

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

2SD1222

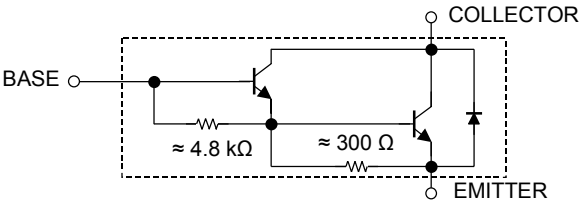
Switching Applications  
Hammer Drive, Pulse Motor Drive Applications  
Power Amplifier Applications

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

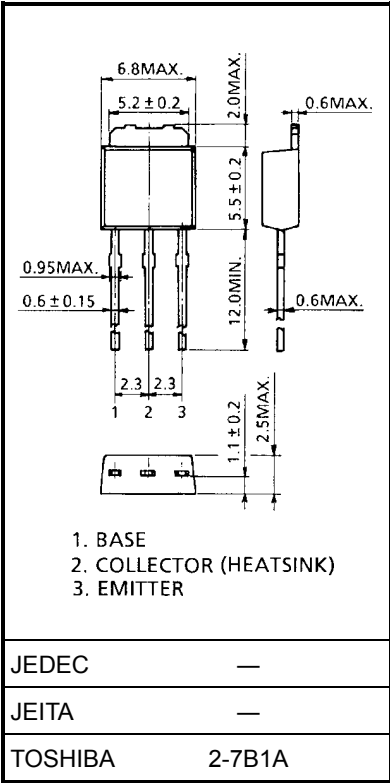
Maximum Ratings (Ta = 25°C)

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	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

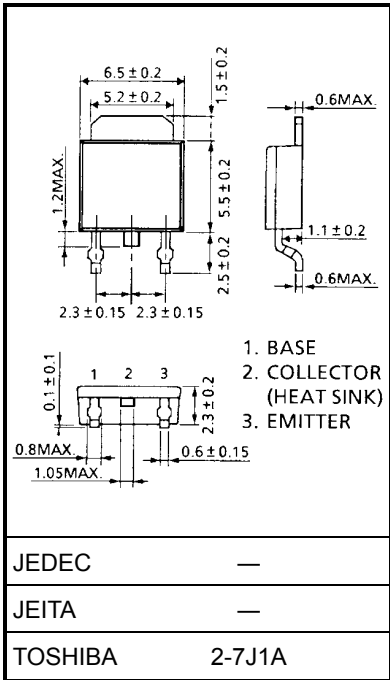
Equivalent Circuit



Unit: mm

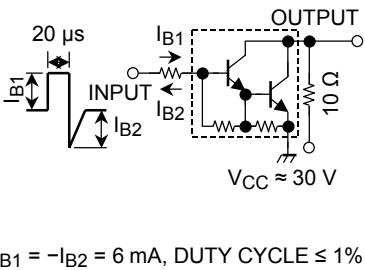


Weight: 0.36 g (typ.)

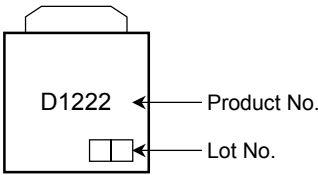


Weight: 0.36 g (typ.)

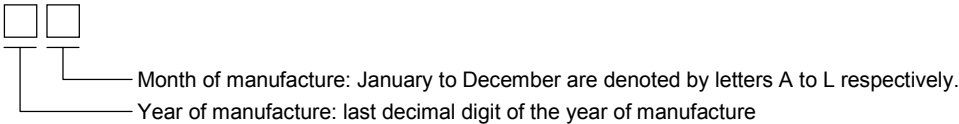
Electrical Characteristics (Ta = 25°C)

