

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

## 2SC5589

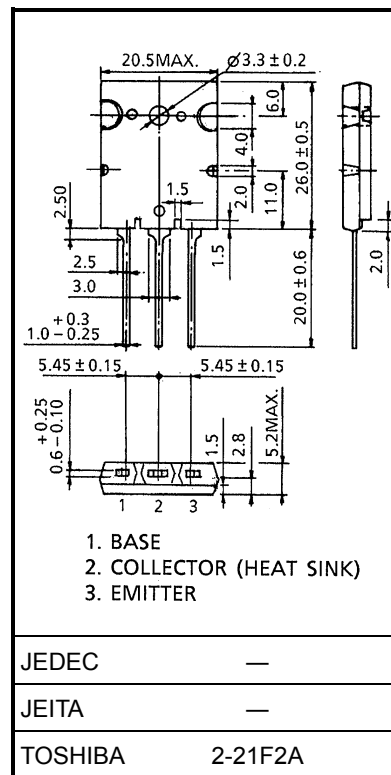
HORIZONTAL DEFLECTION OUTPUT FOR  
HIGH RESOLUTION DISPLAY, COLOR TV  
HIGH SPEED SWITCHING APPLICATIONS

Unit: mm

- High Voltage :  $V_{CBO} = 1500 \text{ V}$
- Low Saturation Voltage :  $V_{CE}(\text{sat}) = 3 \text{ V (Max.)}$
- High Speed :  $t_f(2) = 0.1 \mu\text{s (Typ.)}$

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

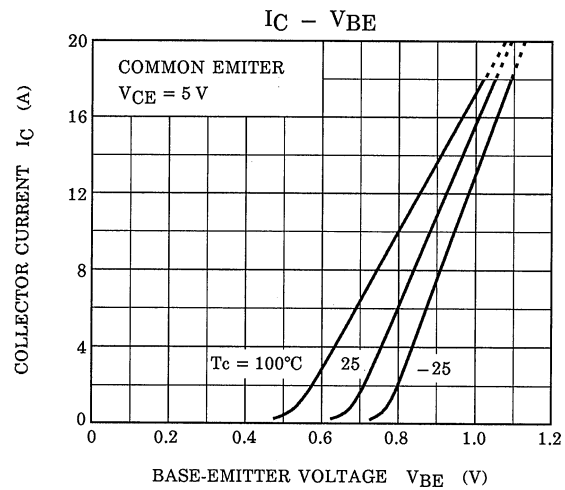
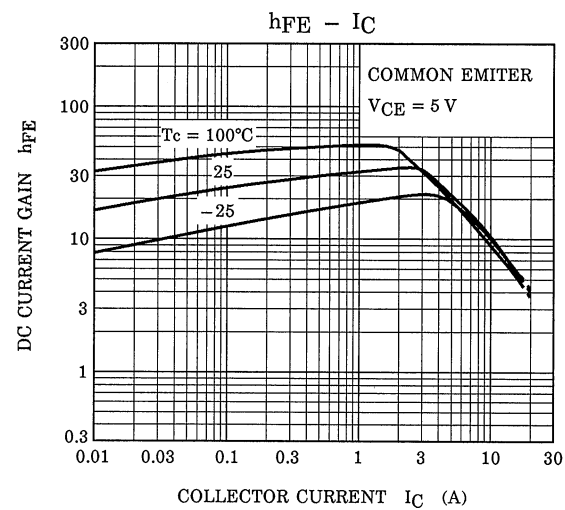
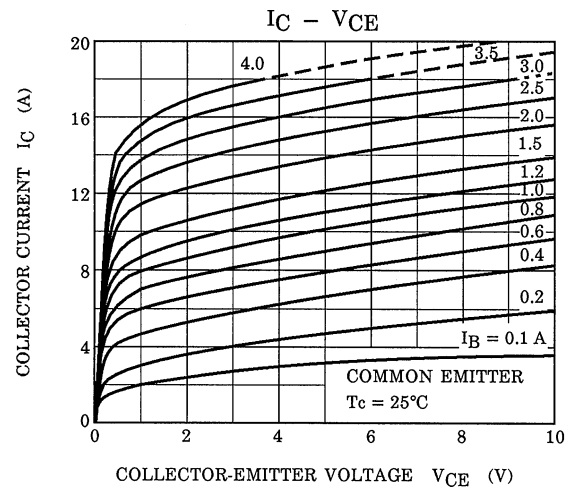
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CBO}$	1500	V
Collector-Emitter Voltage		$V_{CEO}$	750	V
Emitter-Base Voltage		$V_{EBO}$	5	V
Collector Current	DC	$I_C$	18	A
	Pulse	$I_{CP}$	36	
Base Current		$I_B$	9	A
Collector Power Dissipation		$P_C$	200	W
Junction Temperature		$T_j$	150	$^\circ\text{C}$
Storage Temperature Range		$T_{stg}$	-55~150	$^\circ\text{C}$

