

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process) (darlington)

2SD1223

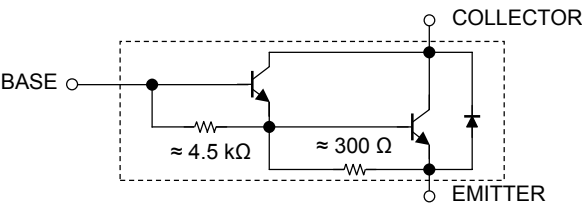
Switching Applications
Hammer Drive, Pulse Motor Drive Applications
Power Amplifier Applications

- High DC current gain: $h_{FE} = 2000$ (min) ($V_{CE} = 2\text{ V}$, $I_C = 1\text{ A}$)
- Low saturation voltage: $V_{CE(sat)} = 1.5\text{ V}$ (max) ($I_C = 3\text{ A}$)
- Complementary to 2SB908.

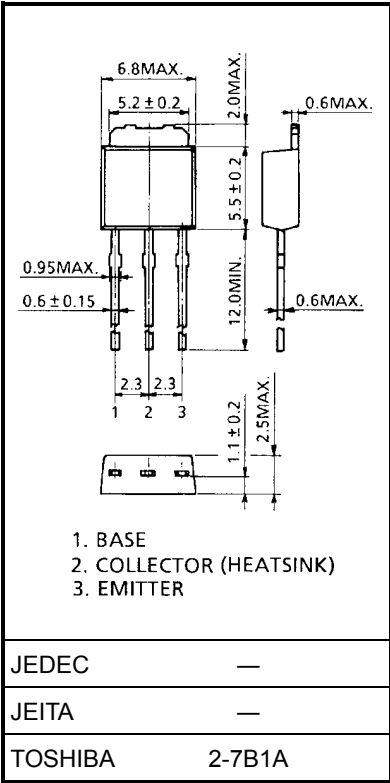
Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	100	V
Collector-emitter voltage		V_{CEO}	80	V
Emitter-base voltage		V_{EBO}	5	V
Collector current		I_C	4	A
Base current		I_B	0.4	A
Collector power dissipation	Ta = 25°C	P_C	1.0	W
	Tc = 25°C		15	
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-55 to 150	°C

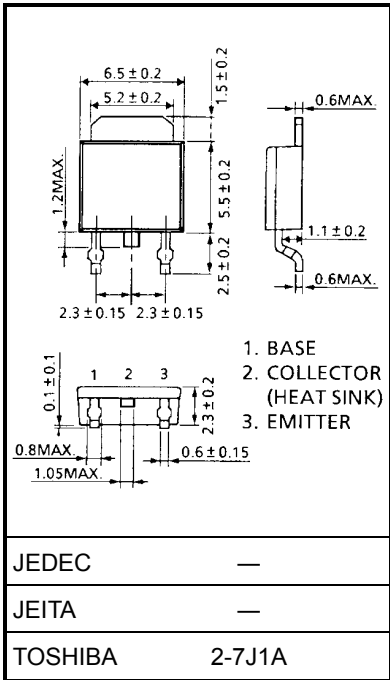
Equivalent Circuit



Unit: mm

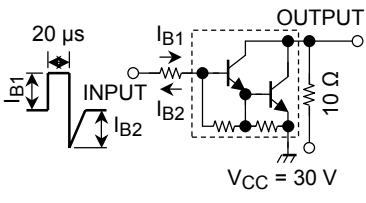


Weight: 0.36 g (typ.)

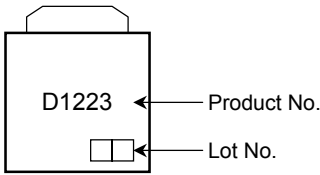


Weight: 0.36 g (typ.)

