

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

# 2SC5445

HORIZONTAL DEFLECTION OUTPUT FOR SUPER HIGH RESOLUTION DISPLAY, COLOR TV

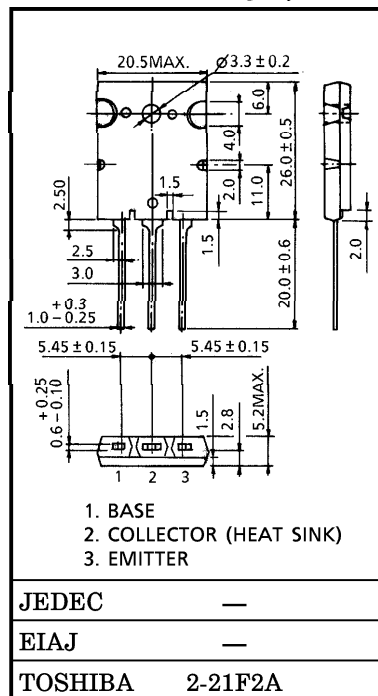
HIGH SPEED SWITCHING APPLICATIONS

- High Voltage :  $V_{CB0} = 1500\text{ V}$
- Low Saturation Voltage :  $V_{CE(sat)} = 3\text{ V (Max.)}$
- High Speed :  $t_f(2) = 0.1\ \mu\text{s (Typ.)}$

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CB0}$	1500	V
Collector-Emitter Voltage		$V_{CEO}$	600	V
Emitter-Base Voltage		$V_{EBO}$	5	V
Collector Current	DC	$I_C$	20	A
	Pulse	$I_{CP}$	40	
Base Current		$I_B$	10	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		$T_{stg}$	-55~150	$^\circ\text{C}$

Unit in mm



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	$I_{EBO}$	$V_{EB} = 5 \text{ V}, I_C = 0$	—	—	10	$\mu\text{A}$	
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		
	$h_{FE(2)}$	$V_{CE} = 5 \text{ V}, I_C = 10 \text{ A}$	7	—	14.5		
	$h_{FE(3)}$	$V_{CE} = 5 \text{ V}, I_C = 15 \text{ A}$	4.5	—	8.5		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 15 \text{ A}, I_B = 3.75 \text{ A}$	—	—	3	V	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 15 \text{ A}, I_B = 3.75 \text{ A}$	—	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	$t_{stg(1)}$	$I_{CP} = 10 \text{ A}, I_{B1}(\text{end}) = 1.7 \text{ A}$ $f_H = 64 \text{ kHz}$	—	2.5	3.5	$\mu\text{s}$
	Fall Time	$t_f(1)$		—	0.12	0.3	
	Storage Time	$t_{stg(2)}$	$I_{CP} = 8 \text{ A}, I_{B1}(\text{end}) = 1.4 \text{ A}$ $f_H = 100 \text{ kHz}$	—	2.0	2.2	$\mu\text{s}$
	Fall Time	$t_f(2)$		—	0.10	0.15	

