

TOSHIBA Transistor Silicon NPN Triple Diffused Type

2SC6040

High-Speed and High-Voltage Switching Applications

Switching Regulator Applications

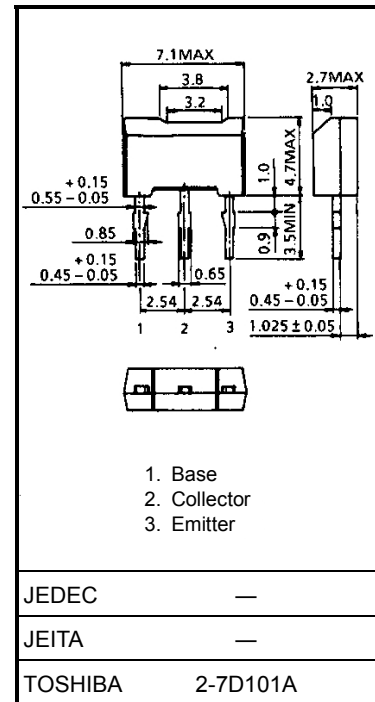
DC-DC Converter Applications

Unit: mm

- High-speed switching: $t_f = 0.2 \mu s$ (max) ($I_C = 0.3 A$)
- High breakdown voltage: $V_{CES} = 800 V$, $V_{CEO} = 410 V$

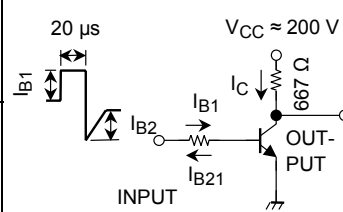
Maximum Ratings ($T_a = 25^\circ C$)

Characteristic		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	800	V
Collector-emitter voltage		V_{CES}	800	V
Collector-emitter voltage		V_{CEO}	410	V
Emitter-base voltage		V_{EBO}	8	V
Collector current	DC	I_C	1.0	A
	Pulse	I_{CP}	2.0	
Base current		I_B	0.5	A
Collector power dissipation	$T_a = 25^\circ C$	P_C	1.0	W
Junction temperature		T_j	150	$^\circ C$
Storage temperature range		T_{stg}	-55 to 150	$^\circ C$