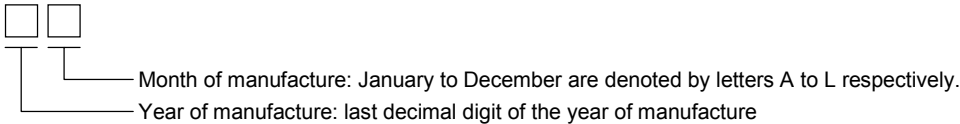
Electrical Characteristics (Ta = 25°C)

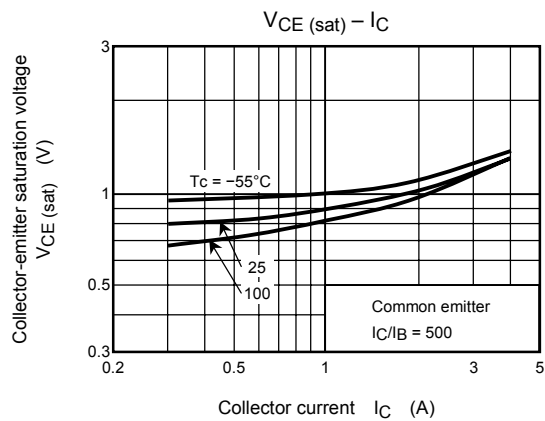
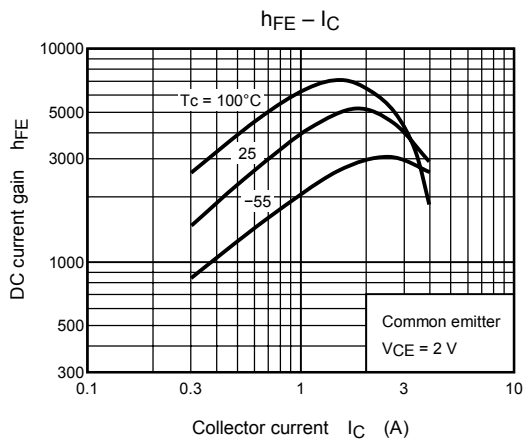
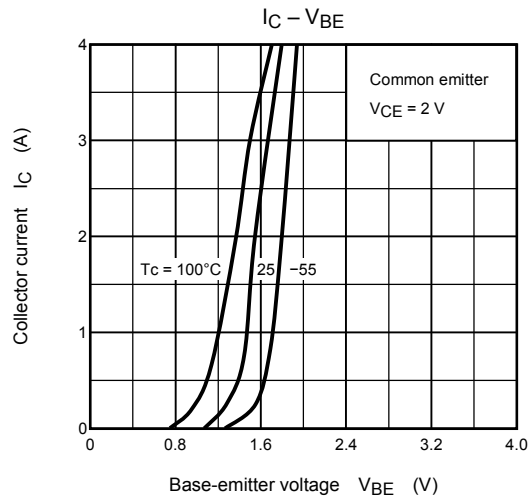
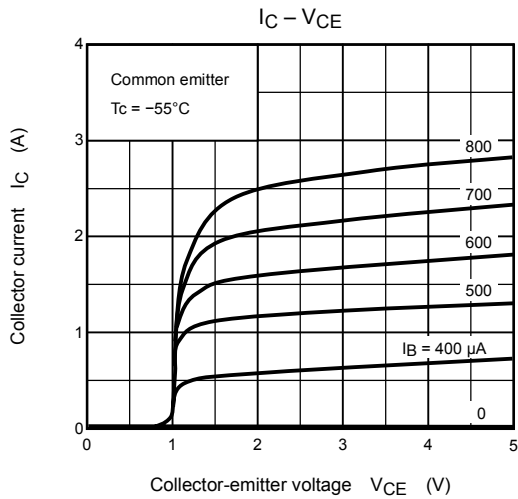
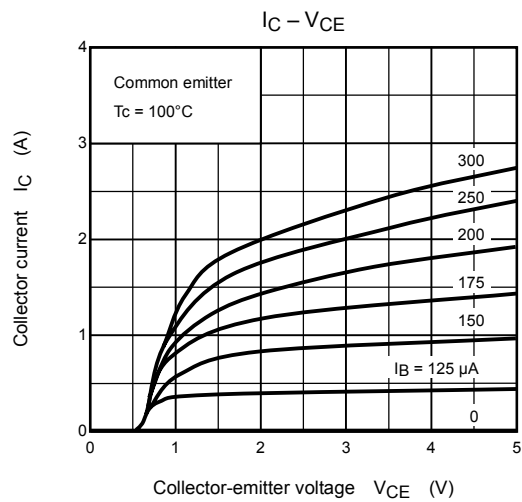
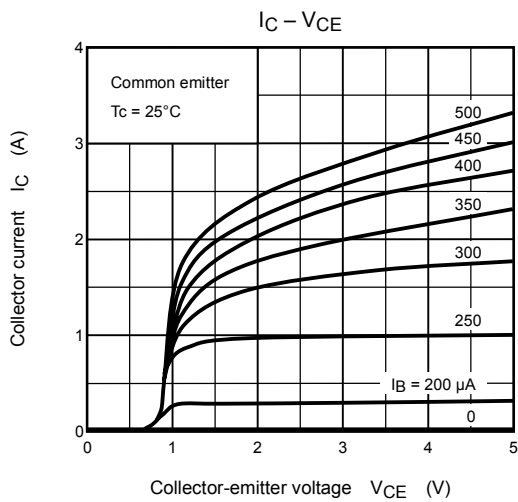
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		ICBO	V _{CB} = 100 V, I _E = 0	—	—	20	μA
Emitter cut-off current		IEBO	V _{EB} = 5 V, I _C = 0	—	—	2.5	mA
Collector-emitter breakdown voltage		V _(BR) CEO	I _C = 10 mA, I _B = 0	80	—	—	V
DC current gain		h _{FE} (1)	V _{CE} = 2 V, I _C = 1 A	2000	—	—	
		h _{FE} (2)	V _{CE} = 2 V, I _C = 3 A	1000	—	—	
Collector-emitter saturation voltage		V _{CE} (sat)	I _C = 3 A, I _B = 6 mA	—	—	1.5	V
Base-emitter saturation voltage		V _{BE} (sat)	I _C = 3 A, I _B = 6 mA	—	—	2.0	V
Switching time	Turn-on time	t _{on}	 I _{B1} = -I _{B2} = 6 mA, DUTY CYCLE ≤ 1%	—	0.2	—	μs
	Storage time	t _{stg}		—	1.5	—	
	Fall time	t _f		—	0.6	—	

