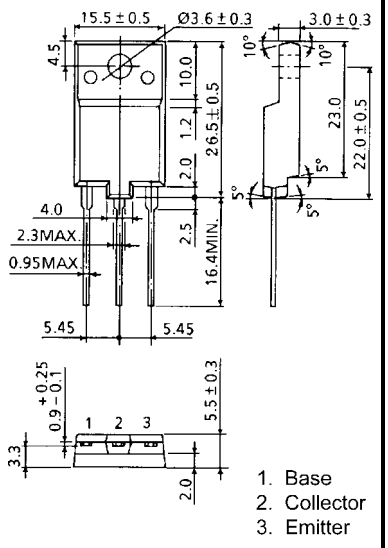
TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

2SD2539

HORIZONTAL DEFLECTION OUTPUT FOR COLOR TV

- High Voltage : V_{CBO} = 1500 V
- Low Saturation Voltage : $V_{CE\ (sat)}$ = 5 V (Max.)
- High Speed : t_f = 0.3 μs (Typ.)
- Bult-in Damper Type
- Collector Metal (Fin) is Fully Covered with Mold Resin.

Unit: mm



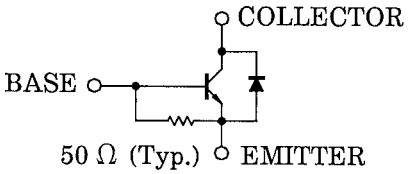
JEDEC	—
JEITA	—
TOSHIBA	2-16E3A

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	7	A
	Pulse	I_{CP}	14	
Base Current		I_B	3.5	A
Collector Power Dissipation		P_C	50	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

