

TOSHIBA Transistor Silicon NPN Diffused Type (PCT process)

2SD1221

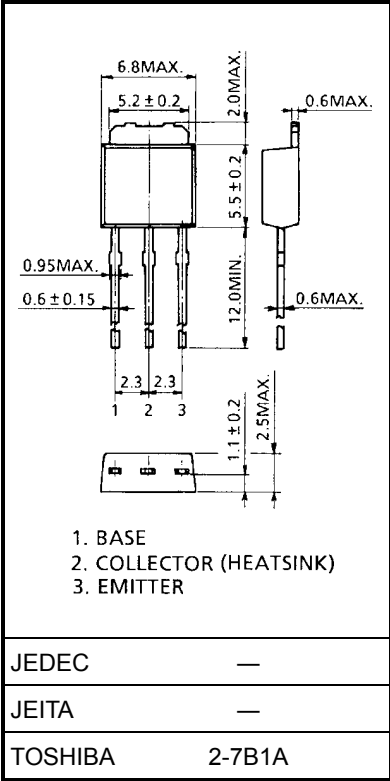
Audio Frequency Power Amplifier Application

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

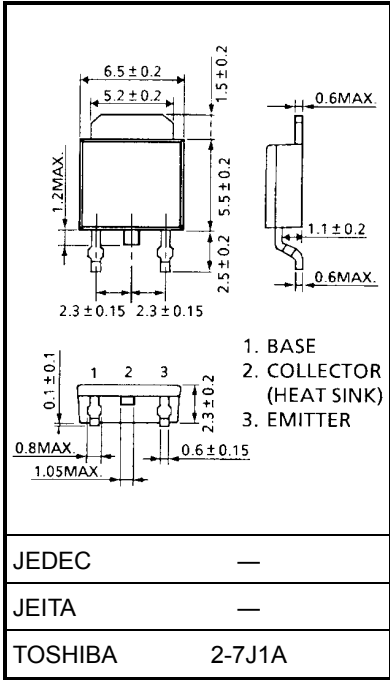
Maximum Ratings (Ta = 25°C)

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	Ta = 25°C	P_C	1.0	W
	Tc = 25°C		20	
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-55 to 150	°C

Unit: mm

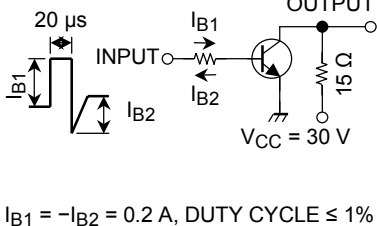


Weight: 0.36 g (typ.)



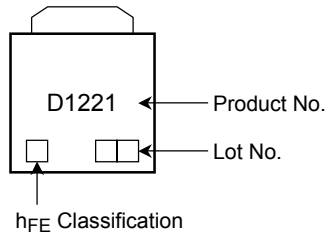
Weight: 0.36 g (typ.)

Electrical Characteristics (Ta = 25°C)

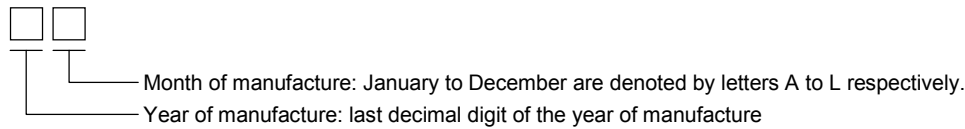
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		ICBO	V _{CB} = 60 V, I _E = 0	—	—	100	μA
Emitter cut-off current		IEBO	V _{EB} = 7 V, I _C = 0	—	—	100	μA
Collector-emitter breakdown voltage		V _(BR) CEO	I _C = 50 mA, I _B = 0	60	—	—	V
DC current gain		h _{FE} (1) (Note)	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}	 I _{B1} = -I _{B2} = 0.2 A, DUTY CYCLE ≤ 1%	—	0.8	—	μs
	Storage time	t _{stg}		—	1.5	—	
	Fall time	t _f		—	0.8	—	

