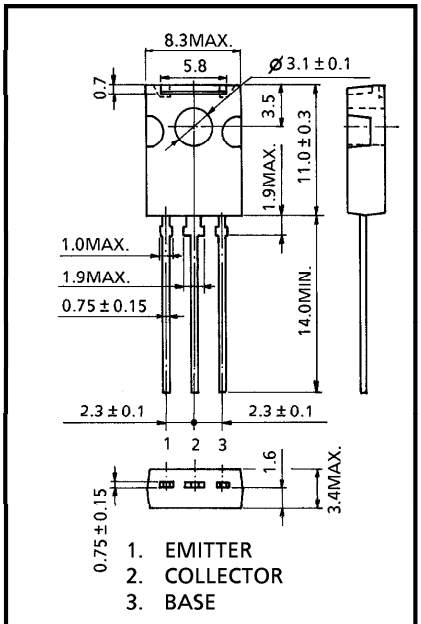
2SC4685

STROBE FLASH APPLICATIONS

MEDIUM POWER AMPLIFIER APPLICATIONS

- High DC Current Gain
  : $h_{FE\,(1)}$ = 800~3200 (V_{CE} = 2V, I_C = 0.5A)
  : $h_{FE\,(2)}$ = 250 (Min.) (V_{CE} = 2V, I_C = 4A)
- Low Saturation Voltage
  : $V_{CE\,(sat)}$ = 0.5V (Max.) (I_C = 4A, I_B = 40mA)
- High Collector Power Dissipation
  : P_C = 10W (Tc = 25°C), P_C = 1.5W (Ta = 25°C)

Unit in mm



JEDEC	—
JEITA	—
TOSHIBA	2-8H1A

Weight : 0.82g (Typ.)

MAXIMUM RATINGS (Tc = 25°C)

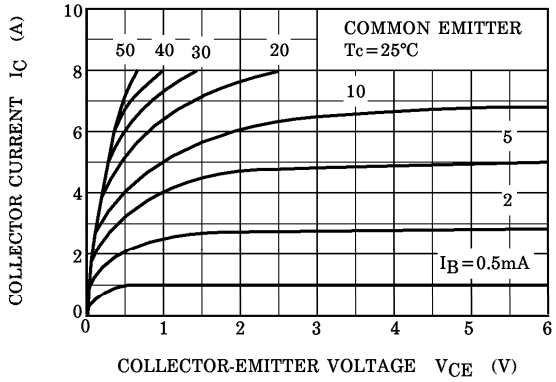
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	50	V
Collector-Emitter Voltage		V_{CES}	40	V
		V_{CEO}	20	
Emitter-Base Voltage		V_{EBO}	8	V
Collector Current	DC	I_C	5	A
	Pulse (Note 1)	I_{CP}	8	
Base Current		I_B	0.5	A
Collector Power Dissipation	Ta = 25°C	P_C	1.5	W
	Tc = 25°C		10	
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.)

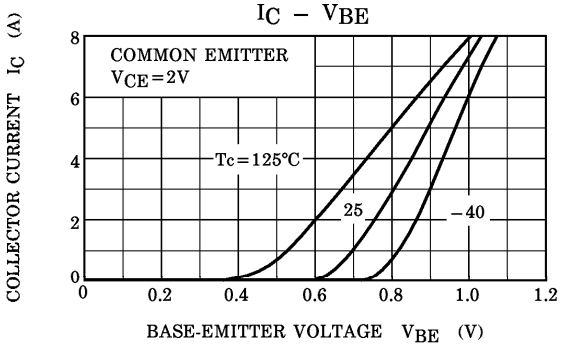
ELECTRICAL CHARACTERISTICS (Tc = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB} = 50V, 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	$h_{FE\,(1)}$	V_{CE} = 2V, I_C = 0.5A	800	—	3200	
	$h_{FE\,(2)}$	V_{CE} = 2V, I_C = 4A	250	—	—	
Collector-Emitter Saturation Voltage	$V_{CE\,(sat)}$	I_C = 4A, I_B = 40mA	—	—	0.5	V
Base-Emitter Voltage	V_{BE}	V_{CE} = 2V, I_C = 4A	—	—	1.2	V
Transition Frequency	f_T	V_{CE} = 2V, I_C = 0.5A	—	150	—	MHz
Collector Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	—	45	—	pF

