

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

2SC2500

Strobe Flash Applications

Medium-Power Amplifier Applications

Unit: mm

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

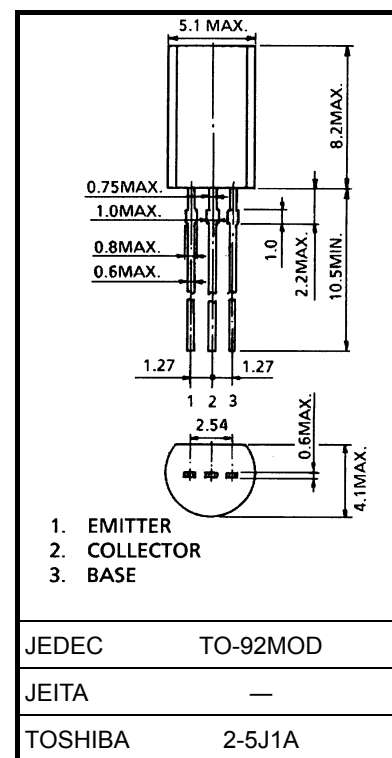
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

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	0.5	A
Collector power dissipation		P_C	900	mW
Junction temperature		T_j	150	$^\circ\text{C}$
Storage temperature range		T_{stg}	-55 to 150	$^\circ\text{C}$

Note 1: Pulse test: 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).



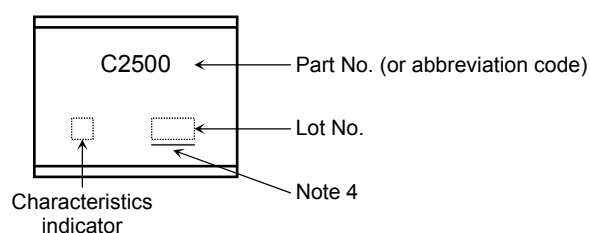
Weight: 0.36 g (typ.)

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_{CEO}	$I_C = 10\text{ mA}, I_B = 0$	10	—	—	V
Emitter-base breakdown voltage	V_{EBO}	$I_C = 1\text{ mA}, I_C = 0$	6	—	—	V
DC current gain	$h_{FE(1)}$ (Note 3)	$V_{CE} = 1\text{ V}, I_C = 0.5\text{ A}$	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 3: $h_{FE(1)}$ classification A: 140 to 240, B: 200 to 330, C: 300 to 450, D: 420 to 600

Marking



Note 4: A line under a Lot No. identifies the indication of product Labels.

Not underlined: $[[Pb]]/INCLUDES > MCV$

Underlined: $[[G]]/RoHS\ COMPATIBLE$ or $[[G]]/RoHS\ [[Pb]]$

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product. The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