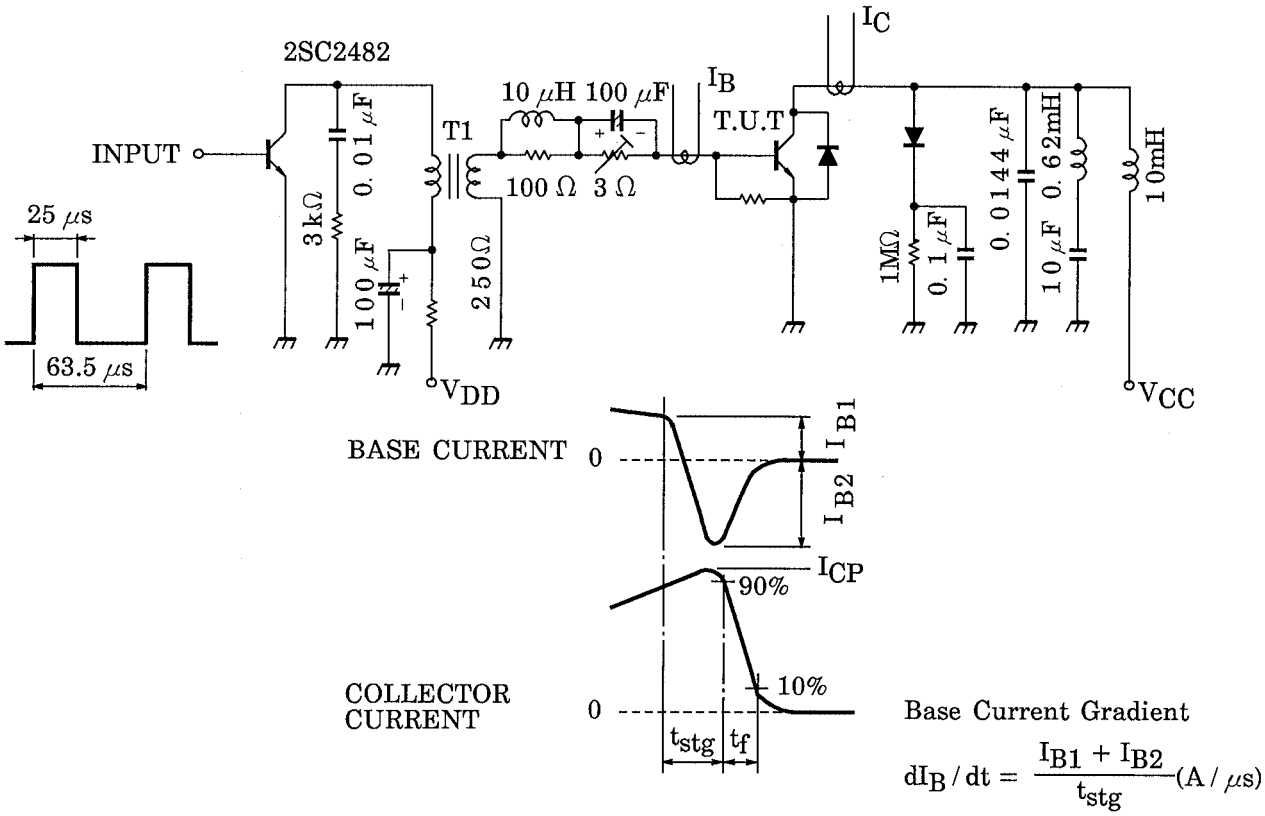
EQUIVALENT CIRCUIT



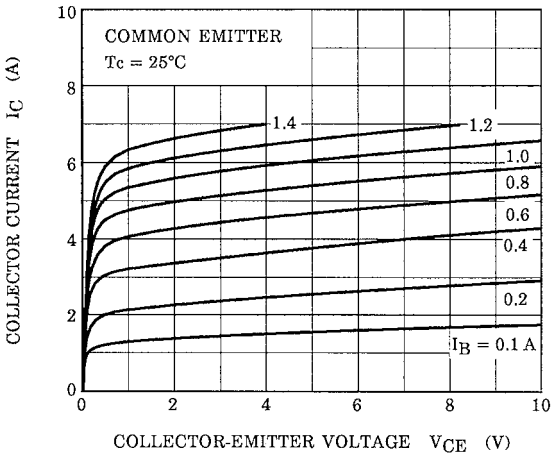
ELECTRICAL CHARACTERISTICS (Tc = 25°C)

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	66	—	200	mA
Emitter−Base Breakdown Voltage		$V_{(BR)\ EBO}$	I_C = 400 mA, I_B = 0	5	—	—	V
DC Current Gain		$h_{FE\ (1)}$	V_{CE} = 5 V, I_C = 1 A	8	—	28	—
		$h_{FE\ (2)}$	V_{CE} = 5 V, I_C = 5A	5	—	9	
Collector−Emitter Saturation Voltage		$V_{CE\ (sat)}$	I_C = 5 A, I_B = 1.0 A	—	—	5	V
Base−Emitter Saturation Voltage		$V_{BE\ (sat)}$	I_C = 5 A, I_B = 1.0 A	—	1.0	1.3	V
Forward Voltage (Damper Diode)		V_F	I_F = 5 A	—	1.6	2.0	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	—	115	—	pF
Switching Time	Storage Time	t_{stg}	I_{CP} = 5 A, I_{B1} (end) = 1.0 A f_H = 15.75 kHz	—	6	9	μs
	Fall Time	t_f		—	0.3	0.6	