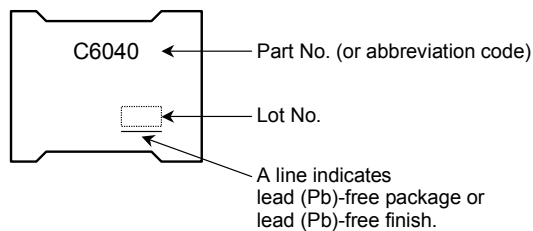


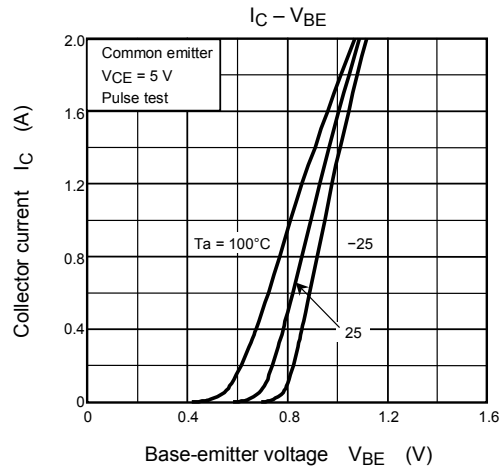
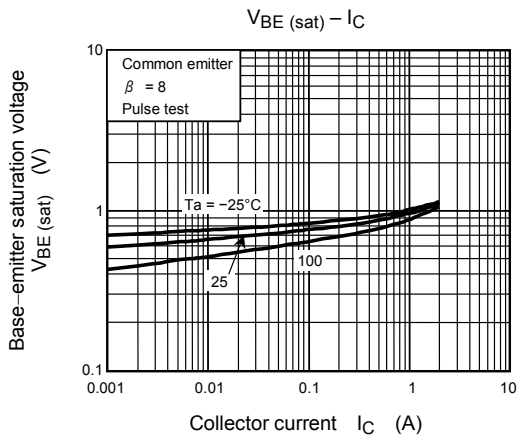
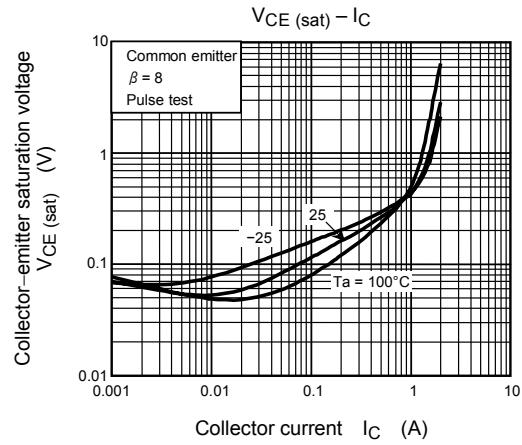
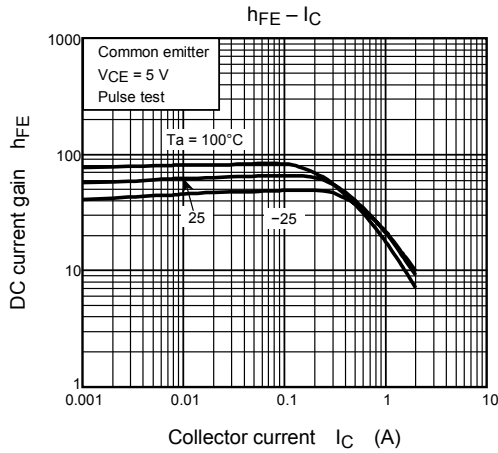
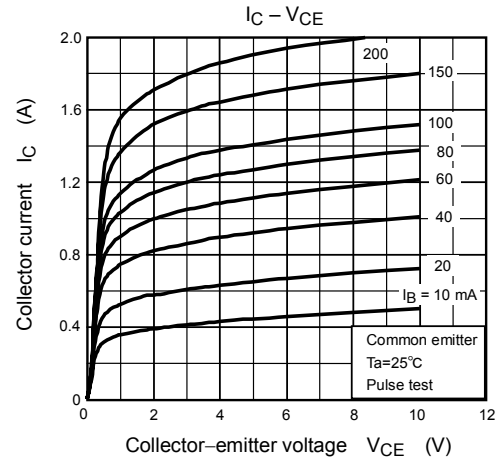
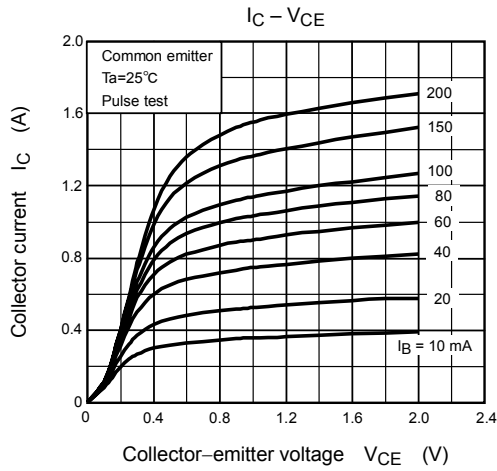
Weight: 0.2 g (typ.)

