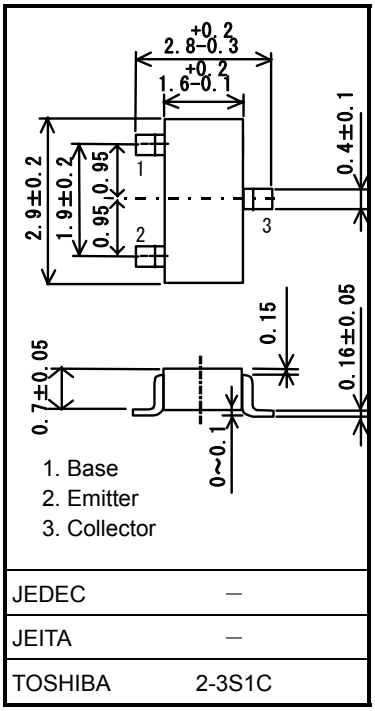
TOSHIBA Transistor Silicon NPN Epitaxial Type

2SC6062

High-Speed Switching Applications
DC-DC Converter Applications
Strobe Applications

High-DC current gain: h_{FE} = 250 to 400 (I_C = 0.5
A)Low-collector-emitter saturation: $V_{CE\ (sat)}$ = 0.12 V (max)
High-speed switching: t_f = 25 ns (typ.)

Unit: mm



JEDEC	―
JEITA	―
TOSHIBA	2-3S1C

Weight: 0.01 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristic		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	50	V
Collector-emitter voltage		V_{CEX}	50	V
Collector-emitter voltage		V_{CEO}	30	V
Emitter-base voltage		V_{EBO}	7	V
Collector current	DC	I_C	5	A
	Pulse	I_{CP}	10	A
Base current		I_B	0.5	A
Collector power dissipation (Note 1)	t = 10s	P_C	1.25	W
	DC		0.8	W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	−55 to 150	°C

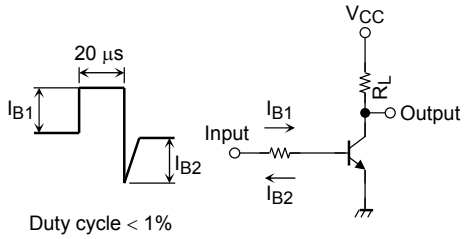
Note 1: Mounted on FR4 board (glass epoxy, 1.6mm thick, Cu area: 645 mm^2)

Note 2: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

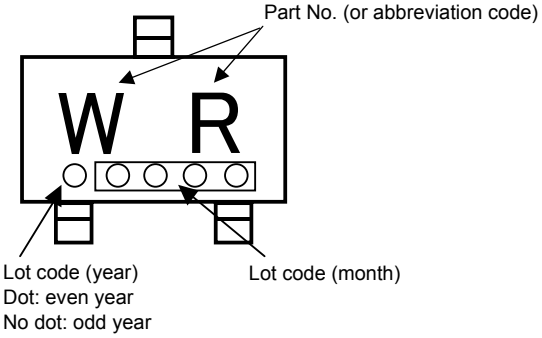
Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Conditions	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	V_{CB} = 50 V, I_E = 0	—	—	0.1	μA
Emitter cut-off current		I_{EBO}	V_{EB} = 7 V, I_C = 0	—	—	0.1	μA
Collector-emitter breakdown voltage		$V_{(BR)\ CEO}$	I_C = 10 mA, I_B = 0	30	—	—	V
DC current gain		$h_{FE\ (1)}$	V_{CE} = 2 V, I_C = 0.5 A	250	—	400	
		$h_{FE\ (2)}$	V_{CE} = 2 V, I_C = 1.6 A	120	—	—	
Collector emitter saturation voltage		$V_{CE\ (sat)}$	I_C = 1.6 A, I_B = 53 mA	—	—	0.12	V
Base-emitter saturation voltage		$V_{BE\ (sat)}$	I_C = 1.6 A, I_B = 53 mA	—	—	1.1	V
Collector output capacitance		C_{ob}	V_{CB} = 10 V, I_E = 0, f =1MHz	—	35	—	pF
Switching time	Rise time	t_r	See Figure 1 circuit diagram	—	55	—	ns
	Storage time	t_{stg}	$V_{CC} \fallingdotseq$ 12 V, R_L = 7.5 Ω	—	310	—	
	Fall time	t_f	$I_{B1} = -I_{B2}$ = 53 mA	—	25	—	

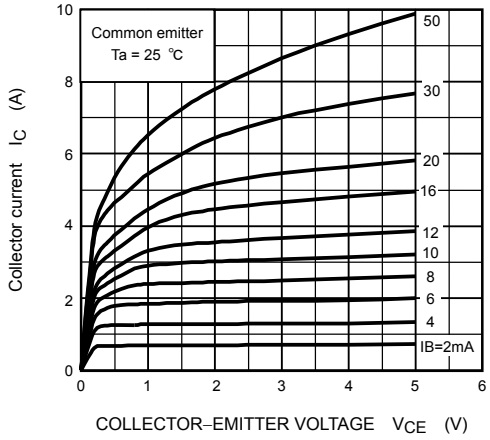
Figure 1 Switching Time Test Circuit & Timing Chart



