

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

2 S C 5 4 4 6

HORIZONTAL DEFLECTION OUTPUT FOR SUPER HIGH RESOLUTION
DISPLAY, COLOR TV FOR MULTI-MEDIA & HDTV

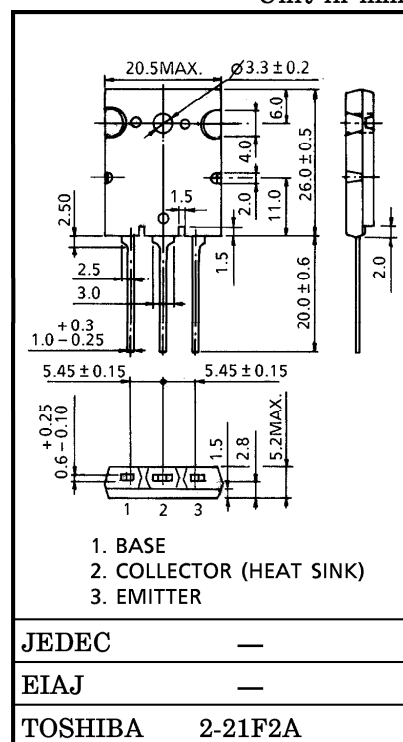
Unit in mm

HIGH SPEED SWITCHING APPLICATIONS

- High Voltage : $V_{CBO} = 1700 \text{ V}$
- 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_{CB0}	1700	V
Collector-Emitter Voltage		V_{CEO}	600	V
Emitter-Base Voltage		V_{EB0}	5	V
Collector Current	DC	I_C	18	A
	Pulse	I_{CP}	36	
Base Current		I_B	9	A
Collector Power Dissipation ($T_c = 25^\circ\text{C}$)		P_C	200	W
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	$-55\sim 150$	$^\circ\text{C}$



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}	$V_{CB} = 1700 \text{ V}, I_E = 0$	—	—	1	mA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$	—	—	10	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = 10 \text{ mA}, I_B = 0$	600	—	—	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = 5 \text{ V}, I_C = 2 \text{ A}$	10	—	40	
		$h_{FE(2)}$	$V_{CE} = 5 \text{ V}, I_C = 9 \text{ A}$	6	—	13	
		$h_{FE(3)}$	$V_{CE} = 5 \text{ V}, I_C = 14 \text{ A}$	4	—	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	$V_{CE} = 10 \text{ V}, I_C = 0.1 \text{ A}$	—	1.7	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	290	—	pF
Switching Time	Storage Time	$t_{stg(1)}$	$I_{CP} = 9 \text{ A}, I_{B1}(\text{end}) = 1.5 \text{ A}$	—	2.5	3.5	μs
	Fall Time	$t_f(1)$	$f_H = 64 \text{ kHz}$	—	0.12	0.3	
	Storage Time	$t_{stg(2)}$	$I_{CP} = 7 \text{ A}, I_{B1}(\text{end}) = 1.25 \text{ A}$	—	2.1	2.3	μs
	Fall Time	$t_f(2)$	$f_H = 100 \text{ kHz}$	—	0.10	0.15	

