

TOSHIBA Transistor Silicon NPN Epitaxial Type

2SC5030

Strobe Flash Applications

Medium Power Amplifier Applications

- High DC current gain: $h_{FE(1)} = 800$ to 3200 ($V_{CE} = 2\text{ V}$, $I_C = 0.5\text{ A}$)
 $h_{FE(2)} = 250$ (min) ($V_{CE} = 2\text{ V}$, $I_C = 4\text{ A}$)
- Low saturation voltage: $V_{CE(sat)} = 0.5\text{ V}$ (max)
 $(I_C = 4\text{ A}, I_B = 40\text{ mA})$
- High collector power dissipation: $P_C = 1.3\text{ W}$

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

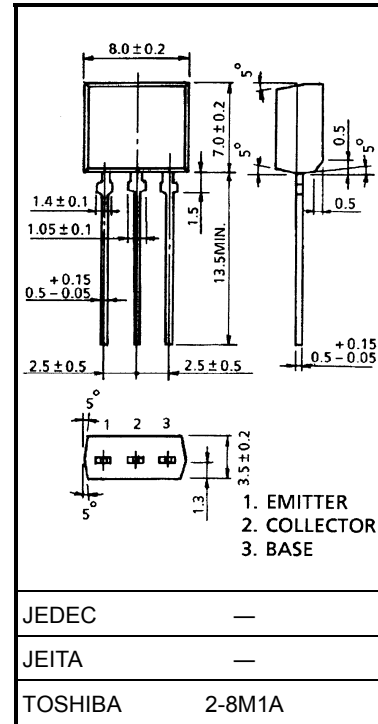
Characteristics	Symbol	Rating	Unit	
Collector-base voltage	V_{CBO}	50	V	
Collector-emitter voltage	V_{CES}	40	V	
	V_{CEO}	20		
Emitter-base voltage	V_{EBO}	8	V	
Collector current	DC	I_C	5	A
	Pulse (Note 1)	I_{CP}	8	
Base current	I_B	0.5	A	
Collector power dissipation	P_C	1.3	W	
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature range	T_{stg}	-55 to 150	$^\circ\text{C}$	

Note 1: Conditions: Pulse width = 10 ms (max), duty cycle = 30% (max)

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).

Unit: mm

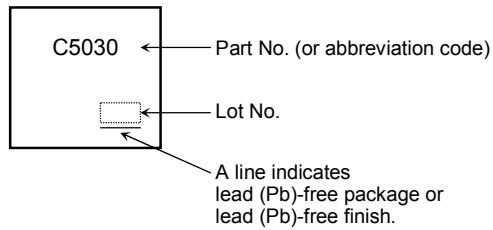


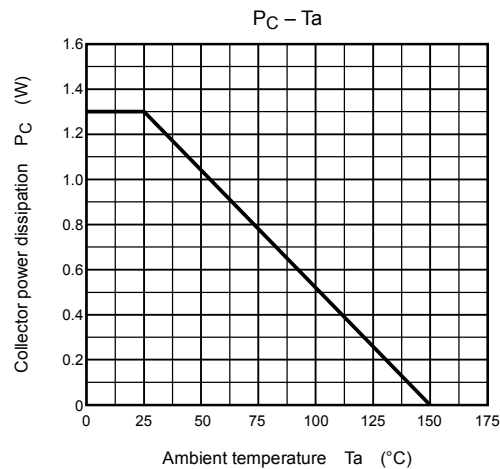
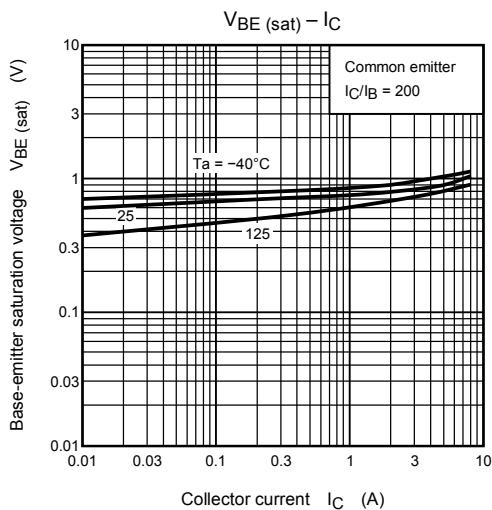
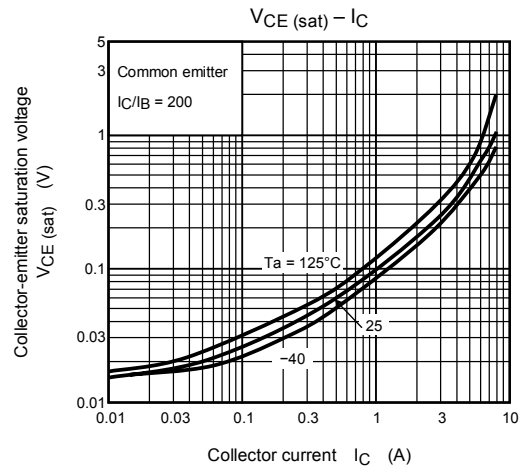
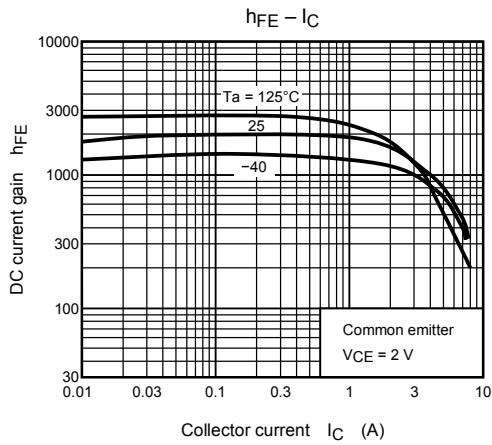
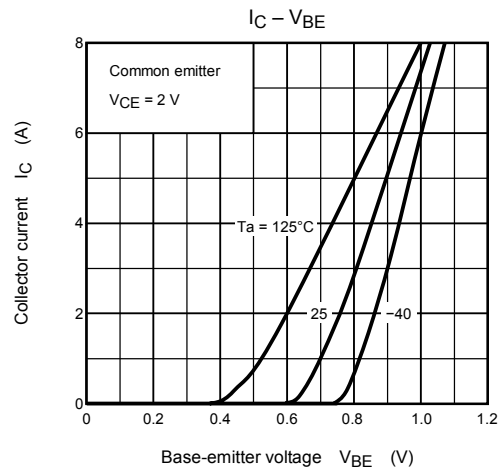
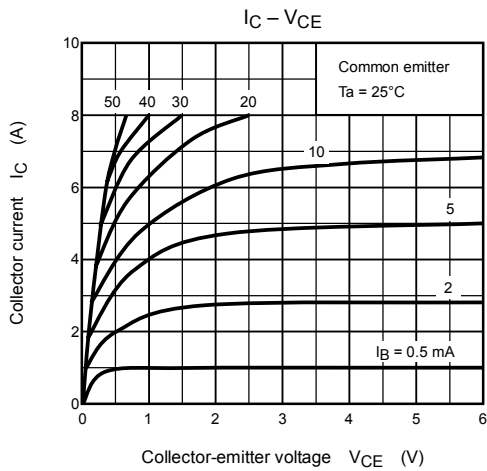
Weight: 0.55 g (typ.)