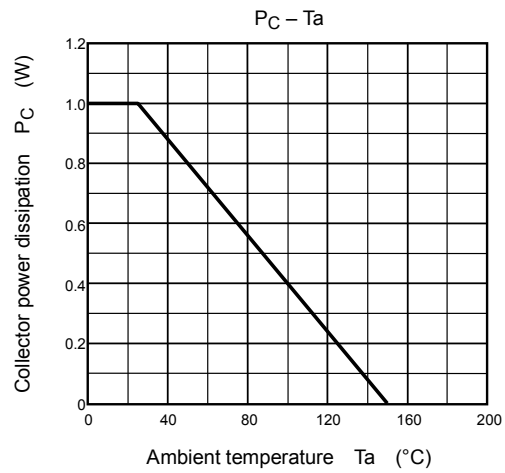
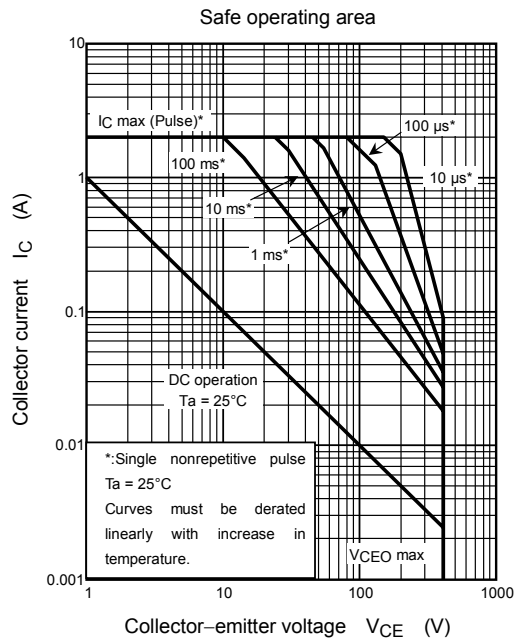
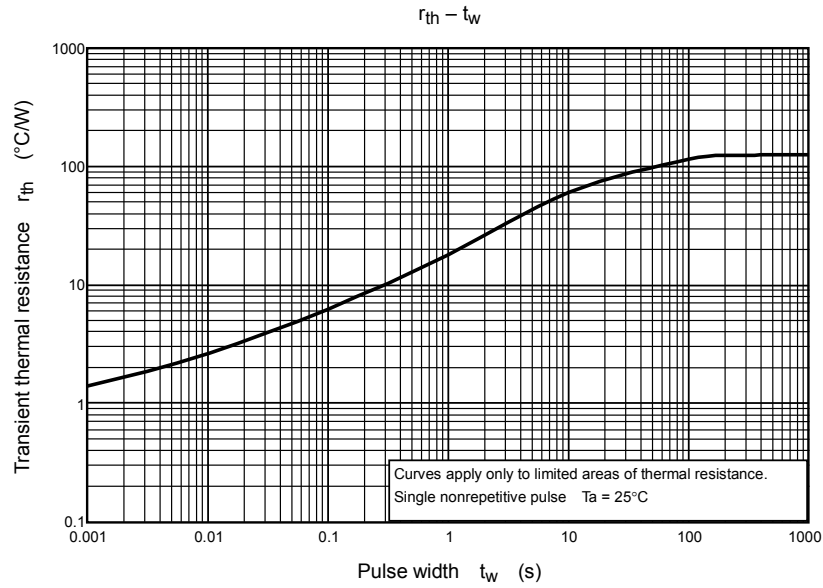
Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = 800 \text{ V}, I_E = 0$	—	—	100	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = 8 \text{ V}, I_C = 0$	—	—	100	μA
Collector-base breakdown voltage		$V_{(BR) CBO}$	$I_C = 1 \text{ mA}, I_B = 0$	800	—	—	V
Collector-emitter breakdown voltage		$V_{(BR) CEO}$	$I_C = 10 \text{ mA}, I_B = 0$	410	—	—	V
DC current gain		$h_{FE (1)}$	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ mA}$	50	—	—	
		$h_{FE (2)}$	$V_{CE} = 5 \text{ V}, I_C = 0.1 \text{ A}$	60	—	120	
		$h_{FE (3)}$	$V_{CE} = 5 \text{ V}, I_C = 0.2 \text{ A}$	50	—	—	
Collector emitter saturation voltage		$V_{CE (sat)}$	$I_C = 0.8 \text{ A}, I_B = 0.1 \text{ A}$	—	—	1.0	V
Base-emitter saturation voltage		$V_{BE (sat)}$	$I_C = 0.8 \text{ A}, I_B = 0.1 \text{ A}$	—	—	1.3	V
Switching time	Rise time	t_r	 <p> $20 \mu\text{s}$ $V_{CC} \approx 200 \text{ V}$ 667Ω I_{B1} I_{B2} I_C I_{B21} $I_{B1} = 0.1 \text{ A}, -I_{B2} = 50 \text{ mA}$ $\text{DUTY CYCLE} \leq 1\%$ </p>	—	—	0.5	μs
	Storage time	t_{stg}		—	—	4.0	
	Fall time	t_f		—	—	0.2	

Marking







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