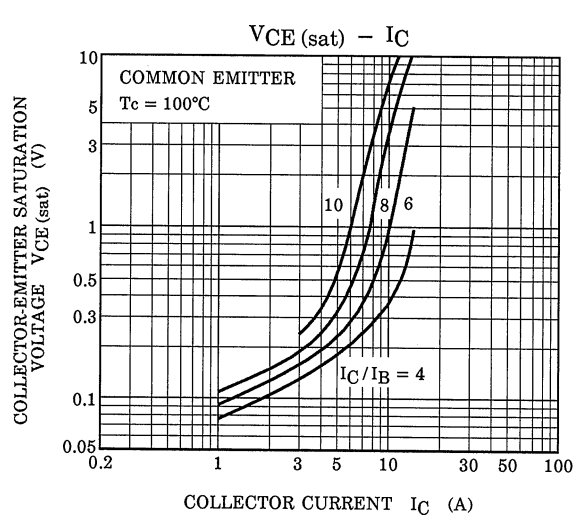
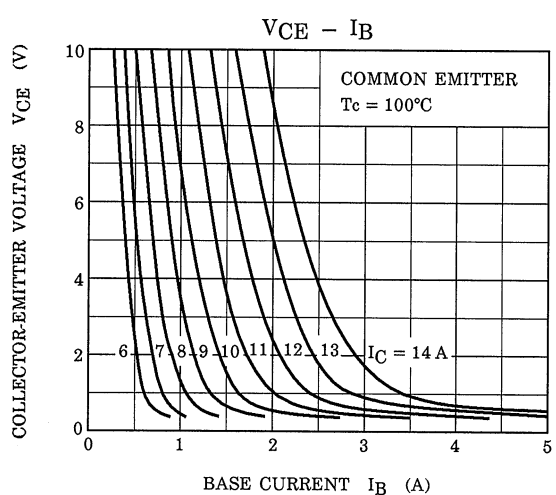
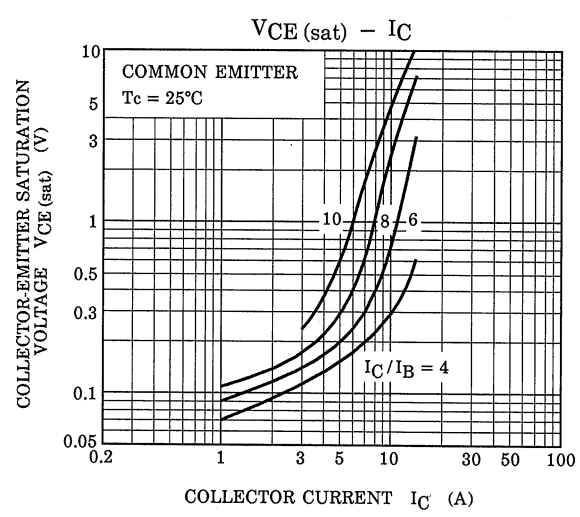
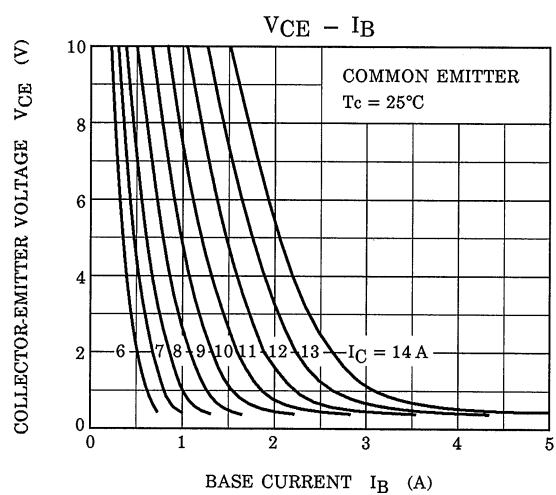
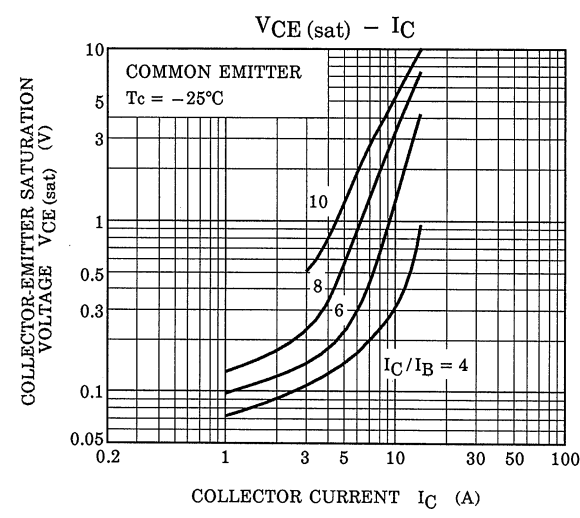
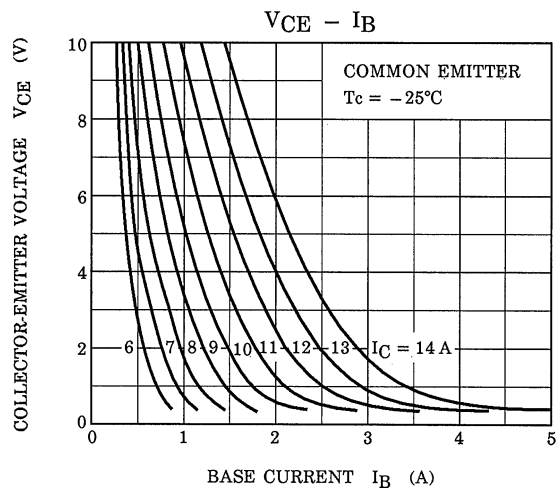


