

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

# 2SC3279

Strobe Flash Applications

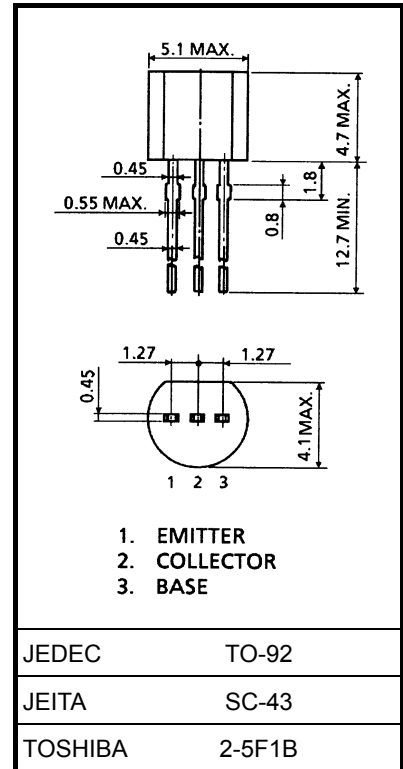
Medium Power Amplifier Applications

Unit: mm

- High DC current gain and excellent  $h_{FE}$  linearity  
 :  $h_{FE} (1) = 140\sim 600$  ( $V_{CE} = 1\text{ V}$ ,  $I_C = 0.5\text{ A}$ )  
 :  $h_{FE} (2) = 70$  (min), 200 (typ.) ( $V_{CE} = 1\text{ V}$ ,  $I_C = 2\text{ A}$ )
- Low saturation voltage:  $V_{CE(sat)} = 0.5\text{ V}$  (max)  
 ( $I_C = 2\text{ A}$ ,  $I_B = 50\text{ mA}$ )

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

Characteristics		Symbol	Rating	Unit
Collector-base voltage		$V_{CBO}$	30	V
Collector-emitter voltage		$V_{CES}$	30	V
		$V_{CEO}$	10	
Emitter-base voltage		$V_{EBO}$	6	V
Collector current	DC	$I_C$	2	A
	Pulsed (Note 1)	$I_{CP}$	5	
Base current		$I_B$	0.2	A
Collector power dissipation		$P_C$	750	mW
Junction temperature		$T_j$	150	$^\circ\text{C}$
Storage temperature range		$T_{stg}$	-55~150	$^\circ\text{C}$



Weight: 0.21 g (typ.)

Note: 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.

