

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (PCT PROCESS)

# 2SD1221

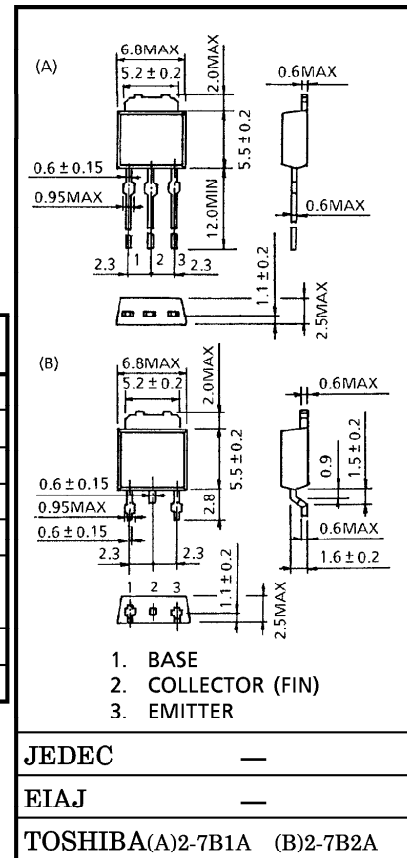
AUDIO FREQUENCY POWER AMPLIFIER APPLICATION.

Unit in mm

- Low Collector Saturation Voltage  
:  $V_{CE(sat)}=0.4V$  (Typ.)
- High Power Dissipation :  $P_C=20W$
- Complementary to 2SB906

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CB0}$	60	V
Collector-Emitter Voltage		$V_{CEO}$	60	V
Emitter-Base Voltage		$V_{EB0}$	7	V
Collector Current		$I_C$	3	A
Base Current		$I_B$	0.5	A
Collector Power Dissipation	$T_a = 25^\circ C$	$P_C$	1.0	W
	$T_c = 25^\circ C$		20	
Junction Temperature		$T_j$	150	$^\circ C$
Storage Temperature Range		$T_{stg}$	-55~150	$^\circ C$



Weight : 0.36g (Typ.)

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	ICBO	V <sub>CB</sub> = 60V, I <sub>E</sub> = 0	—	—	100	μA
Emitter Cut-off Current	IEBO	V <sub>EB</sub> = 7V, I <sub>C</sub> = 0	—	—	100	μA
Collector-Emitter Breakdown Voltage	V (BR) CEO	I <sub>C</sub> = 50mA, I <sub>B</sub> = 0	60	—	—	V
DC Current Gain	h <sub>FE</sub> (1) (Note)	V <sub>CE</sub> = 5V, I <sub>C</sub> = 0.5A	60	—	300	
	h <sub>FE</sub> (2)	V <sub>CE</sub> = 5V, I <sub>C</sub> = 3A	20	—	—	
Collector-Emitter Saturation Voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> = 3A, I <sub>B</sub> = 0.3A	—	0.4	1.0	V
Base-Emitter Voltage	V <sub>BE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 0.5A	—	0.7	1.0	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 0.5A	—	3.0	—	MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz	—	70	—	pF
Switching Time	Turn-on Time	t <sub>on</sub>		—	0.8	μs
	Storage Time	t <sub>stg</sub>		—	1.5	
	Fall Time	t <sub>f</sub>		I <sub>B1</sub> = -I <sub>B2</sub> = 0.2A, DUTY CYCLE ≤ 1%	—	

Note : h<sub>FE</sub> (1) Classification    O : 60~120,    Y : 100~200,    GR : 150~300

