

TENTATIVE

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

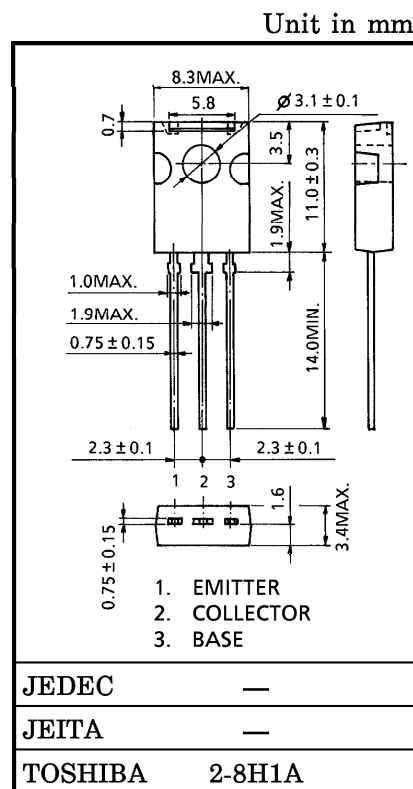
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VIDEO OUTPUT STAGE IN HIGH RESOLUTION DISPLAY

- High Transition Frequency : $f_T = 400 \text{ MHz (Typ.)}$
($V_{CE} = 10 \text{ V}$, $I_C = 50 \text{ mA}$)
- Low Collector Output Capacitance : $C_{ob} = 3 \text{ pF (Typ.)}$
($V_{CB} = 30 \text{ V}$)
- High Voltage : $V_{CEO} = 120 \text{ V}$

MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	120	V
Collector-Emitter Voltage		V_{CEO}	120	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	0.3	A
	Pulse	I_{CP}	0.5	
Base Current		I_B	0.1	A
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	P_C	1.5	W
	$T_c = 25^\circ\text{C}$		8	
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	$-55 \sim 150$	$^\circ\text{C}$



Weight : 0.82 g (Typ.)

ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 120 \text{ V}$, $I_E = 0$	—	—	100	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5 \text{ V}$, $I_C = 0$	—	—	1	μA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 1 \text{ mA}$, $I_B = 0$	120	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10 \text{ mA}$, $I_B = 0$	120	—	—	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 10 \text{ V}$, $I_C = 50 \text{ mA}$	40	—	240	
	$h_{FE(2)}$	$V_{CE} = 10 \text{ V}$, $I_C = 200 \text{ mA}$	25	—	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 50 \text{ mA}$, $I_B = 5 \text{ mA}$	—	—	1.0	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 50 \text{ mA}$, $I_B = 5 \text{ mA}$	—	—	1.0	V
Transition Frequency	f_T	$V_{CE} = 10 \text{ V}$, $I_C = 50 \text{ mA}$	—	400	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = 30 \text{ V}$, $f = 1 \text{ MHz}$, $I_E = 0$	—	3.0	5.0	pF

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