TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

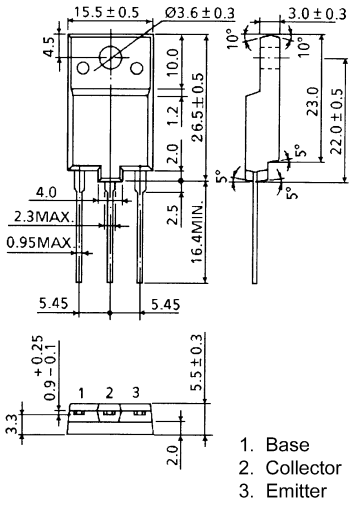
2SD2498

HORIZONTAL DEFLECTION OUTPUT FOR HIGH RESOLUTION DISPLAY, COLOR TV

HIGH SPEED SWITCHING APPLICATIONS

- High Voltage : V_{CBO} = 1500 V
- Low Saturation Voltage : $V_{CE\ (sat)}$ = 5 V (Max.)
- High Speed : t_f = 0.4 μs (Typ.)
- Collector Metal (Fin) is Fully Covered with Mold Resin

Unit: mm



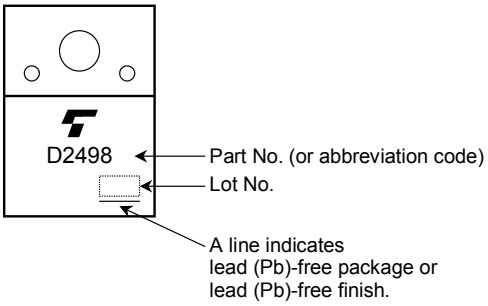
JEDEC	—
JEITA	—
TOSHIBA	2-16E3A

Weight: 5.5 g (typ.)

MAXIMUM RATINGS (Tc = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector−Base Voltage		V_{CBO}	1500	V
Collector−Emitter Voltage		V_{CEO}	600	V
Emitter−Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	6	A
	Pulse	I_{CP}	12	
Base Current		I_B	3	A
Collector Power Dissipation		P_C	50	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

