

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

# S2055N

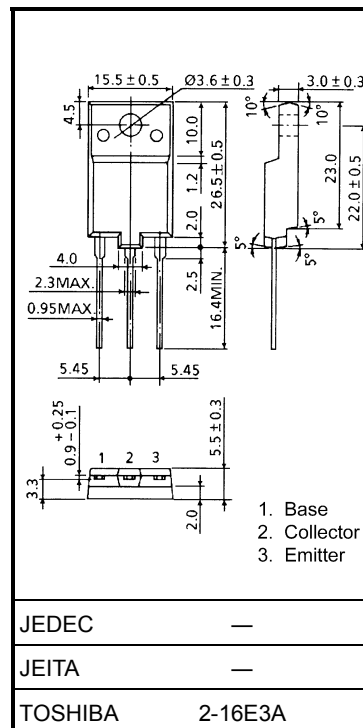
## COLOR TV HORIZONTAL OUTPUT APPLICATIONS

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

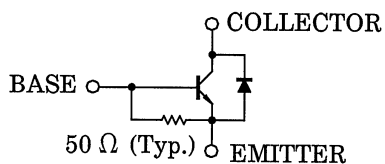
CHARACTERISTICS	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	$V_{CES}$	1500	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	DC	$I_C$	8
	Pulse	$I_{CP}$	15
Base Current	$I_B$	4	A
Collector Power Dissipation	$P_C$	50	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$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

Unit: mm

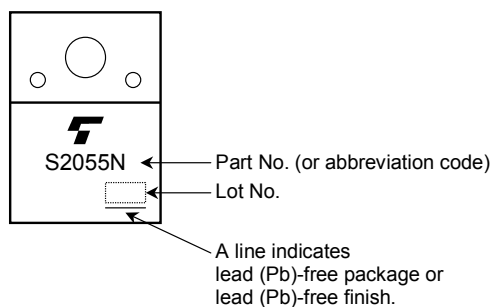


Weight: 5.5 g (typ.)

