

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

2SD1222

Switching Applications

Hammer Drive, Pulse Motor Drive Applications

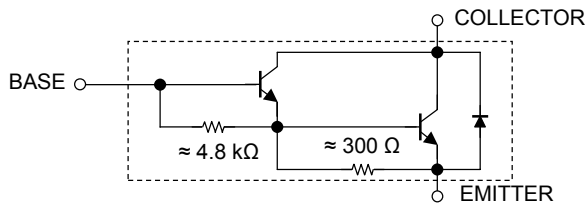
Power Amplifier Applications

- High DC current gain: $h_{FE} = 2000$ (min) ($V_{CE} = 2$ V, $I_C = 1$ A)
- Low saturation voltage: $V_{CE(sat)} = 1.5$ V (max) ($I_C = 2$ A)
- Complementary to 2SB907.

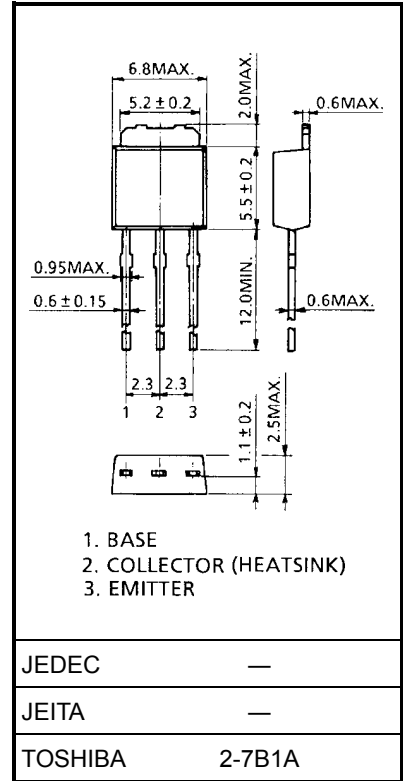
Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	60	V
Collector-emitter voltage		V_{CEO}	40	V
Emitter-base voltage		V_{EBO}	5	V
Collector current		I_C	3	A
Base current		I_B	0.3	A
Collector power dissipation	$T_a = 25^\circ\text{C}$	P_C	1.0	W
	$T_c = 25^\circ\text{C}$		15	
Junction temperature		T_j	150	$^\circ\text{C}$
Storage temperature range		T_{stg}	-55 to 150	$^\circ\text{C}$

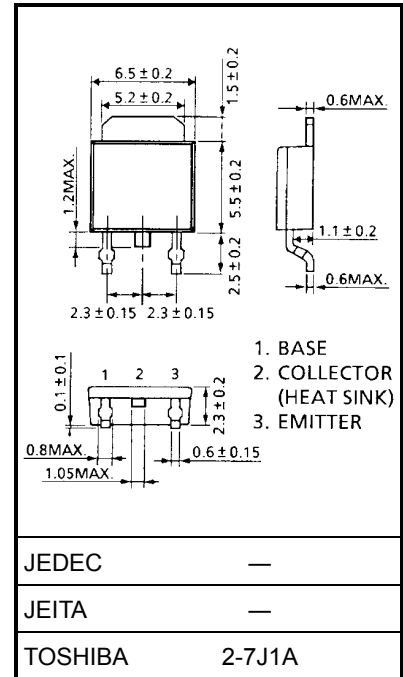
Equivalent Circuit



Unit: mm

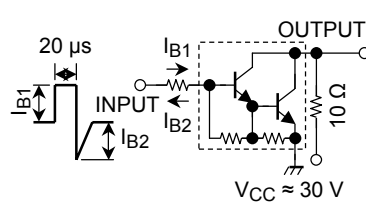


Weight: 0.36 g (typ.)

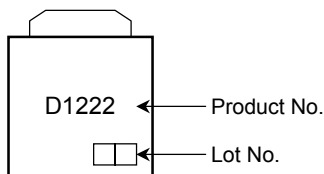


Weight: 0.36 g (typ.)