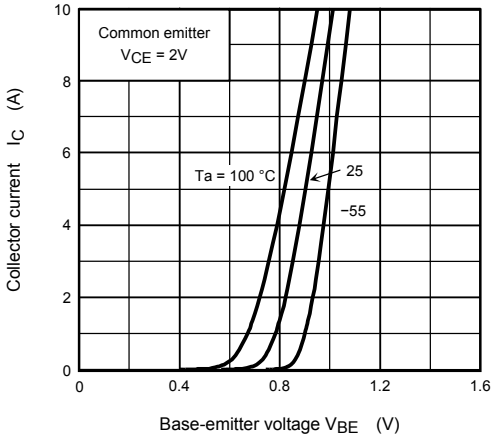
Marking



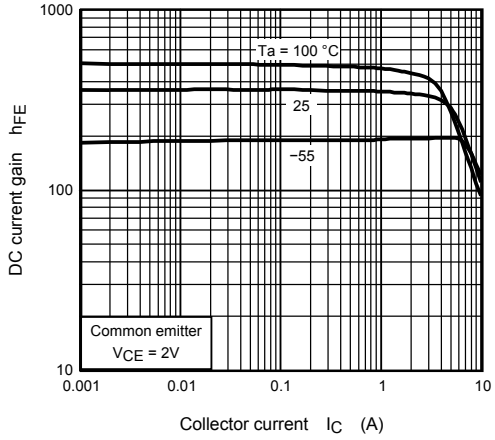
$I_C - V_{CE}$



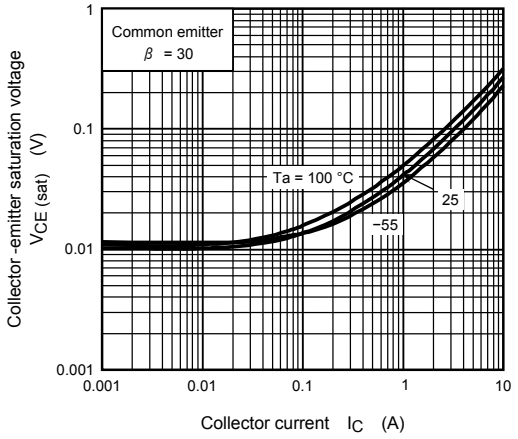
$I_C - V_{BE}$



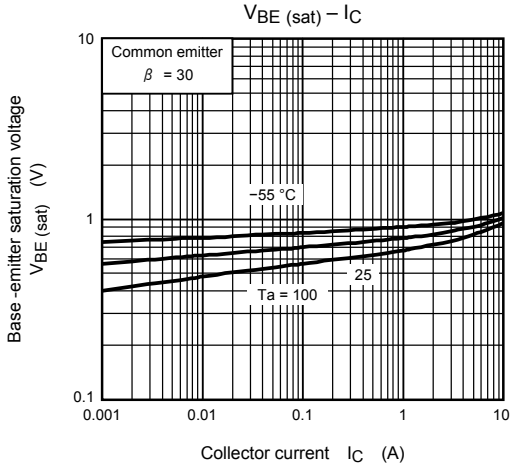
$h_{FE} - I_C$

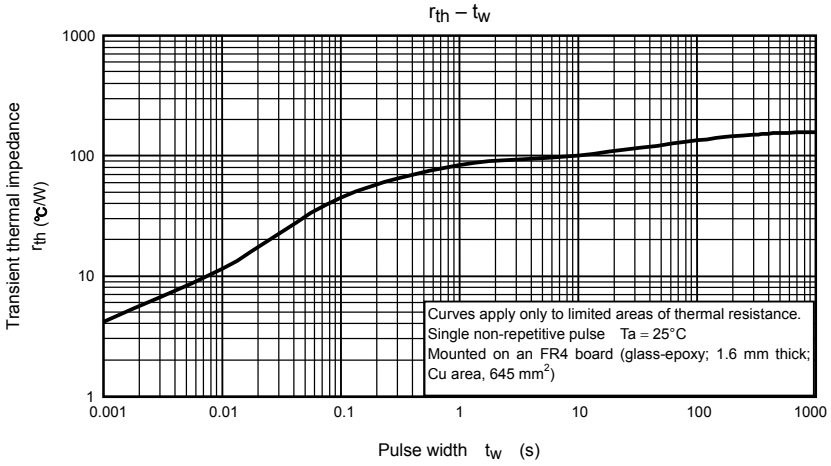


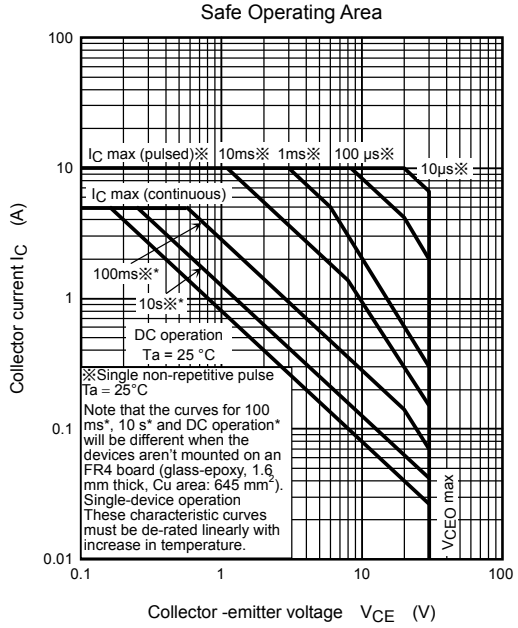
$V_{CE\ (sat)} - I_C$



$V_{BE\ (sat)} - I_C$







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