## EQUIVALENT CIRCUIT

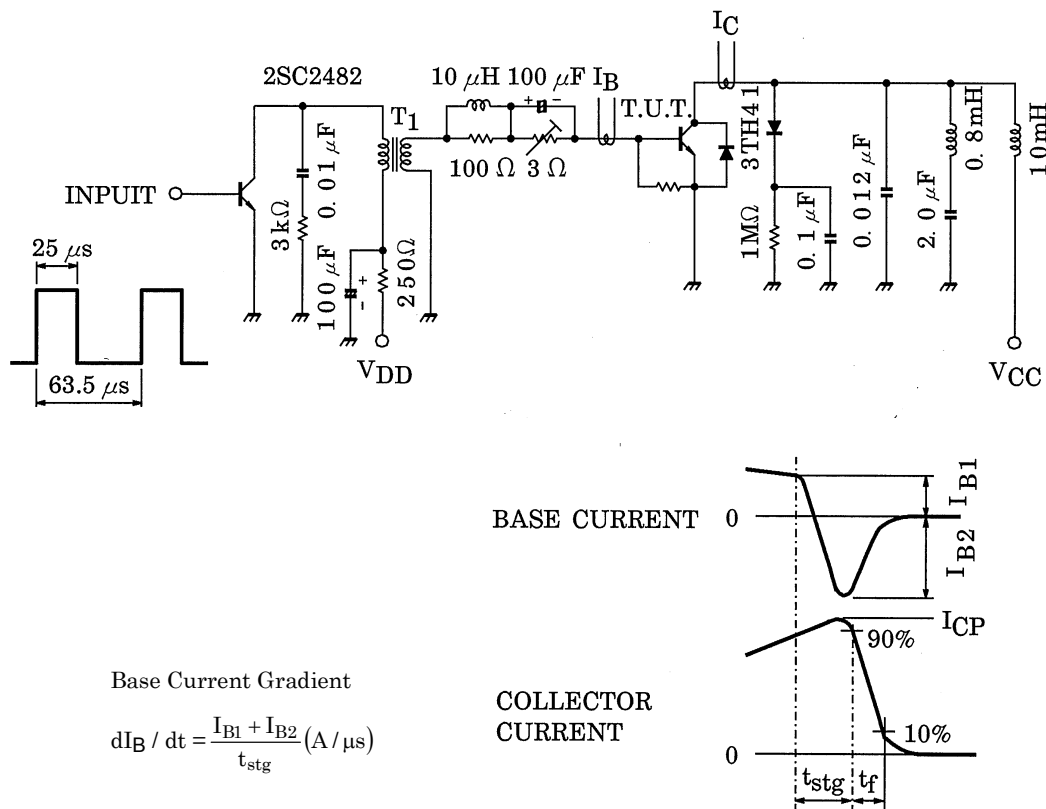


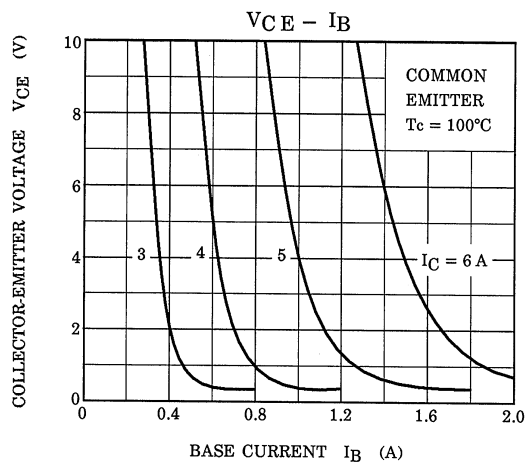
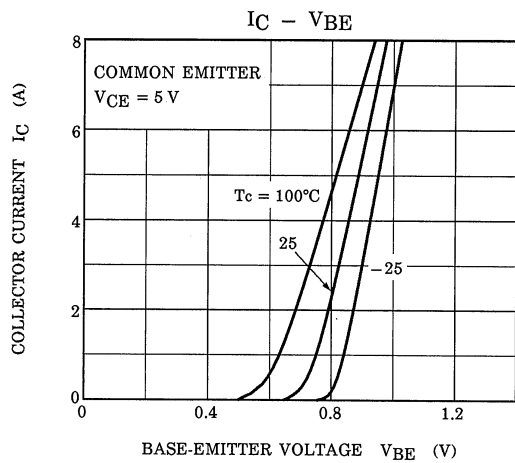
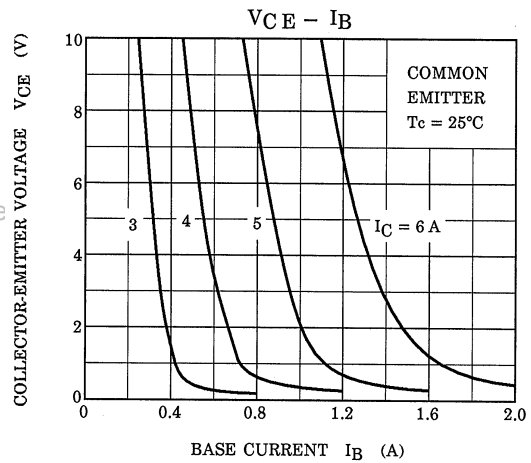
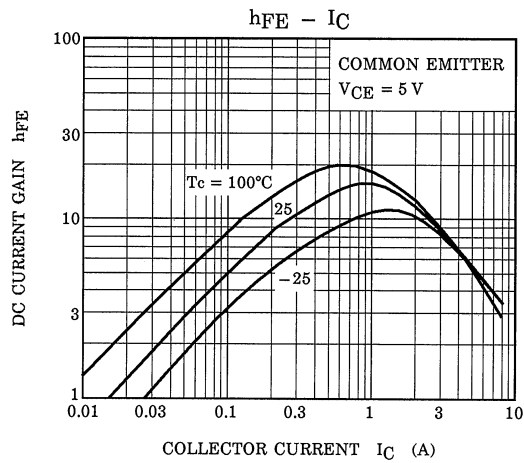
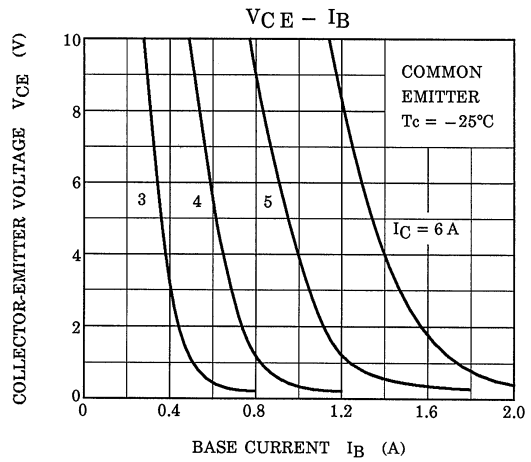
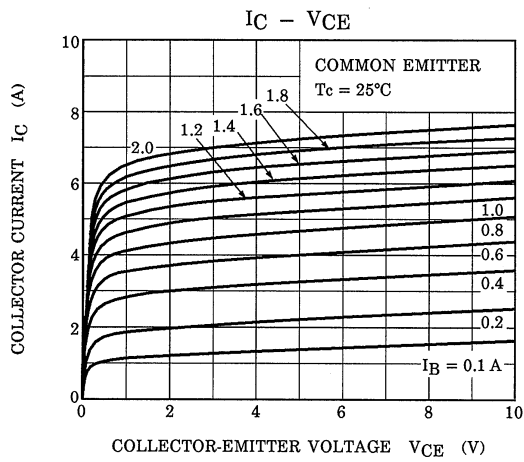
## MARKING



