

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

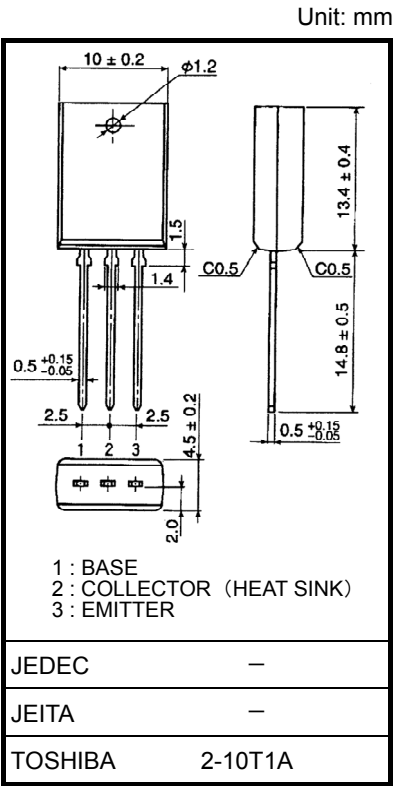
2SC6077

- Power Amplifier Applications
- Power Switching Applications

- Low collector saturation voltage: $V_{CE(sat)} = 0.5\text{ V (max)}$ ($I_C = 1\text{ A}$)
- High-speed switching: $t_{stg} = 0.4\text{ }\mu\text{s (typ)}$

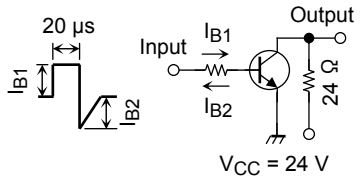
Absolute Maximum Ratings (Ta = 25°C)

Characteristic		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	160	V
Collector-emitter voltage		V_{CEX}	160	V
		V_{CEO}	80	V
Emitter-base voltage		V_{EBO}	9	V
Collector current	DC	I_C	3.0	A
	Pulse	I_{CP}	5.0	A
Base current		I_B	1.0	A
Collector power dissipation		P_C	1.8	W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-55~150	°C

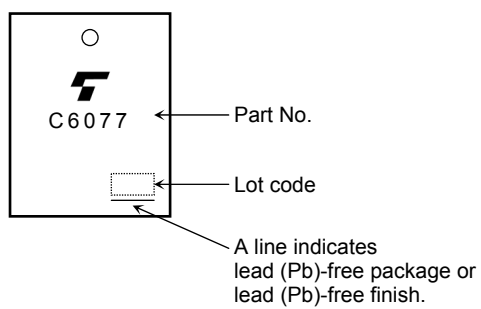


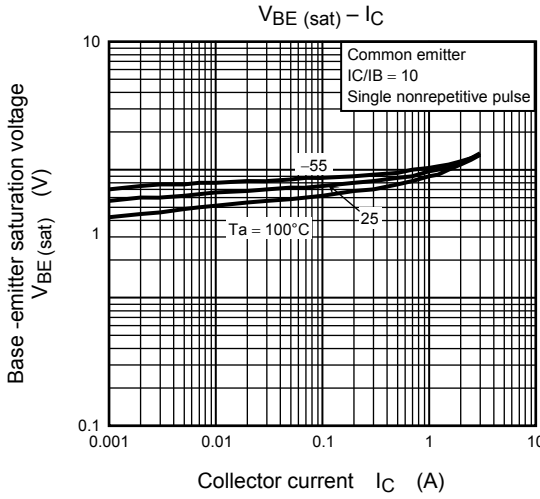
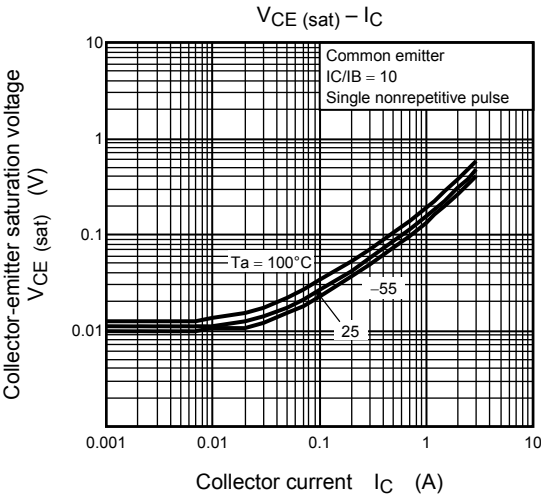
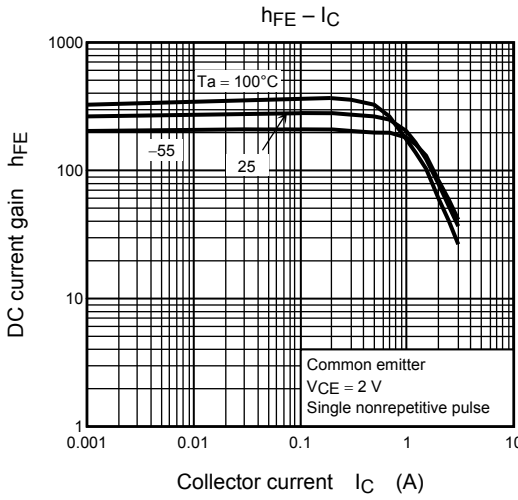
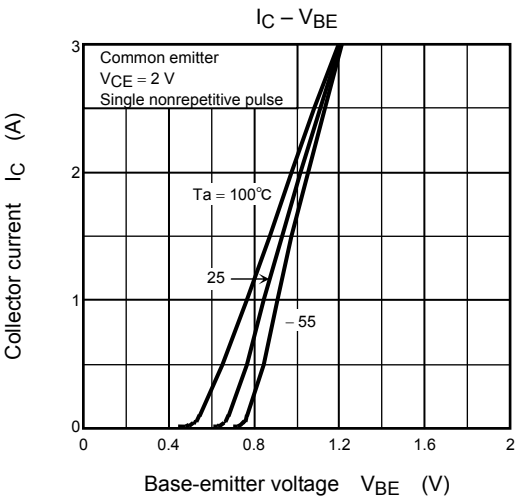
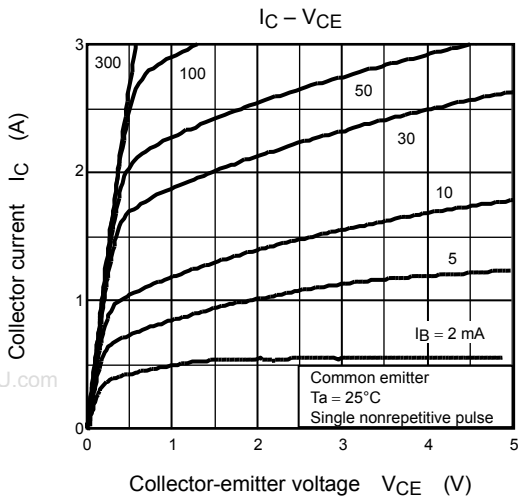
Weight: 1.5g(typ)