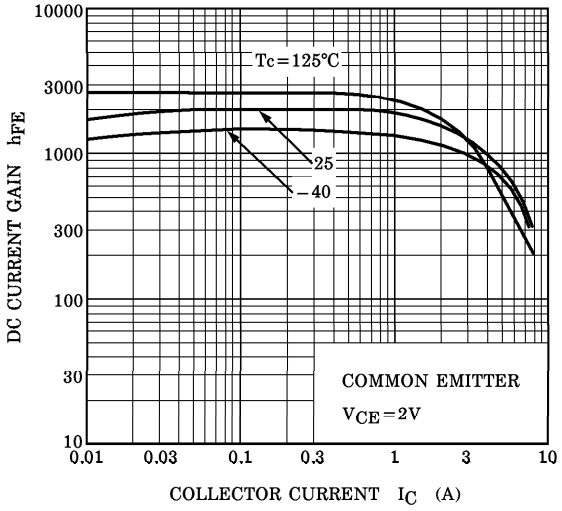
I_C – V_{CE}



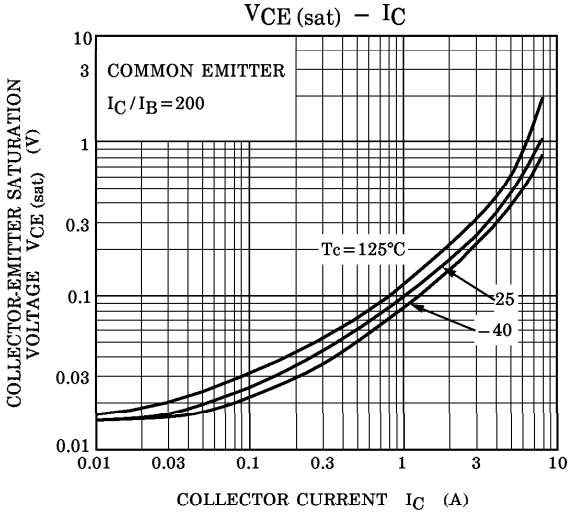
I_C – V_{BE}



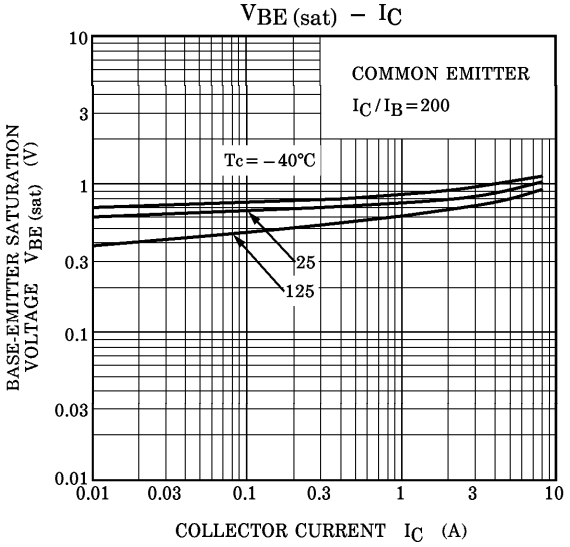
h_{FE} – I_C



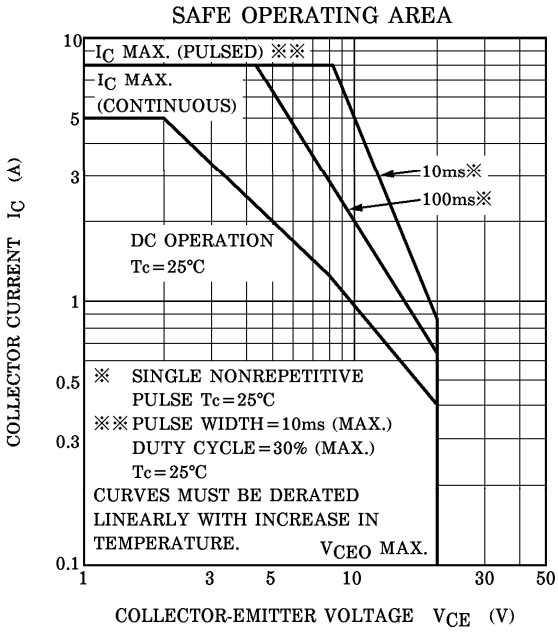
$V_{CE\,(sat)}$ – I_C



$V_{BE\,(sat)}$ – I_C



SAFE OPERATING AREA



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