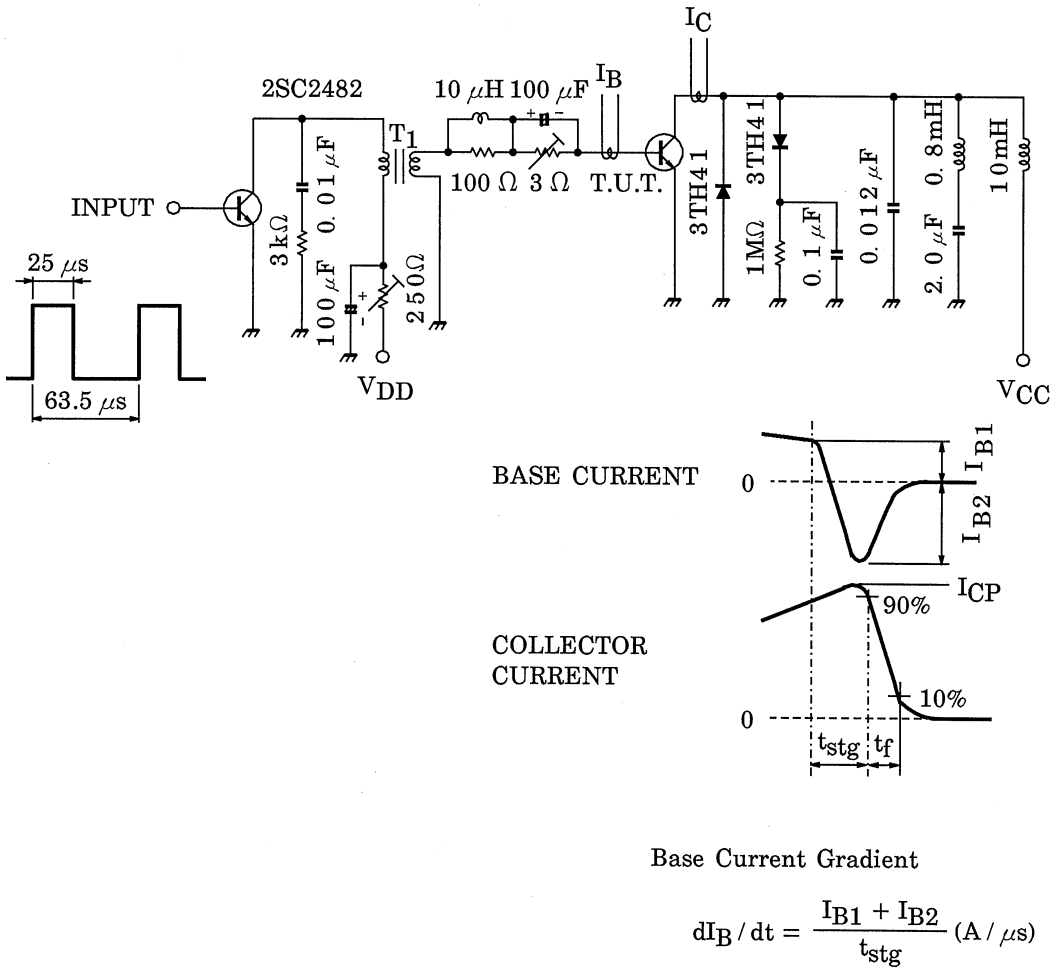
MARKING



ELECTRICAL CHARACTERISTICS (Tc = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Collector Cut−off Current		I_{CBO}	V_{CB} = 1500 V, I_E = 0	—	—	1	mA
Emitter Cut−off Current		I_{EBO}	V_{EB} = 5 V, I_C = 0	—	—	10	μA
Collector−Emitter Breakdown Voltage		$V_{(BR)\ CEO}$	I_C = 10 mA, I_B = 0	600	—	—	V
DC Current Gain		$h_{FE\ (1)}$	V_{CE} = 5 V, I_C = 1 A	10	—	30	—
		$h_{FE\ (2)}$	V_{CE} = 5 V, I_C = 4A	5	—	9	
Collector−Emitter Saturation Voltage		$V_{CE\ (sat)}$	I_C = 4A, I_B = 0.8 A	—	—	5	V
Base−Emitter Saturation Voltage		$V_{BE\ (sat)}$	I_C = 4 A, I_B = 0.8 A	—	0.9	1.2	V
Transition Frequency		f_T	V_{CE} = 10 V, I_C = 0.1 A	—	2	—	MHz
Collector Output Capacitance		C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz	—	95	—	pF
Switching Time (Fig.1)	Storage Time	t_{stg}	I_{CP} = 4 A, I_{B1} (end) = 0.8 A f_H = 15.75 kHz	—	7	10	μs
	Fall Time	t_f		—	0.4	0.7	