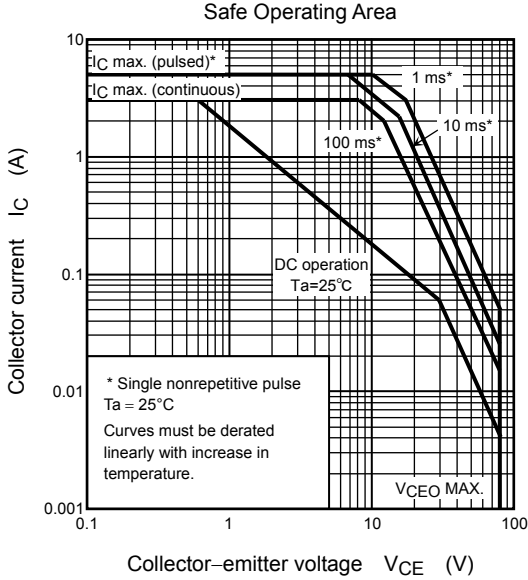
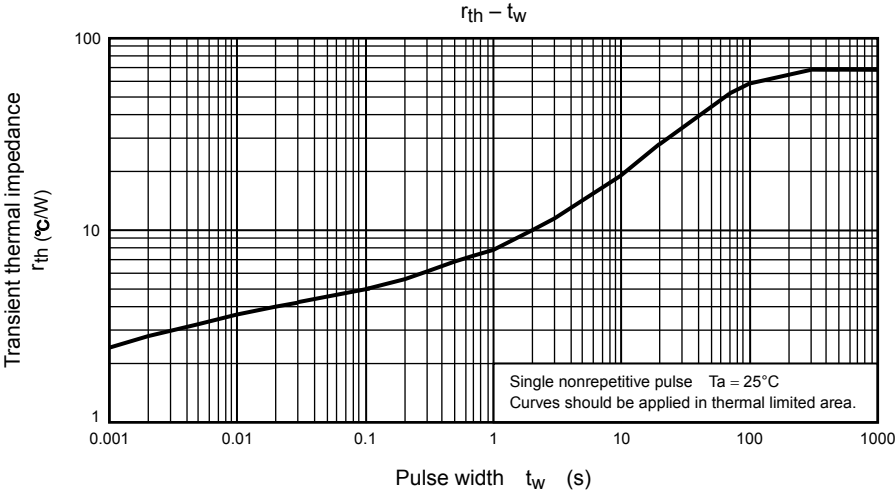
Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Conditions	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = 160\text{ V}, I_E = 0$	—	—	1.0	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = 9\text{ V}, I_C = 0$	—	—	1.0	μA
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	$I_C = 10\text{ mA}, I_B = 0$	80	—	—	V
DC current gain		$h_{FE(1)}$	$V_{CE} = 2\text{ V}, I_C = 1\text{ mA}$	150	—	—	
		$h_{FE(2)}$	$V_{CE} = 2\text{ V}, I_C = 0.5\text{ A}$	180	—	450	
		$h_{FE(3)}$	$V_{CE} = 2\text{ V}, I_C = 1\text{ A}$	100	—	—	
Collector emitter saturation voltage		$V_{CE(sat)(1)}$	$I_C = 0.5\text{ A}, I_B = 50\text{ mA}$	—	—	0.3	V
		$V_{CE(sat)(2)}$	$I_C = 1\text{ A}, I_B = 100\text{ mA}$	—	—	0.5	V
Base-emitter saturation voltage		$V_{BE(sat)}$	$I_C = 1\text{ A}, I_B = 100\text{ mA}$	—	—	1.5	V
Transition frequency		f_T	$V_{CE} = 2\text{ V}, I_C = 0.5\text{ A}$	—	150	—	MHz
Collector output capacitance		C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	14	—	pF
Switching time	Rise time	t_r	 $I_{B1} = -I_{B2} = 100\text{ mA}$ Duty cycle $\leq 1\%$	—	0.05	—	μs
	Storage time	t_{stg}		—	0.4	—	
	Fall time	t_f		—	0.15	—	

Marking







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