

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

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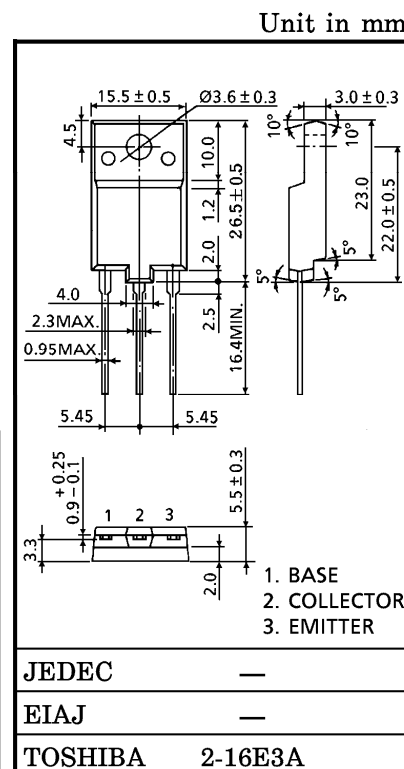
HORIZONTAL DEFLECTION OUTPUT FOR HIGH RESOLUTION DISPLAY, COLOR TV

HIGH SPEED SWITCHING APPLICATIONS

- High Speed : $t_f = 0.15 \mu s$ (Typ.)
- High Voltage : $V_{CBO} = 1500 V$
- Low Saturation Voltage : $V_{CE(sat)} = 5 V$ (Max.)
- Collector Metal (Fin) is Fully Covered with Mold Resin

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CB0}	1500	V
Collector-Emitter Voltage		V_{CEO}	600	V
Emitter-Base Voltage		V_{EB0}	5	V
Collector Current	DC	I_C	8	A
	Pulse	I_{CP}	16	
Base Current		I_B	4	A
Collector Power Dissipation ($T_c = 25^\circ\text{C}$)		P_C	50	W
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	$-55\sim 150$	$^\circ\text{C}$



Weight : 5.5 g (Typ.)

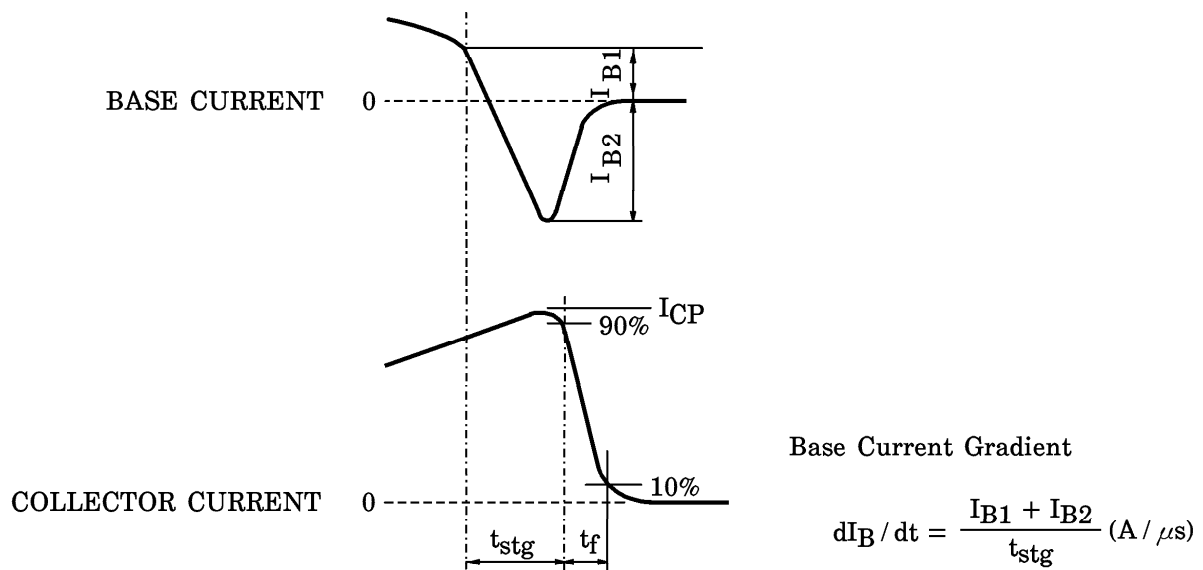
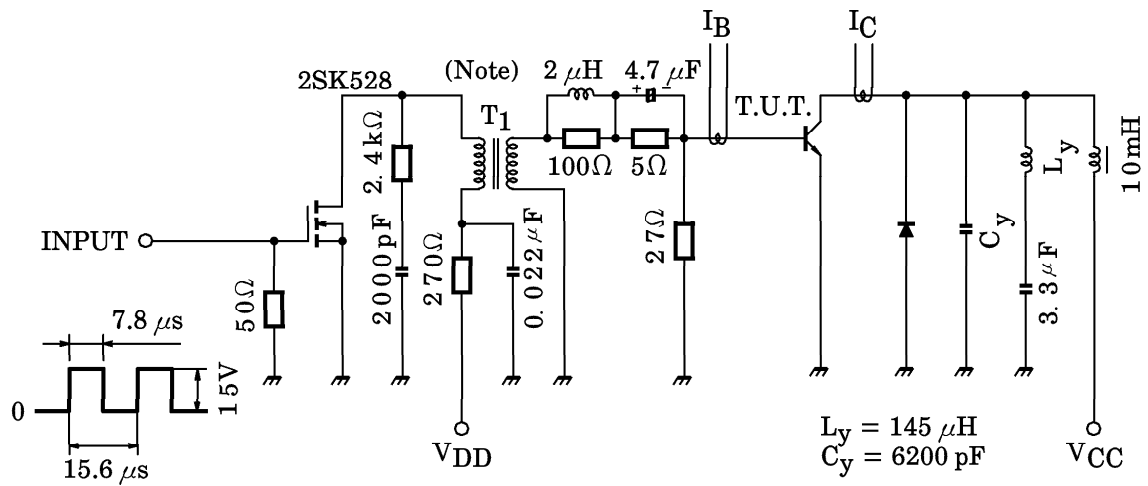
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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		$h_{FE} (1)$	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ A}$	8	—	25	—
		$h_{FE} (2)$	$V_{CE} = 5 \text{ V}, I_C = 5 \text{ A}$	3.8	—	8.0	
Collector-Emitter Saturation Voltage		$V_{CE} (\text{sat})$	$I_C = 5 \text{ A}, I_B = 1.3 \text{ A}$	—	—	5	V
Base-Emitter Saturation Voltage		$V_{BE} (\text{sat})$	$I_C = 5 \text{ A}, I_B = 1.3 \text{ A}$	—	1.0	1.3	V
Transition Frequency		f_T	$V_{CE} = 10 \text{ V}, I_C = 0.1 \text{ A}$	—	2	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	110	—	pF
Switching Time (Fig.1)	Storage Time	t_{stg}	$I_{CP} = 4 \text{ A}, I_{B1} (\text{end}) = 0.8 \text{ A}$	—	2.5	4	μs
	Fall Time	t_f	$f_H = 64 \text{ kHz}$	—	0.15	0.3	

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Fig.1 SWITCHING TIME TEST CIRCUIT



(Note) : Leakage Inductance of secondary winding LB is 1.2 μ H