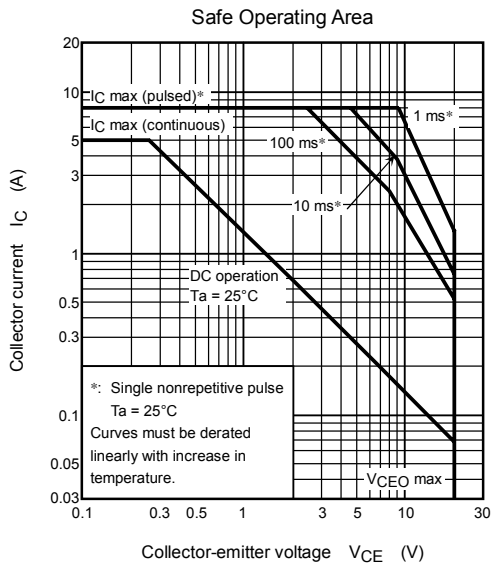
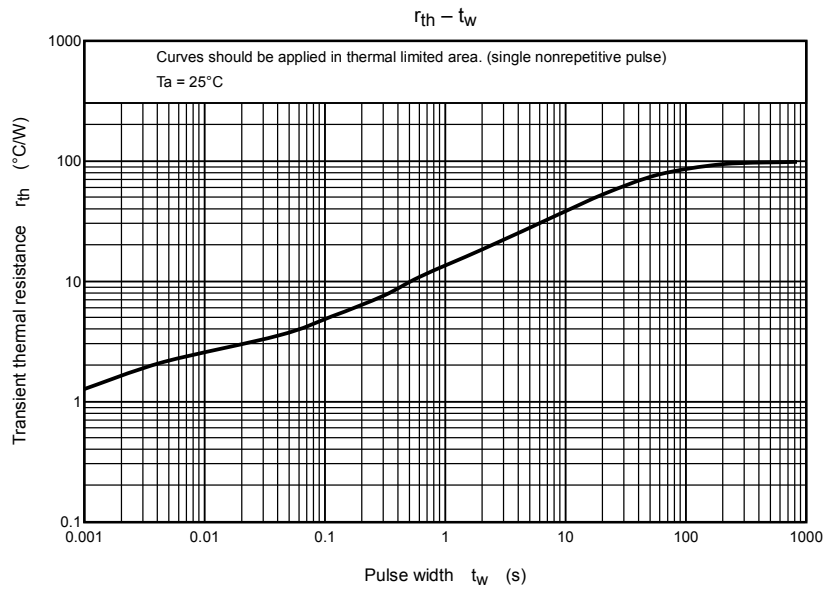
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 50 \text{ V}, I_E = 0$	—	—	100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = 8 \text{ V}, I_C = 0$	—	—	100	nA
Collector-emitter breakdown voltage	$V_{(BR) CEO}$	$I_C = 10 \text{ mA}, I_B = 0$	20	—	—	V
DC current gain	$h_{FE} (1)$	$V_{CE} = 2 \text{ V}, I_C = 0.5 \text{ A}$	800	—	3200	
	$h_{FE} (2)$	$V_{CE} = 2 \text{ V}, I_C = 4 \text{ A}$	250	—	—	
Collector-emitter saturation voltage	$V_{CE (sat)}$	$I_C = 4 \text{ A}, I_B = 40 \text{ mA}$	—	—	0.5	V
Base-emitter voltage	V_{BE}	$V_{CE} = 2 \text{ V}, I_C = 4 \text{ A}$	—	—	1.2	V
Transition frequency	f_T	$V_{CE} = 2 \text{ V}, I_C = 0.5 \text{ A}$	—	150	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	45	—	pF

Marking







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