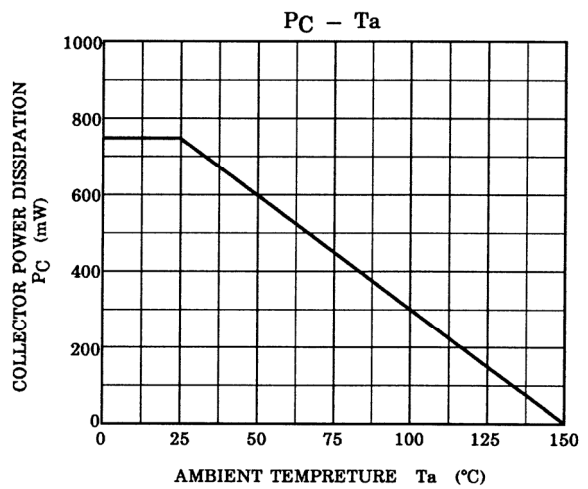
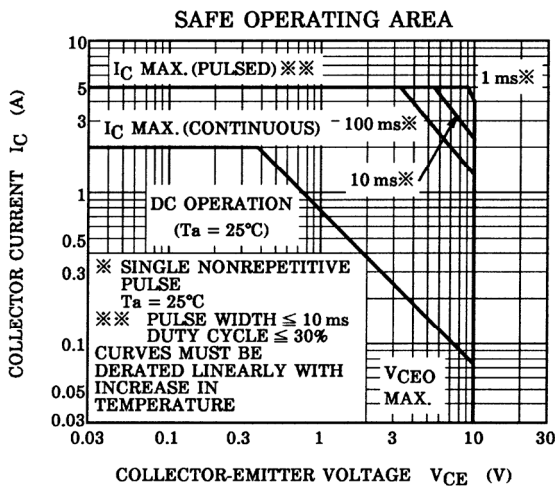
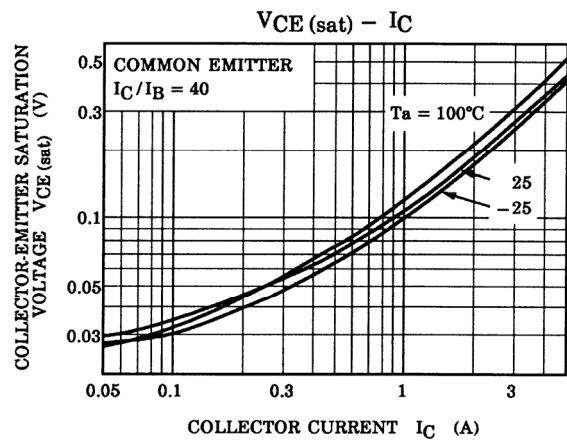
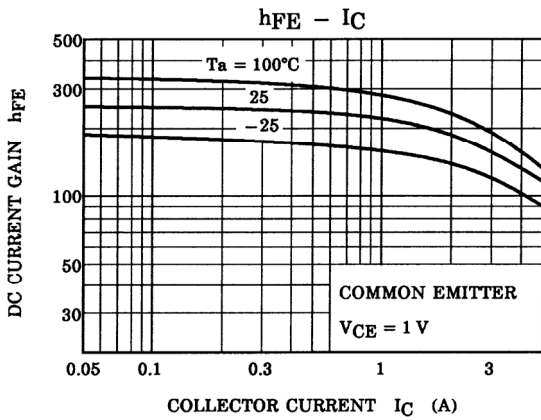
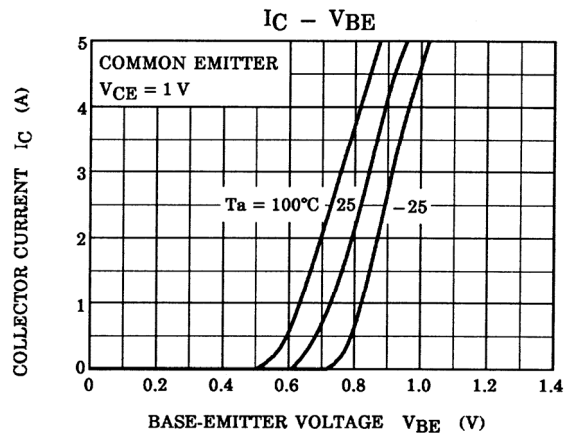
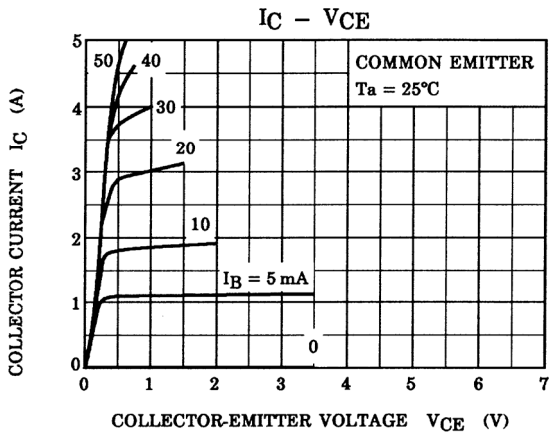
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

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

## Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB} = 30\text{ V}$ , $I_E = 0$	—	—	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	$V_{(BR)CEO}$	$I_C = 10\text{ mA}$ , $I_B = 0$	10	—	—	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 1\text{ mA}$ , $I_C = 0$	6	—	—	V
DC current gain	$h_{FE} (1)$ (Note 2)	$V_{CE} = 1\text{ V}$ , $I_C = 0.5\text{ A}$	140	—	600	
	$h_{FE} (2)$	$V_{CE} = 1\text{ V}$ , $I_C = 2\text{ A}$	70	200	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 2\text{ A}$ , $I_B = 50\text{ mA}$	—	0.2	0.5	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = 1\text{ V}$ , $I_C = 2\text{ A}$	—	0.86	1.5	V
Transition frequency	$f_T$	$V_{CE} = 1\text{ V}$ , $I_C = 0.5\text{ A}$	—	150	—	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10\text{ V}$ , $I_E = 0$ , $f = 1\text{ MHz}$	—	27	—	pF

Note 2:  $h_{FE} (1)$  classification L: 140~240, M: 200~330, N: 300~450, P: 420~600



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20070701-EN GENERAL

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