ELECTRICAL CHARACTERISTICS (T<sub>c</sub> = 25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> = 1500 V, V <sub>BE</sub> = 0	—	—	1	mA
Emitter-Base Breakdown Voltage	V <sub>(BR) EBO</sub>	I <sub>E</sub> = 0.4 A, I <sub>C</sub> = 0	5	—	—	V
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 1 A	8	—	25	—
	h <sub>FE</sub> (2)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 4.5 A	4.5	—	9	
Collector-Emitter Saturation Voltage	V <sub>CE (sat)</sub>	I <sub>C</sub> = 4.5 A, I <sub>B</sub> = 2 A	—	—	1	V
		I <sub>C</sub> = 4.5 A, I <sub>B</sub> = 1 A	—	—	5	
Base-Emitter Saturation Voltage	V <sub>BE (sat)</sub>	I <sub>C</sub> = 4.5 A, I <sub>B</sub> = 1 A	—	0.9	1.2	V
Forward Voltage(Damper Diode)	V <sub>F</sub>	I <sub>F</sub> = 6 A	—	1.6	2.0	V
Collector-Emitter Sustain Voltage	V <sub>CEX (sus)</sub>	L = 40 mH, I <sub>C</sub> = 0.5 A V <sub>BE</sub> = -1.7 V	700	—	—	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = 10 V, I <sub>C</sub> = 0.1 A	—	2	—	MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz	—	95	—	pF
Switching Time (Fig. 1)	Storage Time	I <sub>CP</sub> = 4.5 A, I <sub>B1</sub> (end) = 1 A f <sub>H</sub> = 15.75 kHz	—	7.5	11	μs
	Fall Time		—	0.3	0.6	

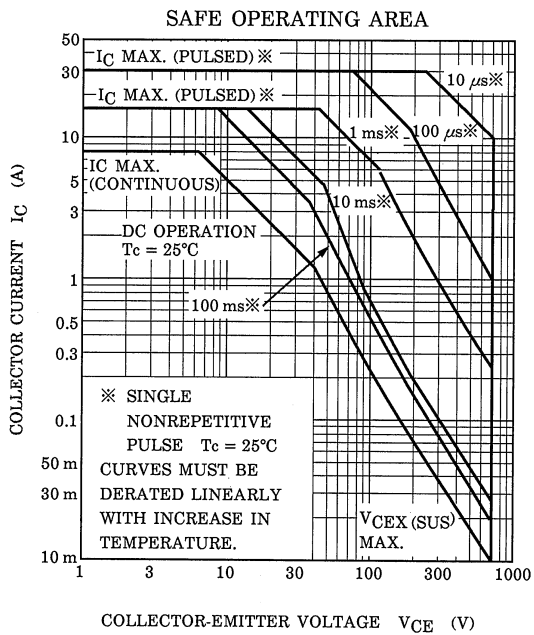
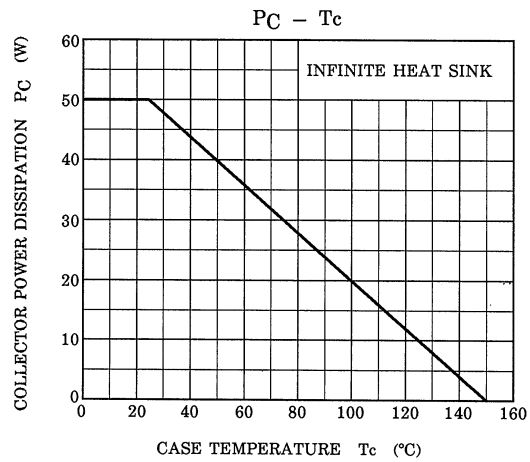
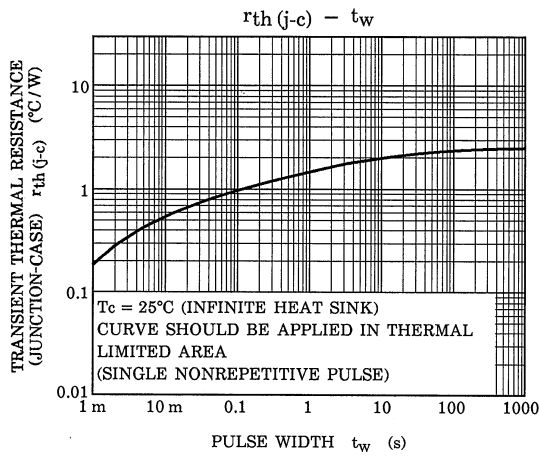




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