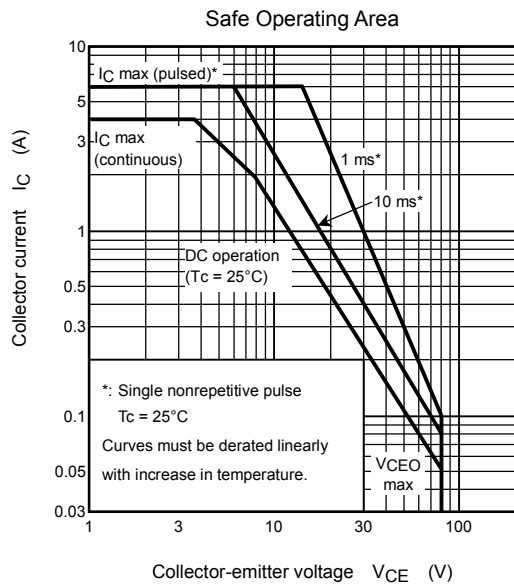
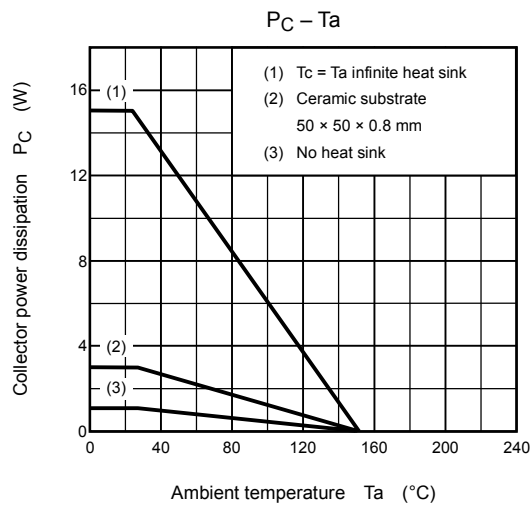
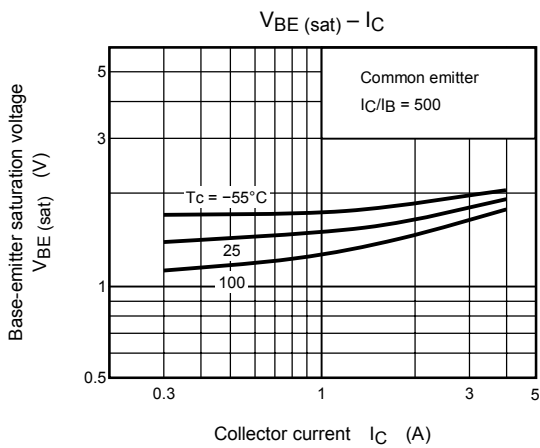
Marking



Explanation of Lot No.







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