

TOSHIBA Transistor Silicon NPN Epitaxial Type

2SC6033

High-Speed Swtching Applications

DC-DC Converter Applications

Storobe Flash Applications

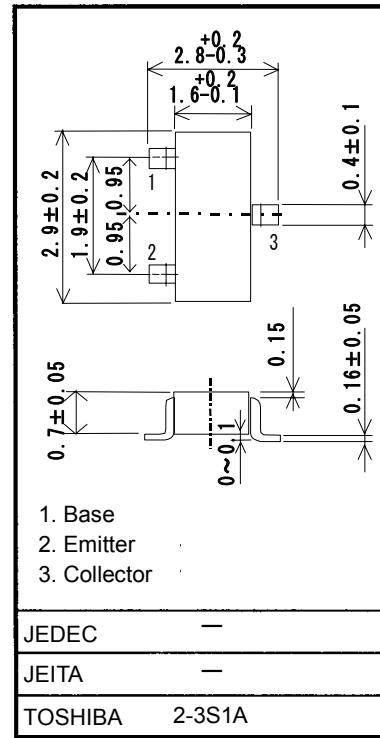
- High DC current gain: $h_{FE} = 250$ to 400 ($I_C = 0.3$ A)
- Low collector-emitter saturation: $V_{CE(sat)} = 0.18$ V (max)
- High-speed switching: $t_f = 38$ ns (typ.)

Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	100	V
Collector-emitter voltage		V_{CEX}	80	V
		V_{CEO}	50	V
Emitter-base voltage		V_{EBO}	6	V
Collector current	DC	I_C	2.5	A
	Pulse	I_{CP}	5	
Base current		I_B	0.3	A
Collector power dissipation	t = 10s	P_c (Note 1)	1.00	W
	DC		0.625	
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-55 to 150	°C

Note 1: Mounted on an FR4 board (glass epoxy, 1.6mm thick, Cu area: 64.5 mm²)

Unit : mm



Weight: 0.01g (Typ.)

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 100\text{ V}, I_E = 0$	—	—	0.1	$\mu\text{ A}$
Emitter cut-off current	I_{EBO}	$V_{EB} = 6\text{ V}, I_C = 0$	—	—	0.1	$\mu\text{ A}$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 10\text{ mA}, I_B = 0$	50	—	—	V
DC current gain	$h_{FE}(1)$	$V_{CE} = 2\text{ V}, I_C = 0.3\text{ A}$	250	—	400	
	$h_{FE}(2)$	$V_{CE} = 2\text{ V}, I_C = 1.0\text{ A}$	120	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1.0\text{ A}, I_B = 33\text{ mA}$	—	—	0.18	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1.0\text{ A}, I_B = 33\text{ mA}$	—	—	1.10	V
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	18	—	pF
Switching time	Rise time	t_r	—	25	—	ns
	Storage time	t_{stg}	—	470	—	
	Fall time	t_f	—	38	—	

