

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

S2055N

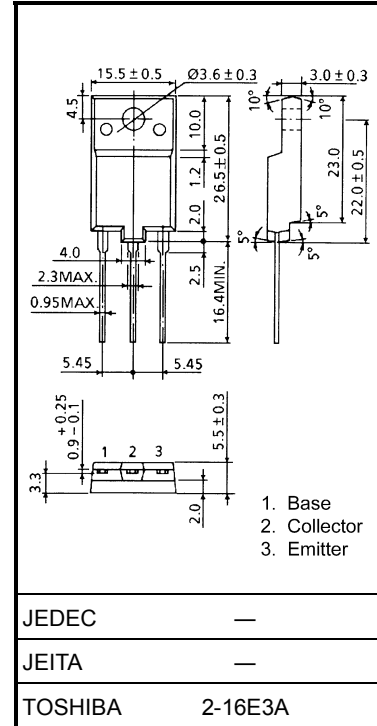
COLOR TV HORIZONTAL OUTPUT APPLICATIONS

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

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

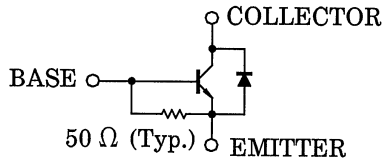
CHARACTERISTICS	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V_{CES}	1500	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	DC	I_C	8 A
	Pulse	I_{CP}	15 A
Base Current	I_B	4	A
Collector Power Dissipation	P_C	50	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~150	$^\circ\text{C}$
Thermal Resistance	$R_{th(j-c)}$	2.5	$^\circ\text{C/W}$

Unit: mm

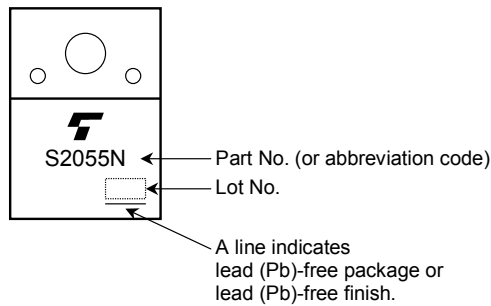


Weight: 5.5 g (typ.)

EQUIVALENT CIRCUIT



MARKING



ELECTRICAL CHARACTERISTICS (Tc = 25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 1500 \text{ V}, V_{BE} = 0$	—	—	1	mA
Emitter-Base Breakdown Voltage	$V_{(BR) EBO}$	$I_E = 0.4 \text{ A}, I_C = 0$	5	—	—	V
DC Current Gain	$h_{FE} (1)$	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ A}$	8	—	25	—
	$h_{FE} (2)$	$V_{CE} = 5 \text{ V}, I_C = 4.5 \text{ A}$	4.5	—	9	
Collector-Emitter Saturation Voltage	$V_{CE} (sat)$	$I_C = 4.5 \text{ A}, I_B = 2 \text{ A}$	—	—	1	V
		$I_C = 4.5 \text{ A}, I_B = 1 \text{ A}$	—	—	5	
Base-Emitter Saturation Voltage	$V_{BE} (sat)$	$I_C = 4.5 \text{ A}, I_B = 1 \text{ A}$	—	0.9	1.2	V
Forward Voltage(Damper Diode)	V_F	$I_F = 6 \text{ A}$	—	1.6	2.0	V
Collector-Emitter Sustain Voltage	$V_{CEX} (sus)$	$L = 40 \text{ mH}, I_C = 0.5 \text{ A}$ $V_{BE} = -1.7 \text{ V}$	700	—	—	V
Transition Frequency	f_T	$V_{CE} = 10 \text{ V}, I_C = 0.1 \text{ A}$	—	2	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	95	—	pF
Switching Time (Fig. 1)	Storage Time	$I_{CP} = 4.5 \text{ A}, I_{B1} (end) = 1 \text{ A}$	—	7.5	11	μs
	Fall Time	$f_H = 15.75 \text{ kHz}$	—	0.3	0.6	