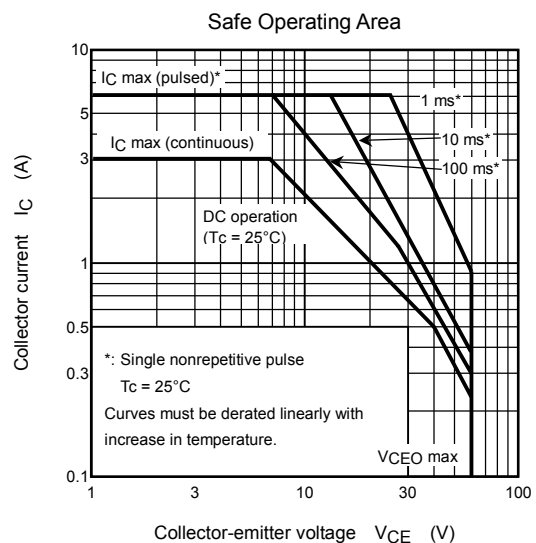
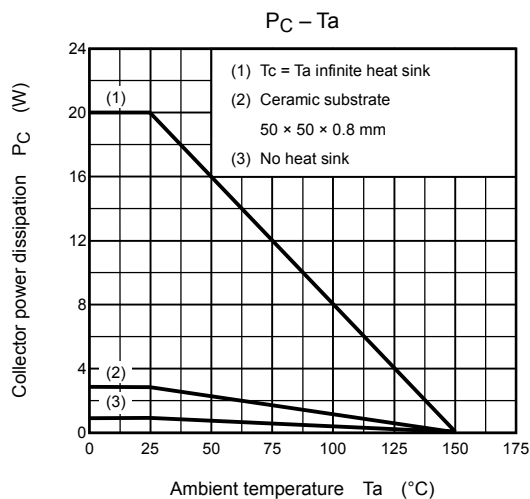
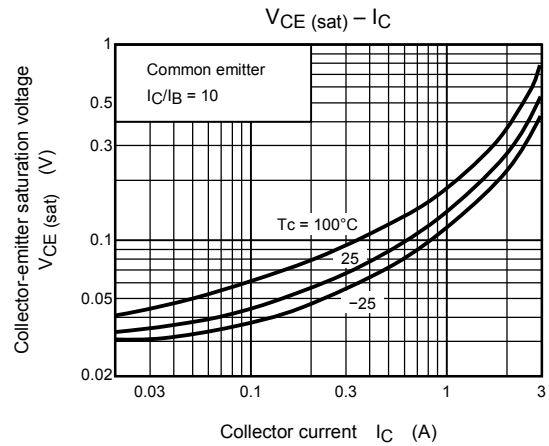
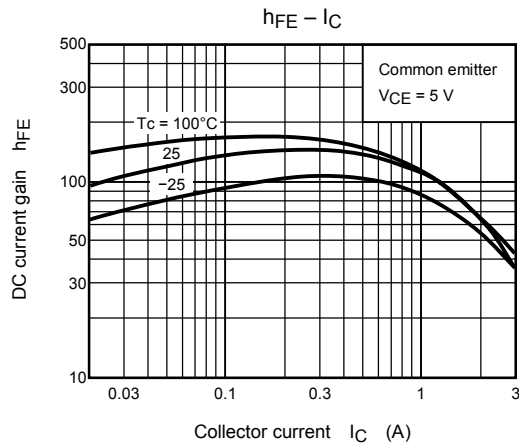
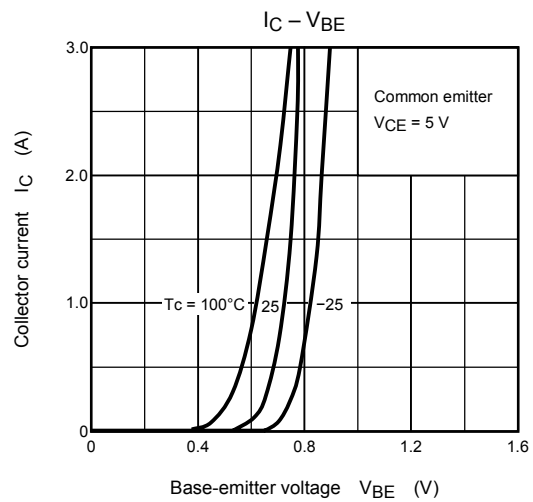
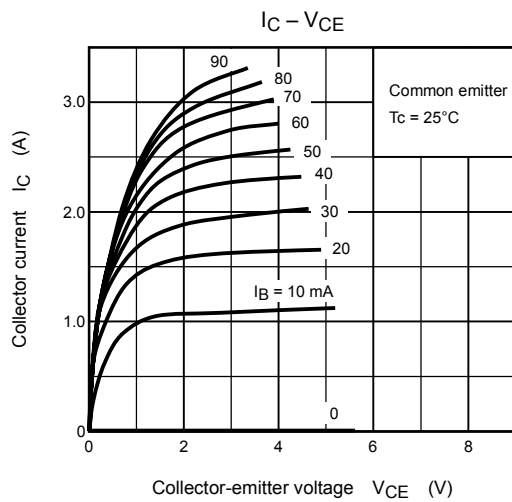
Note: h_{FE} classification O: 60 to 120, Y: 100 to 200, GR: 150 to 300

Marking



Explanation of Lot No.





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