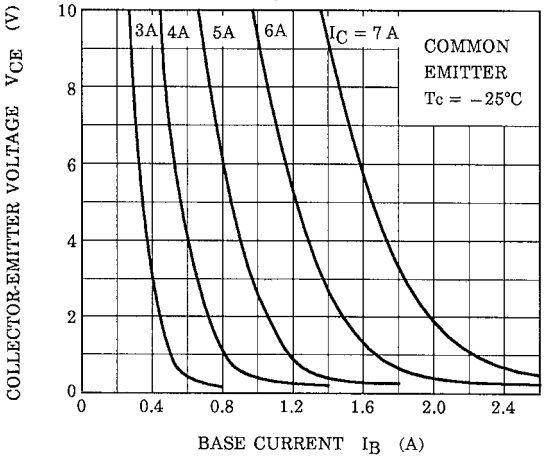
Fig.1 SWITCHING TIME TEST CIRCUIT



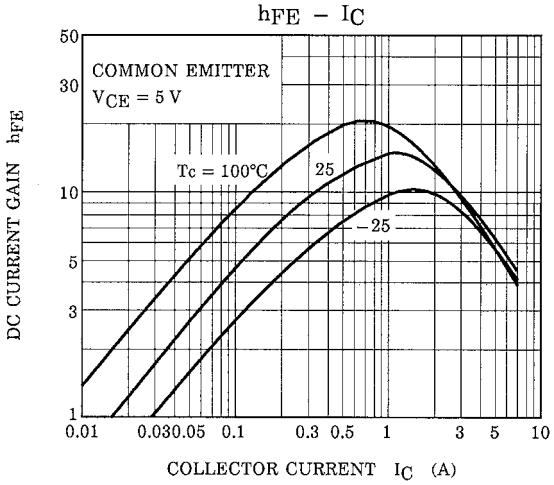
I_C – V_{CE}



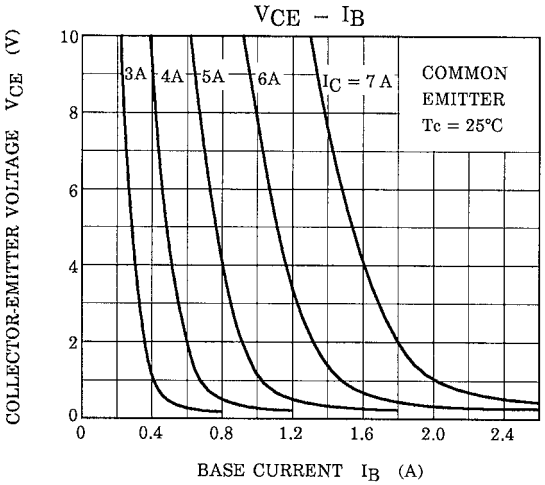
V_{CE} – I_B



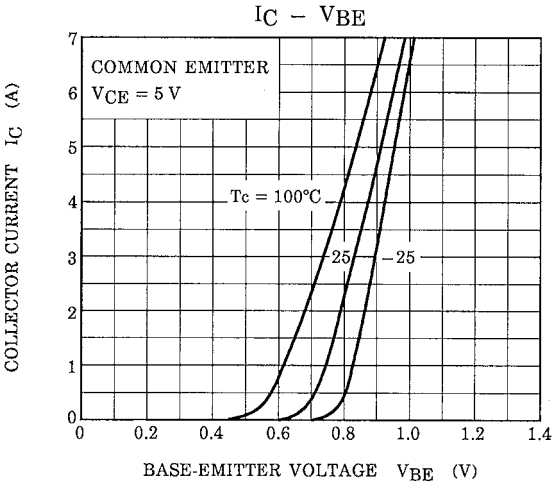
h_{FE} – I_C



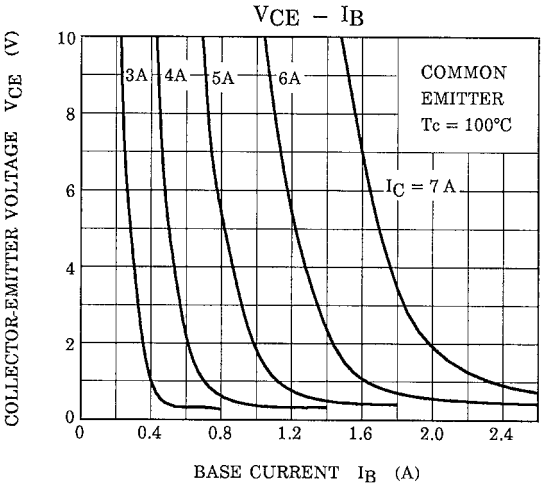
V_{CE} – I_B



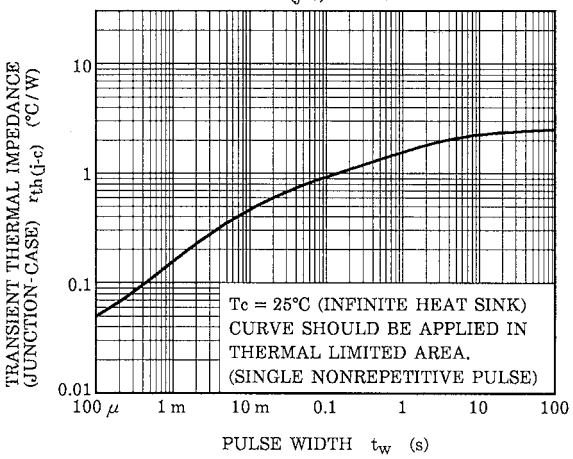
I_C – V_{BE}



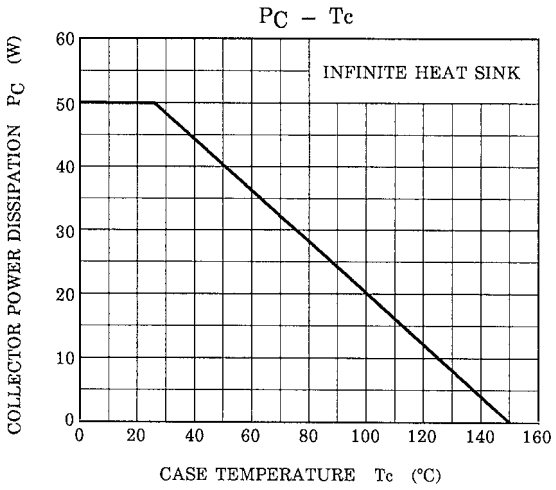
V_{CE} – I_B



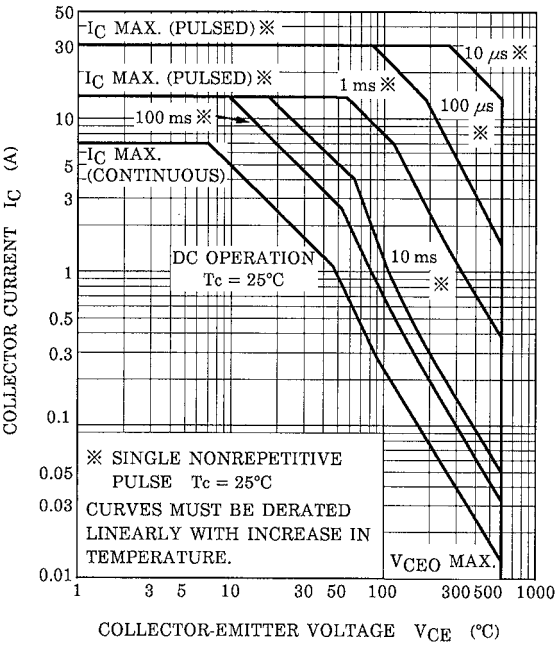
r_{th} (j-c) – t_W



P_C – Tc



SAFE OPERATING AREA



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