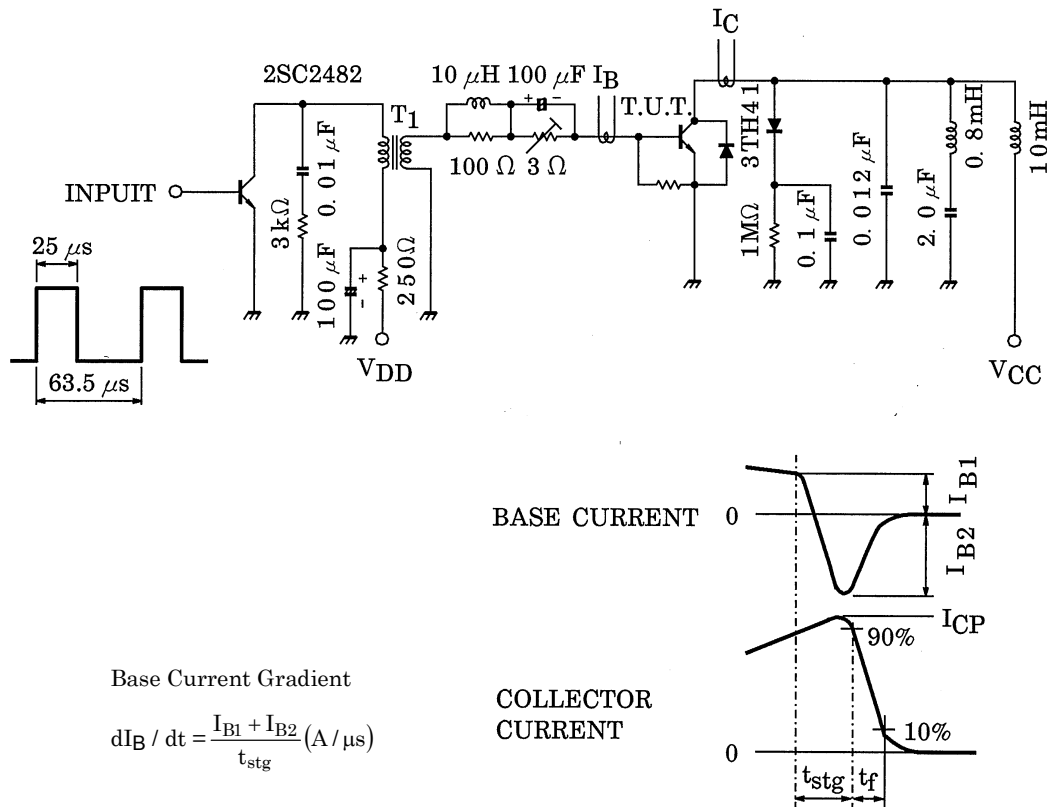
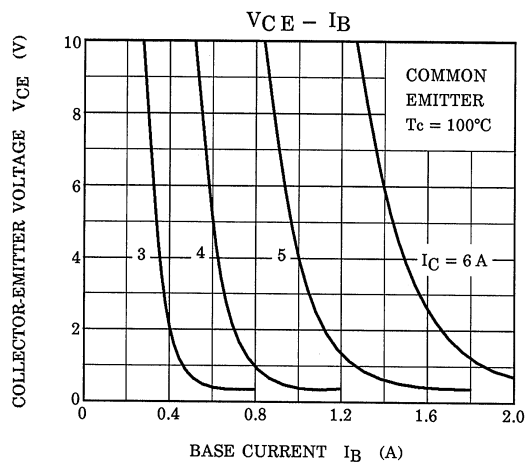
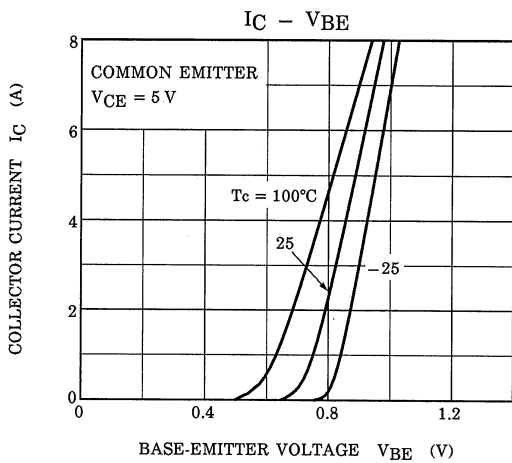
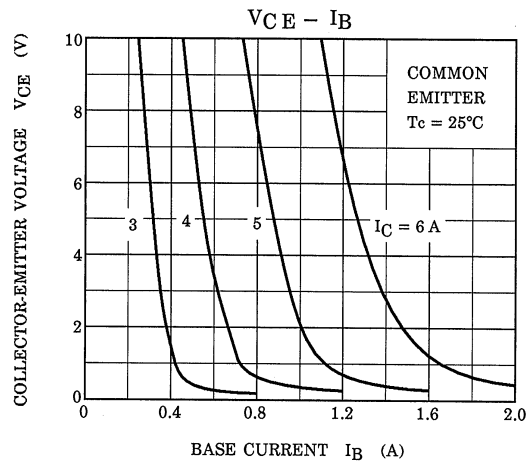
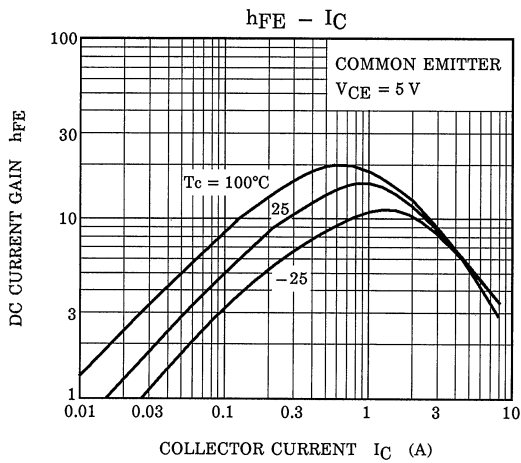
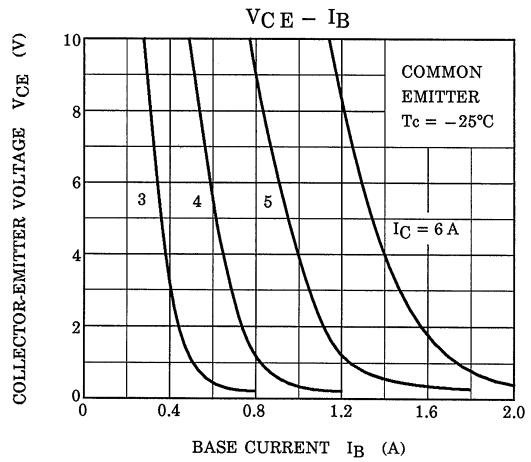