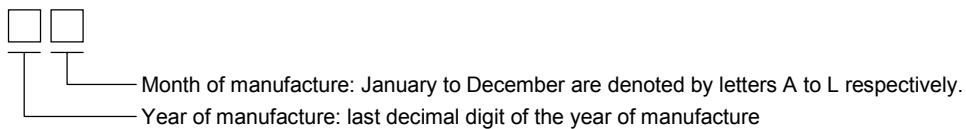
Electrical Characteristics (Ta = 25°C)

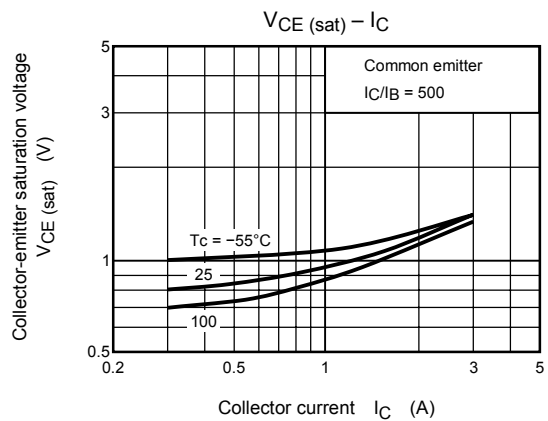
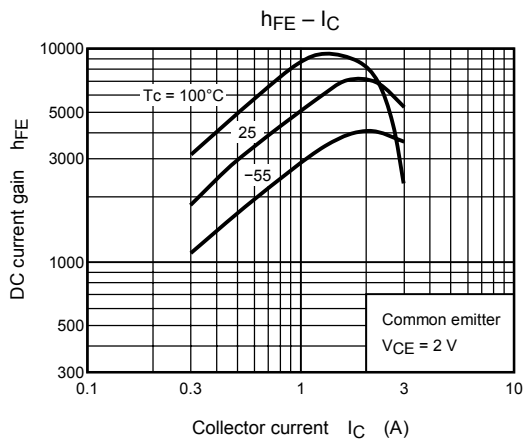
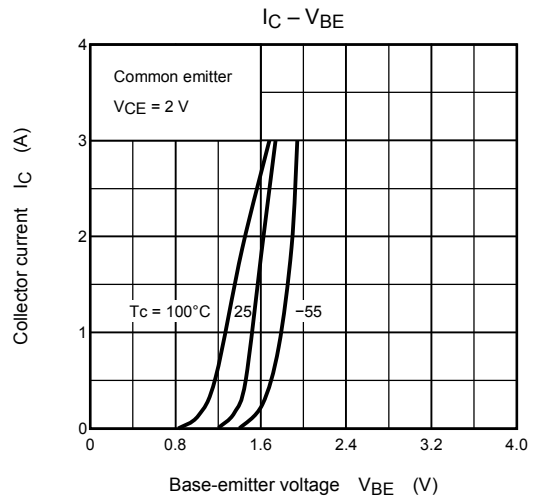
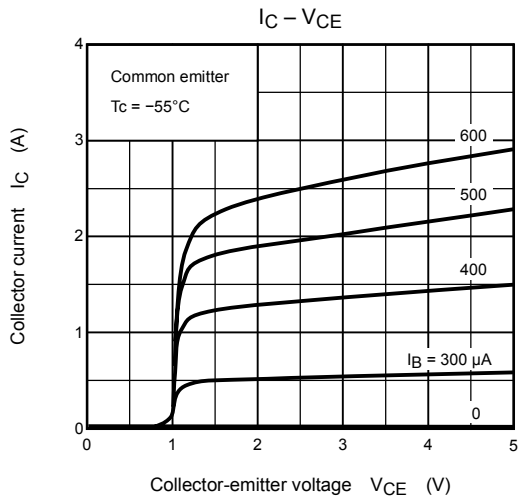
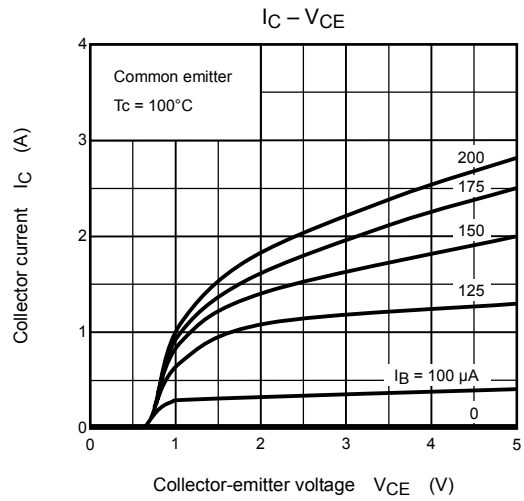
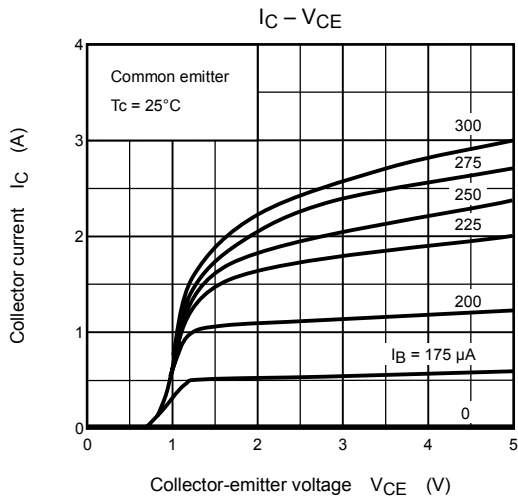
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = 60\text{ V}, I_E = 0$	—	—	20	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	2.5	mA
Collector-emitter breakdown voltage		$V_{(BR) CEO}$	$I_C = 25\text{ mA}, I_B = 0$	40	—	—	V
DC current gain		$h_{FE (1)}$	$V_{CE} = 2\text{ V}, I_C = 1\text{ A}$	2000	—	—	
		$h_{FE (2)}$	$V_{CE} = 2\text{ V}, I_C = 3\text{ A}$	1000	—	—	
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = 2\text{ A}, I_B = 4\text{ mA}$	—	—	1.5	V
Base-emitter saturation voltage		$V_{BE (sat)}$	$I_C = 2\text{ A}, I_B = 4\text{ mA}$	—	—	2.0	V
Switching time	Turn-on time	t_{on}	 <p>$I_{B1} = -I_{B2} = 6\text{ mA}, \text{DUTY CYCLE} \leq 1\%$</p>	—	0.1	—	μs
	Storage time	t_{stg}		—	1.0	—	
	Fall time	t_f		—	0.2	—	