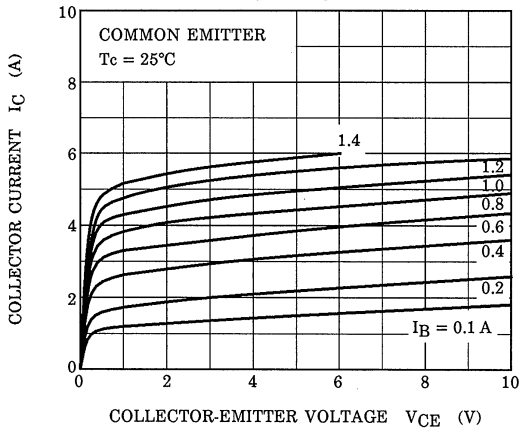
Fig.1 SWITCHING TIME TEST CIRCUIT



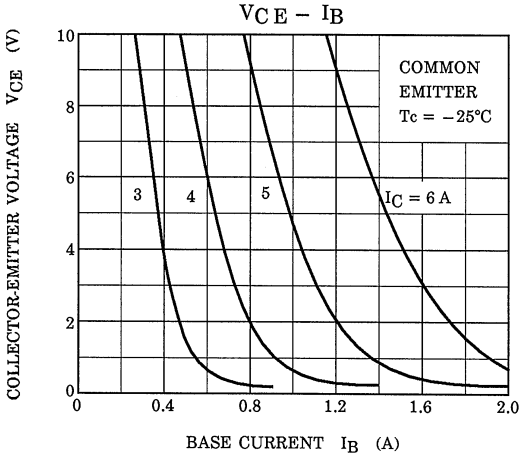
Base Current Gradient

$$dI_B / dt = \frac{I_{B1} + I_{B2}}{t_{stg}} \ (A / \mu s)$$

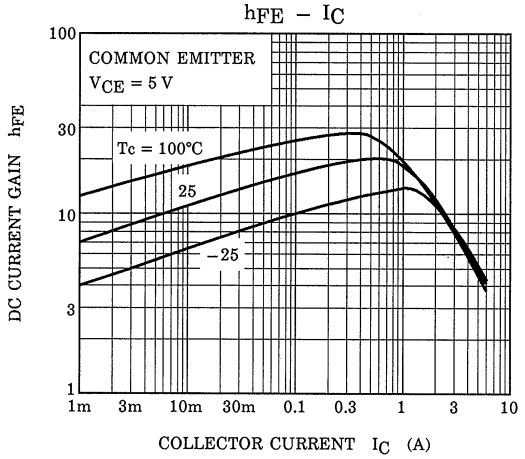
$I_C - V_{CE}$



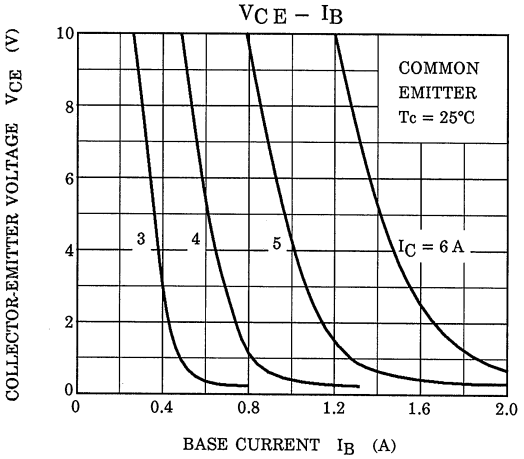
$V_{CE} - I_B$



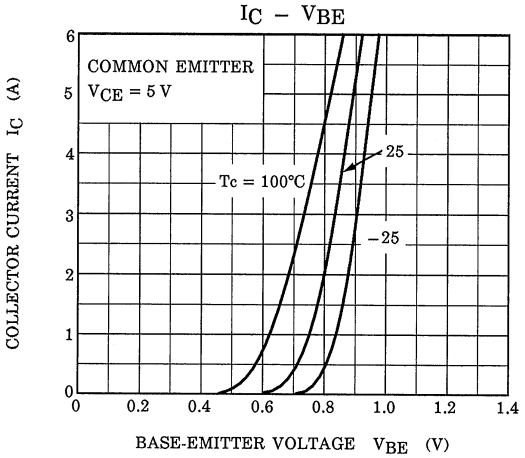
$h_{FE} - I_C$



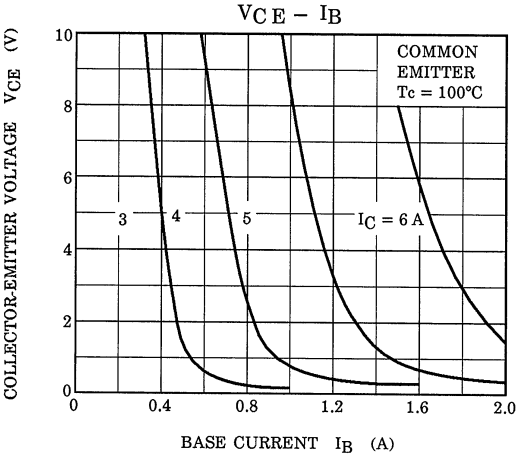
$V_{CE} - I_B$



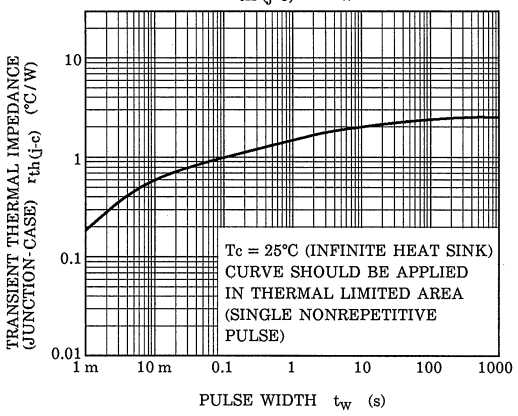
$I_C - V_{BE}$



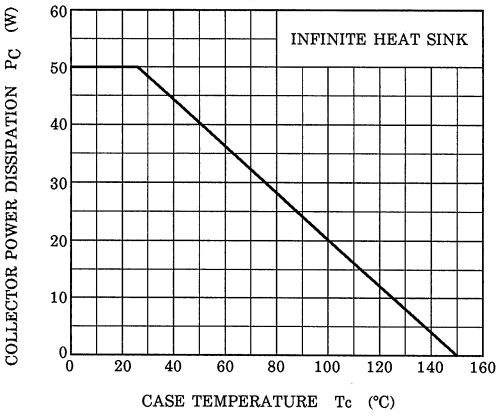
$V_{CE} - I_B$



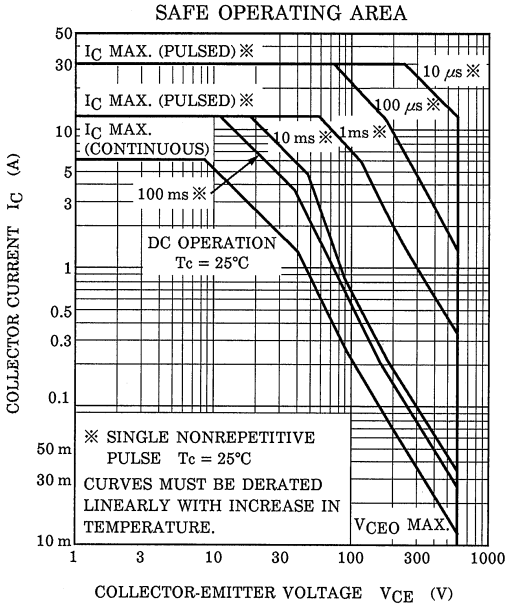
$r_{th\,(j\text{-}c)}$ – t_w



P_C – Tc



SAFE OPERATING AREA



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