

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

2SC4781

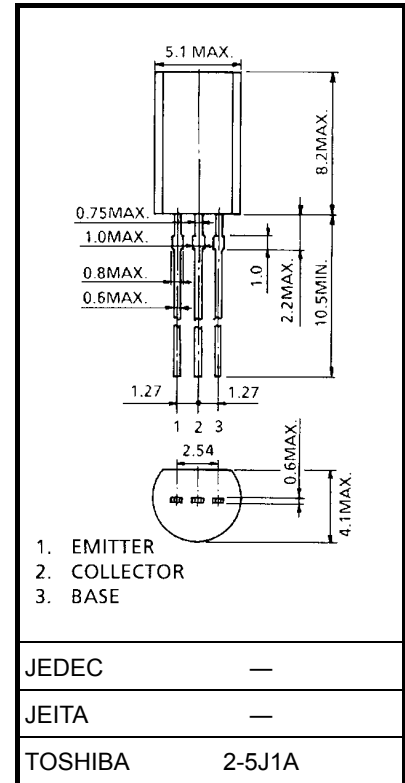
Strobe Flash Applications
 Medium Power Amplifier Applications

Unit: mm

- 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)

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	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	$^\circ\text{C}$
Storage temperature range		T_{stg}	-55 to 150	$^\circ\text{C}$



Weight: 0.36 g (typ.)

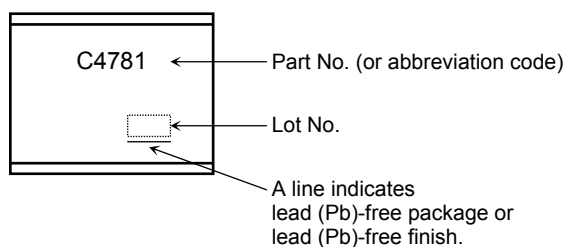
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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).

Electrical Characteristics (Ta = 25°C)

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

Marking



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20070701-EN

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