TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

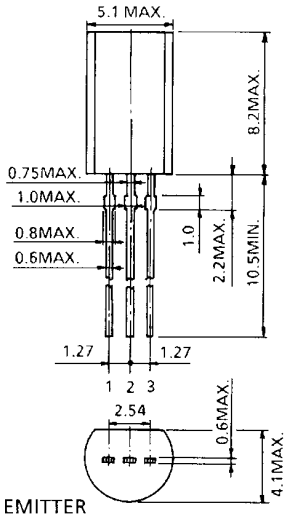
2SC4781

Strobe Flash Applications

Medium Power Amplifier Applications

- High DC current gain and Excellent h_{FE} linearity
  : $h_{FE\ (1)}$ = 200 to 600 (V_{CE} = 2 V, I_C = 1 A)
  : $h_{FE\ (2)}$ = 300 (typ.) (V_{CE} = 2 V, I_C = 4 A)
- Low saturation voltage: $V_{CE\ (sat)}$ = 0.5 V (max) (I_C = 4 A, I_B = 80 mA)

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	2-5J1A

Weight: 0.36 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

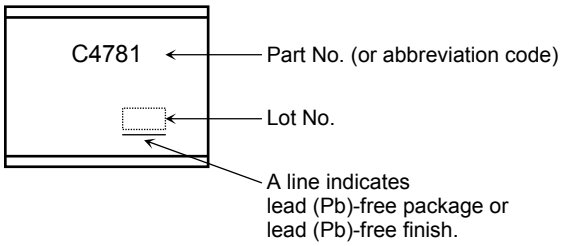
Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	30	V
Collector-emitter voltage		V_{CES}	30	V
		V_{CEO}	10	
Emitter-base voltage		V_{EBO}	6	V
Collector current	DC	I_C	4	A
	Pulsed	I_{CP}	8	
Base current		I_B	0.8	A
Collector power dissipation		P_C	900	mW
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	−55 to 150	°C

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).

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = 30 V, I_E = 0	—	—	100	nA
Emitter cut-off current	I_{EBO}	V_{EB} = 6 V, I_C = 0	—	—	100	nA
Collector-emitter breakdown voltage	$V_{(BR)\ CEO}$	I_C = 10 mA, I_B = 0	10	—	—	V
DC current gain	$h_{FE\ (1)}$	V_{CE} = 2 V, I_C = 1 A	200	—	600	
	$h_{FE\ (2)}$	V_{CE} = 2 V, I_C = 4 A	140	300	—	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = 4 A, I_B = 80 mA	—	0.28	0.5	V
Base-emitter voltage	V_{BE}	V_{CE} = 2 V, I_C = 4 A	—	1.0	1.5	V
Transition frequency	f_T	V_{CE} = 2 V, I_C = 0.5 A	—	170	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz	—	50	—	pF

Marking



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