

TOSHIBA Transistor Silicon NPN Diffused Type (PCT process)

2SD1221

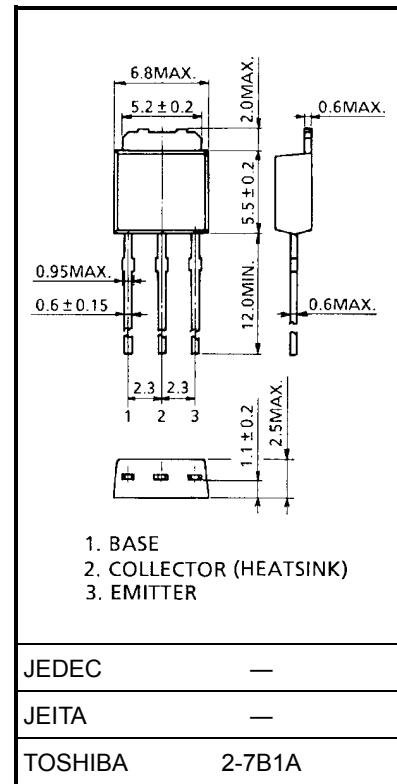
Audio Frequency Power Amplifier Application

Unit: mm

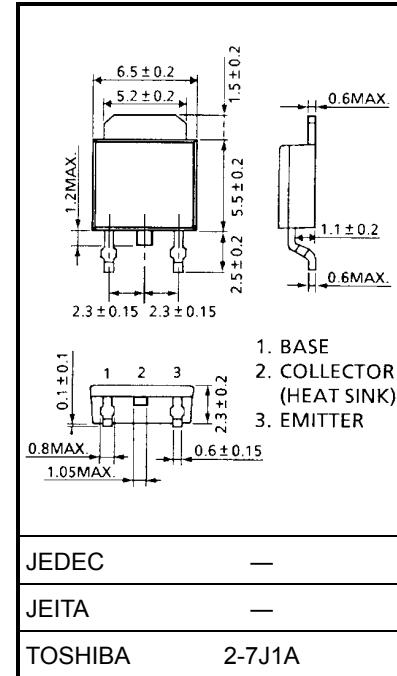
- Low collector saturation voltage
: $V_{CE}(\text{sat}) = 4.0 \text{ V}$ (typ.) ($I_C = 3 \text{ A}$, $I_B = 0.3 \text{ A}$)
- High power dissipation: $P_C = 20 \text{ W}$ ($T_c = 25^\circ\text{C}$)
- Complementary to 2SB906

Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	60	V
Emitter-base voltage	V_{EBO}	7	V
Collector current	I_C	3	A
Base current	I_B	0.5	A
Collector power dissipation	P_C	1.0	W
		20	
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-55 to 150	°C

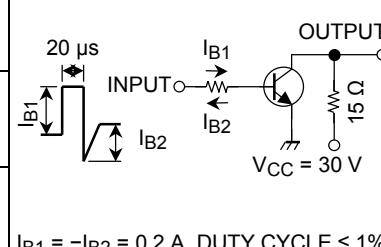


Weight: 0.36 g (typ.)



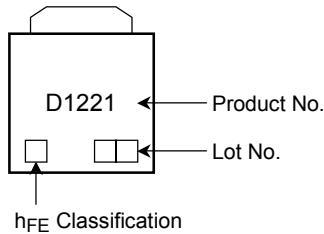
Weight: 0.36 g (typ.)

Electrical Characteristics ($T_a = 25^\circ C$)

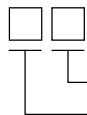
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 60 V, I_E = 0$	—	—	100	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 7 V, I_C = 0$	—	—	100	μA
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 50 mA, I_B = 0$	60	—	—	V
DC current gain	h_{FE} (1) (Note)	$V_{CE} = 5 V, I_C = 0.5 A$	60	—	300	
	h_{FE} (2)	$V_{CE} = 5 V, I_C = 3 A$	20	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3 A, I_B = 0.3 A$	—	0.4	1.0	V
Base-emitter voltage	V_{BE}	$V_{CE} = 5 V, I_C = 0.5 A$	—	0.7	1.0	V
Transition frequency	f_T	$V_{CE} = 5 V, I_C = 0.5 A$	—	3.0	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10 V, I_E = 0, f = 1 MHz$	—	70	—	pF
Switching time	Turn-on time	t_{on}		—	0.8	—
	Storage time	t_{stg}		—	1.5	—
	Fall time	t_f		—	0.8	—