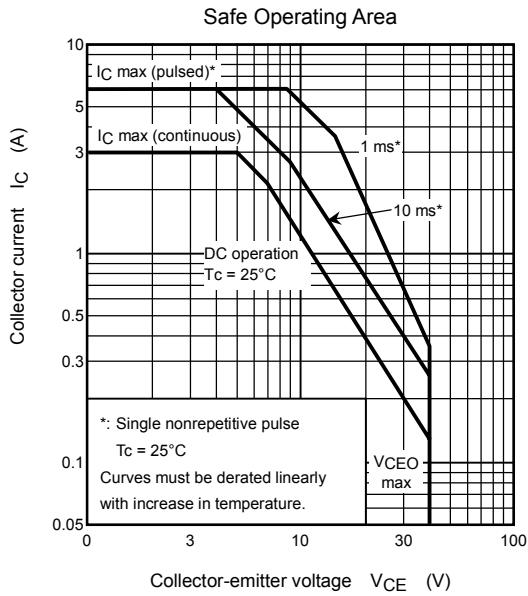
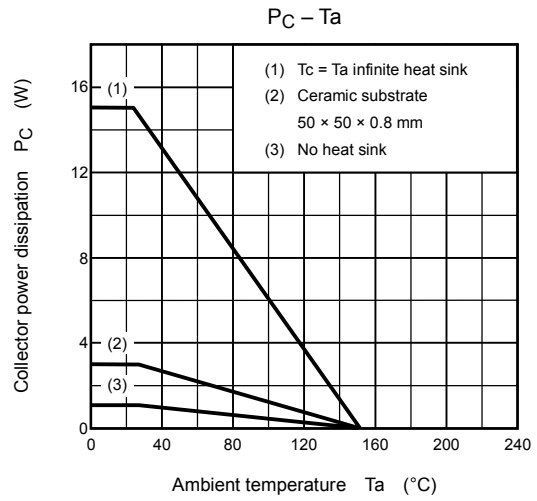
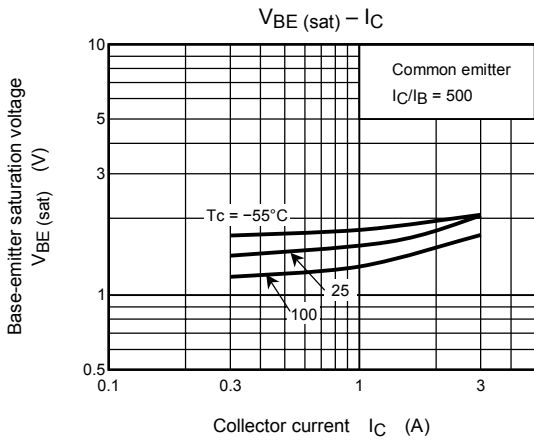
Marking



Explanation of Lot No.







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