

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

# 2SC5589

HORIZONTAL DEFLECTION OUTPUT FOR SUPER HIGH RESOLUTION DISPLAY, COLOR TV

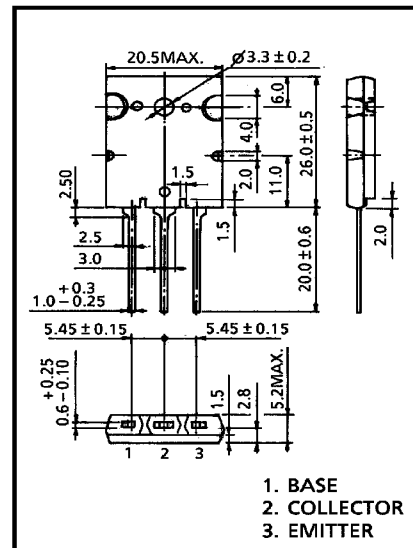
HIGH SPEED SWITCHING APPLICATIONS

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

**MAXIMUM RATINGS (Ta = 25°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
	Pulse	$I_{CP}$	36
Base Current	$I_B$	9	A
Collector Power Dissipation (Tc = 25°C)	$P_C$	200	W
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55~150	°C

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-21F2A

Weight : 9.75 g (Typ.)

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## ELECTRICAL CHARACTERISTICS (Ta = 25°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	$V_{CE} (sat)$	$I_C = 14\text{ A}, I_B = 3.5\text{ A}$	—	—	3	V	
Base-Emitter Saturation Voltage	$V_{BE} (sat)$	$I_C = 14\text{ A}, I_B = 3.5\text{ A}$	—	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	$t_{stg} (1)$	$I_{CP} = 9\text{ A}, I_{B1} (end) = 1.3\text{ A}$		—	2.7	$\mu\text{s}$
	Fall Time	$t_f (1)$	$f_H = 64\text{ kHz}$		—	0.2	
	Storage Time	$t_{stg} (2)$	$I_{CP} = 7.5\text{ A}, I_{B1} (end) = 1.1\text{ A}$		—	1.8	$\mu\text{s}$
	Fall Time	$t_f (2)$	$f_H = 100\text{ kHz}$		—	0.1	