Note: h_{FE} classification O: 60 to 120, Y: 100 to 200, GR: 150 to 300

Marking

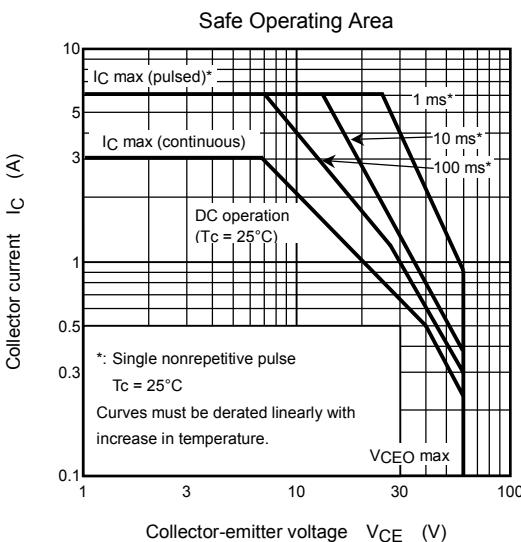
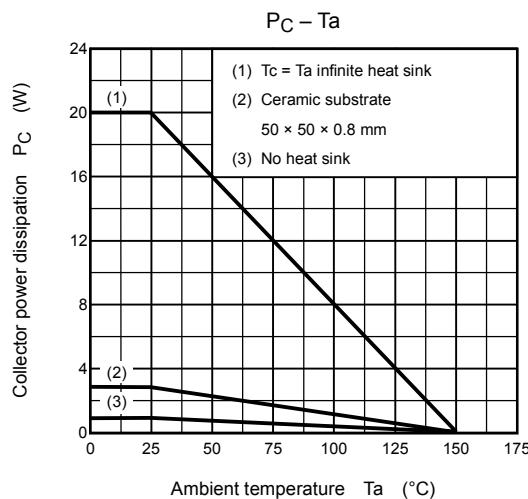
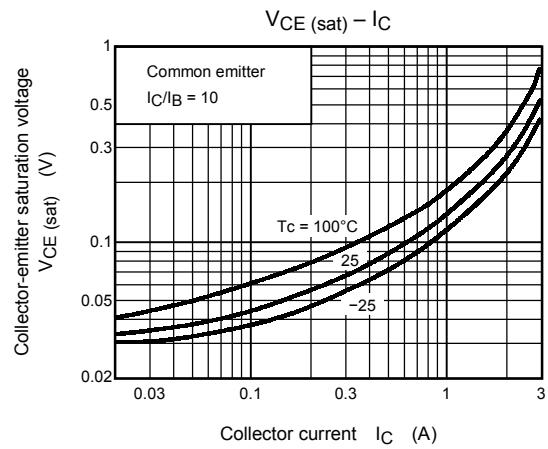
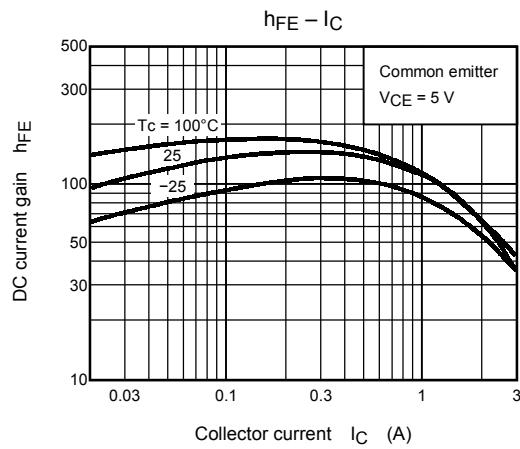
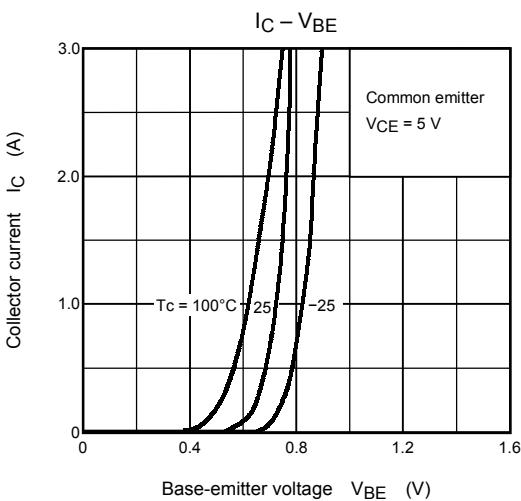
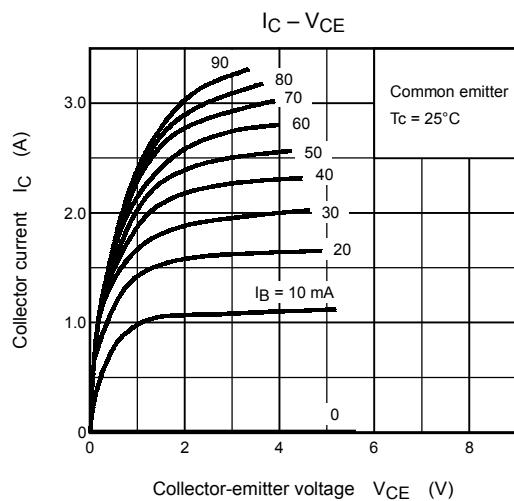


Explanation of Lot No.



Month of manufacture: January to December are denoted by letters A to L respectively.

Year of manufacture: last decimal digit of the year of manufacture



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