

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

# 2SC5331

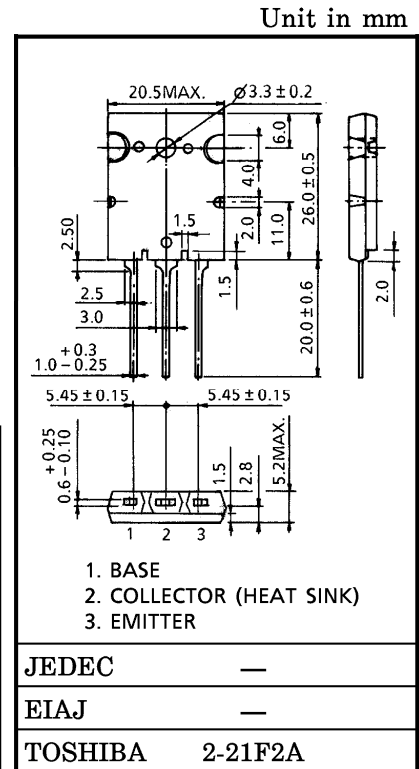
HORIZONTAL DEFLECTION OUTPUT FOR HIGH RESOLUTION DISPLAY, COLOR TV

HIGH SPEED SWITCHING APPLICATIONS

- High Voltage :  $V_{CB0} = 1500\text{ V}$
- Low Saturation Voltage :  $V_{CE(sat)} = 3\text{ V (Max.)}$
- High Speed :  $t_f = 0.12\ \mu\text{s (Typ.)}$

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	$I_C$	15
	Pulse	$I_{CP}$	30
Base Current	$I_B$	7.5	A
Collector Power Dissipation ( $T_c = 25^\circ\text{C}$ )	$P_C$	180	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 ( $T_a = 25^\circ\text{C}$ )

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	$I_{EBO}$	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	10	$\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{ mA}, I_B = 0$	600	—	—	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	10	—	38	—
	$h_{FE(2)}$	$V_{CE} = 5\text{ V}, I_C = 9\text{ A}$	4.2	—	7.2	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 9\text{ A}, I_B = 2.25\text{ A}$	—	—	3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 9\text{ A}, I_B = 2.25\text{ A}$	—	1.0	1.4	V
Transition Frequency	$f_T$	$V_{CE} = 10\text{ V}, I_E = 0.1\text{ A}$	—	1.7	—	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	160	—	pF
Switching Time	Storage Time	$I_{CP} = 8\text{ A}, I_{B1}(\text{end}) = 1.6\text{ A}$	—	3.0	4.0	$\mu\text{s}$
	Fall Time		—	0.12	0.3	

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