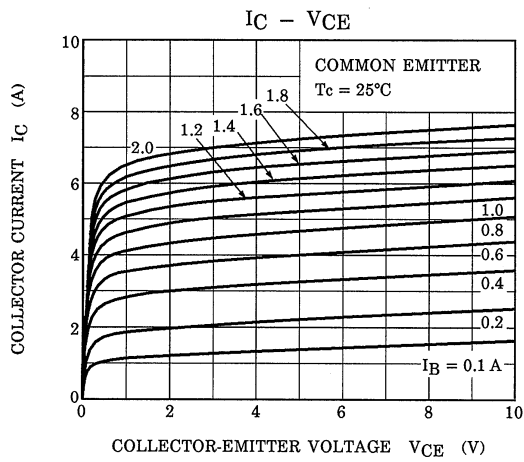
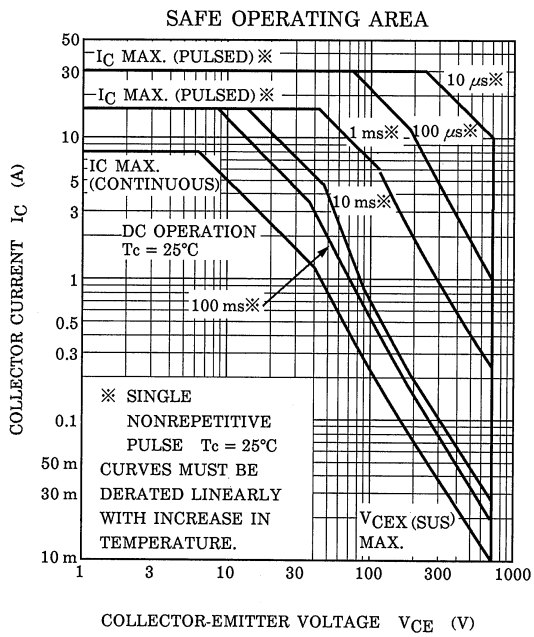
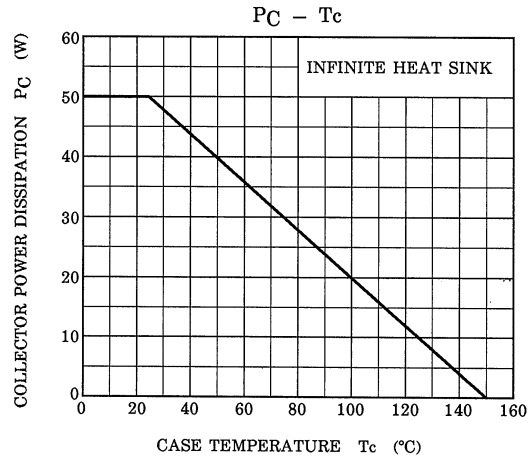
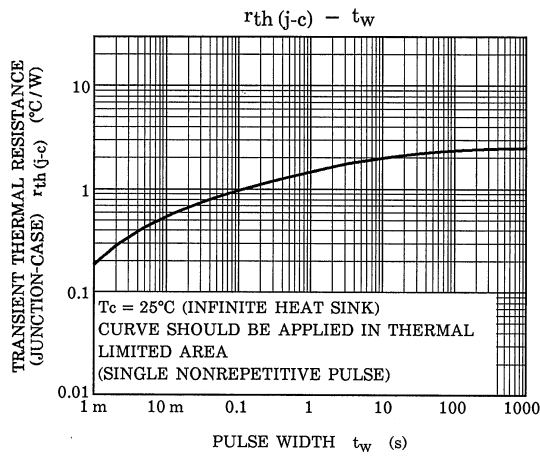


Fig. 1 SWITCHING TIME TEST CIRCUIT





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