

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

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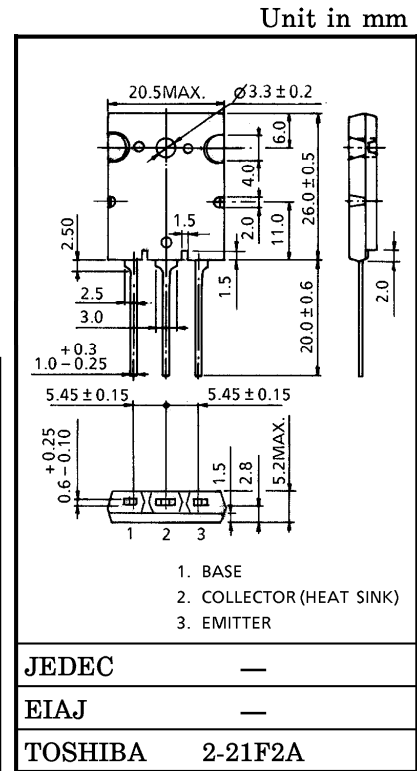
HORIZONTAL DEFLECTION OUTPUT FOR HIGH RESOLUTION DISPLAY, COLOR TV

HIGH SPEED SWITCHING APPLICATIONS

- High Voltage : $V_{CB0} = 1500\text{ V}$
- Low Saturation Voltage : $V_{CE(sat)} = 3\text{ V (Max.)}$
- High Speed : $t_f = 0.15\ \mu\text{s (Typ.)}$

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CB0}	1500	V
Collector-Emitter Voltage		V_{CEO}	600	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	20	A
	Pulse	I_{CP}	40	
Base Current		I_B	10	A
Collector Power Dissipation ($T_c = 25^\circ\text{C}$)		P_C	200	W
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-55~150	$^\circ\text{C}$



Weight : 9.75 g (Typ.)

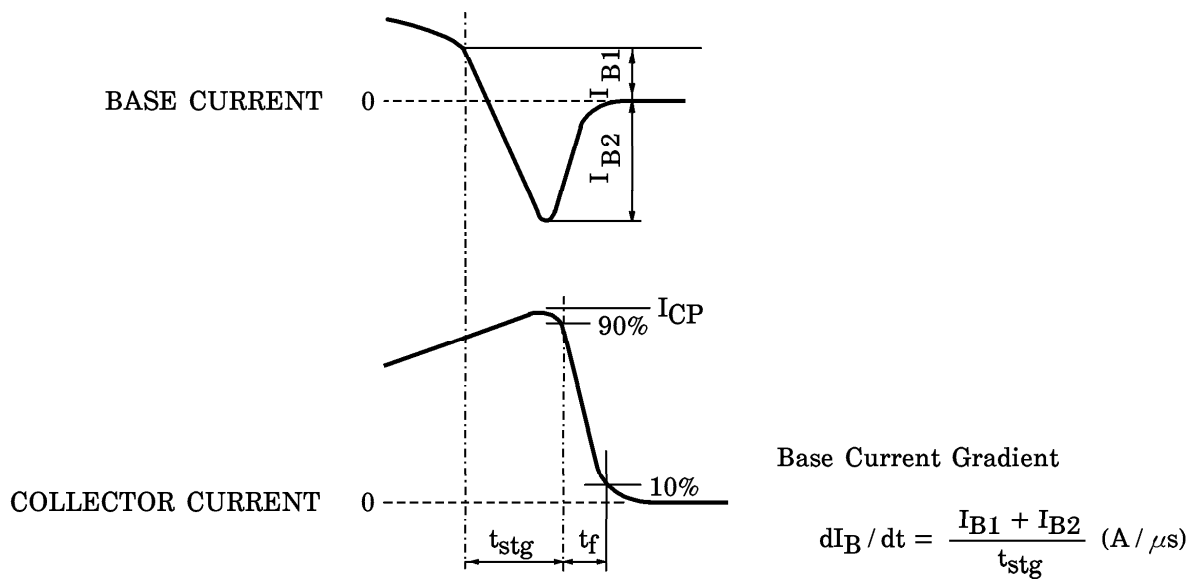
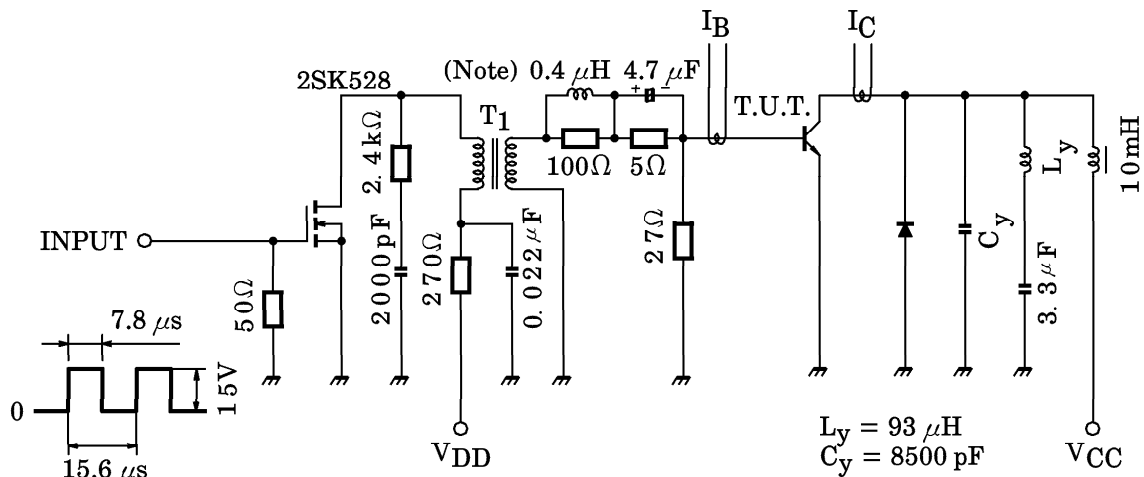
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 1500\text{ V}, I_E = 0$	—	—	1	mA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	10	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{ mA}, I_B = 0$	600	—	—	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 5\text{ V}, I_C = 2\text{ A}$	10	—	30	—
	$h_{FE(2)}$	$V_{CE} = 5\text{ V}, I_C = 14\text{ A}$	4.5	—	8.5	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 14\text{ A}, I_B = 3.5\text{ A}$	—	—	3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 14\text{ A}, I_B = 3.5\text{ A}$	—	1.0	1.4	V
Transition Frequency	f_T	$V_{CE} = 10\text{ V}, I_E = 0.1\text{ A}$	—	1.7	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	290	—	pF
Switching Time (Fig.1)	Storage Time	$I_{CP} = 10\text{ A}, I_{B1}(\text{end}) = 1.8\text{ A}$	—	2.5	4.0	μs
	Fall Time		t_{stg}	t_f	0.15	

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Fig.1 SWITCHING TIME TEST CIRCUIT



(Note) : Leakage Inductance of secondary winding LB is $1.2 \mu\text{H}$