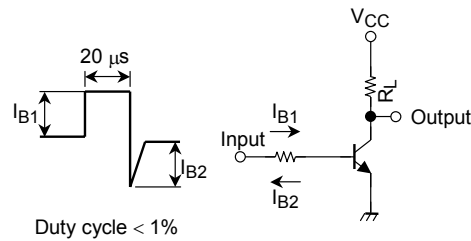
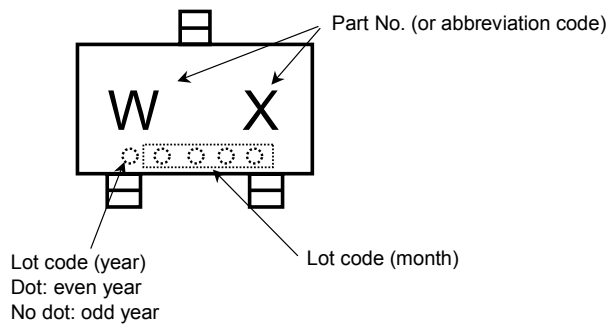
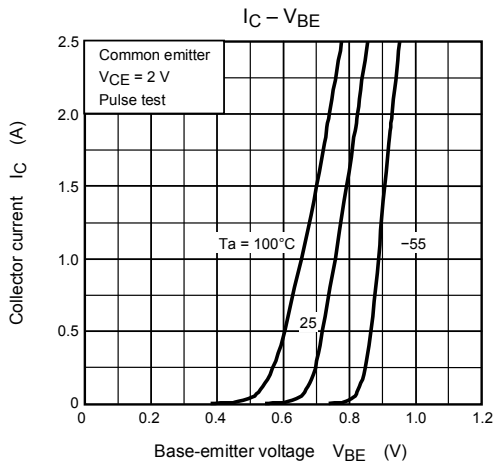
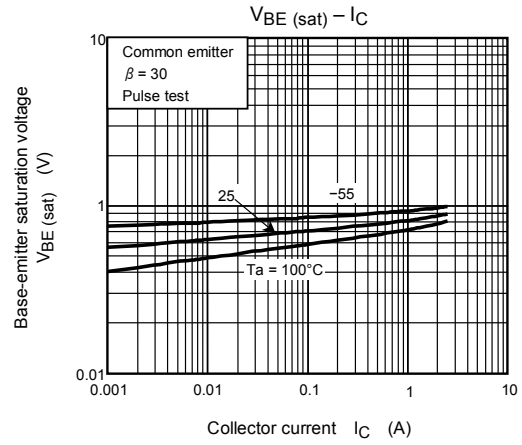
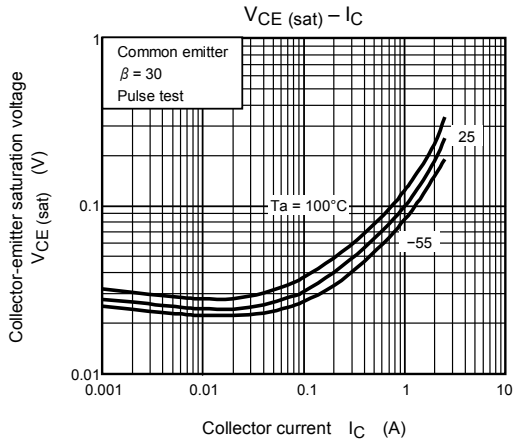
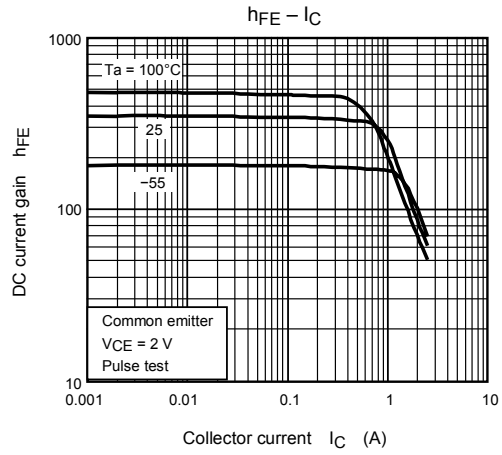
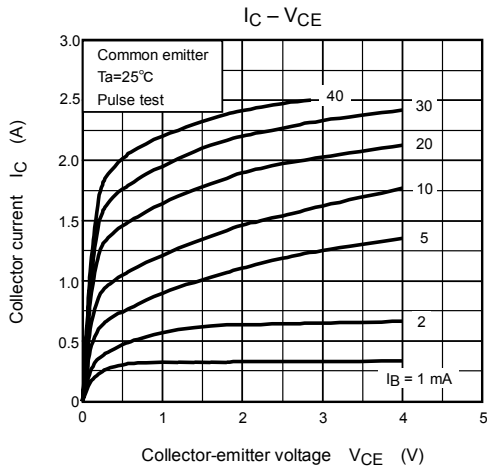
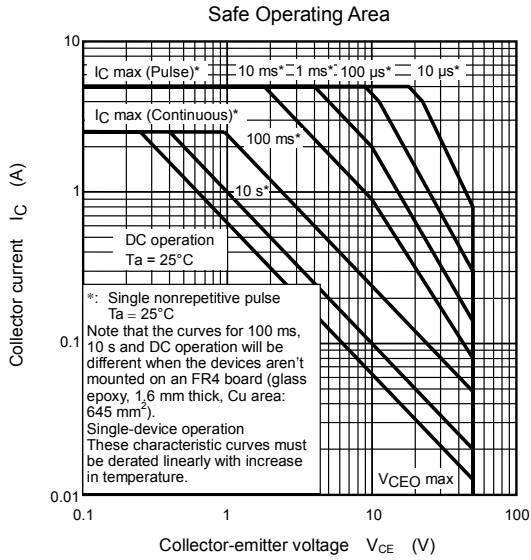
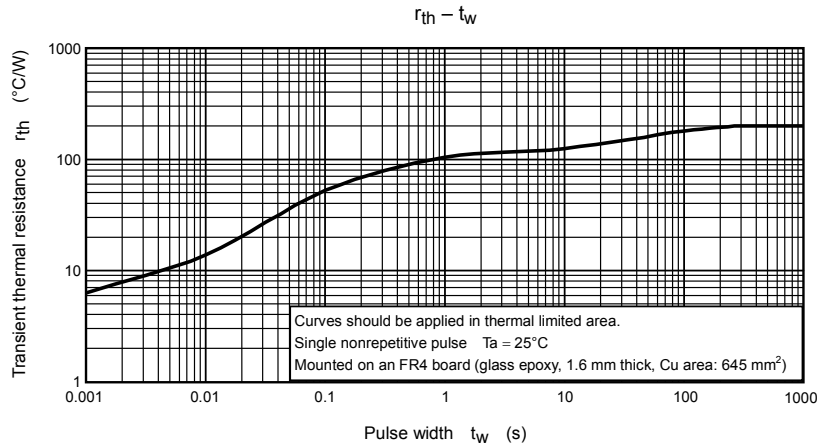


Figure 1 Switching Time Test Circuit & Timing Chart

Marking







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