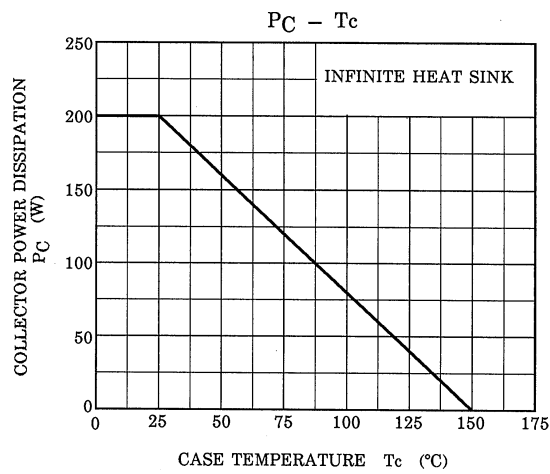
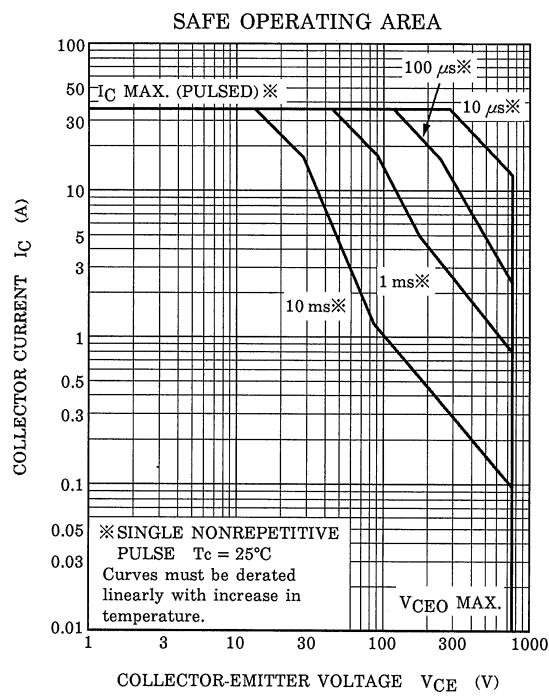
Weight: 9.75 g (typ.)

### ELECTRICAL CHARACTERISTICS ( $T_c = 25^\circ\text{C}$ )

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		$I_{EBO}$	$V_{EB} = 5 \text{ V}, I_C = 0$	—	—	100	$\mu\text{A}$
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = 10 \text{ mA}, I_B = 0$	750	—	—	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = 5 \text{ V}, I_C = 2 \text{ A}$	22	—	48	—
		$h_{FE(2)}$	$V_{CE} = 5 \text{ V}, I_C = 7 \text{ A}$	9	—	18	
		$h_{FE(3)}$	$V_{CE} = 5 \text{ V}, I_C = 14 \text{ A}$	5	—	8	
Collector-Emitter Saturation Voltage		$V_{CE}(\text{sat})$	$I_C = 14 \text{ A}, I_B = 3.5 \text{ A}$	—	—	3	V
Base-Emitter Saturation Voltage		$V_{BE}(\text{sat})$	$I_C = 14 \text{ A}, I_B = 3.5 \text{ A}$	—	1.0	1.5	V
Transition Frequency		$f_T$	$V_{CE} = 10 \text{ V}, I_C = 0.1 \text{ A}$	—	2	—	MHz
Collector Output Capacitance		$C_{ob}$	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	240	—	pF
Switching Time	Storage Time	$t_{stg(1)}$	$I_{CP} = 9 \text{ A}, I_{B1}(\text{end}) = 1.3 \text{ A}$	—	2.7	3	$\mu\text{s}$
	Fall Time	$t_f(1)$	$f_H = 64 \text{ kHz}$	—	0.2	0.3	
	Storage Time	$t_{stg(2)}$	$I_{CP} = 7.5 \text{ A}, I_{B1}(\text{end}) = 1.1 \text{ A}$	—	1.8	2	$\mu\text{s}$
	Fall Time	$t_f(2)$	$f_H = 100 \text{ kHz}$	—	0.1	0.15	







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