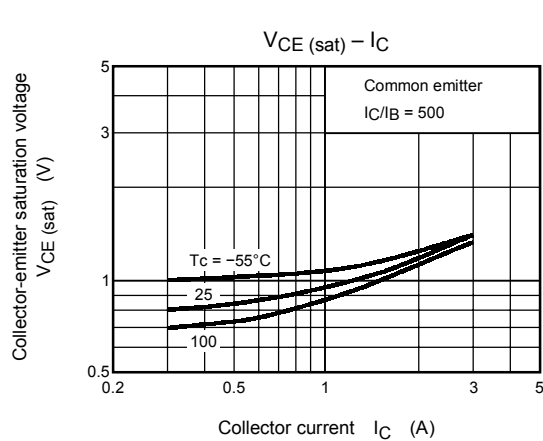
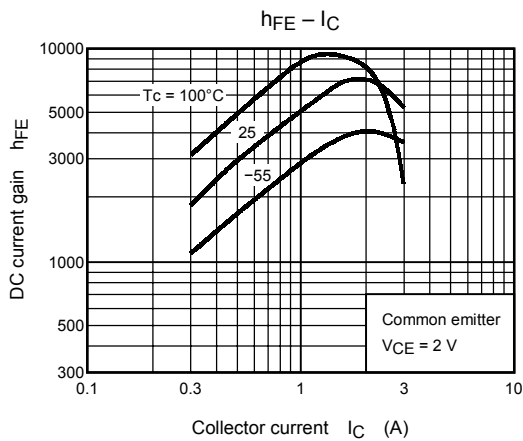
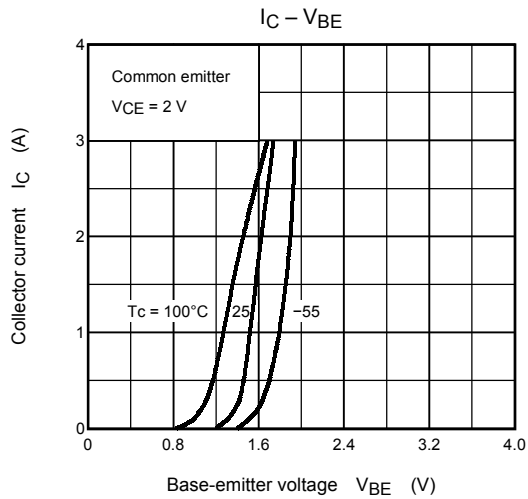
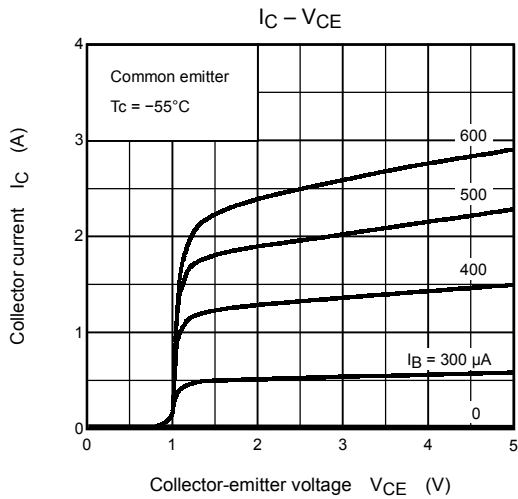
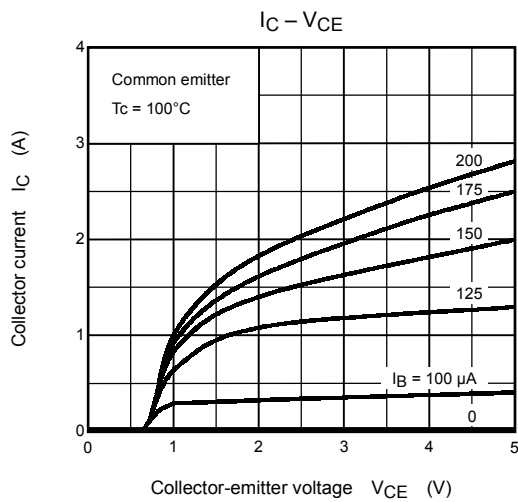
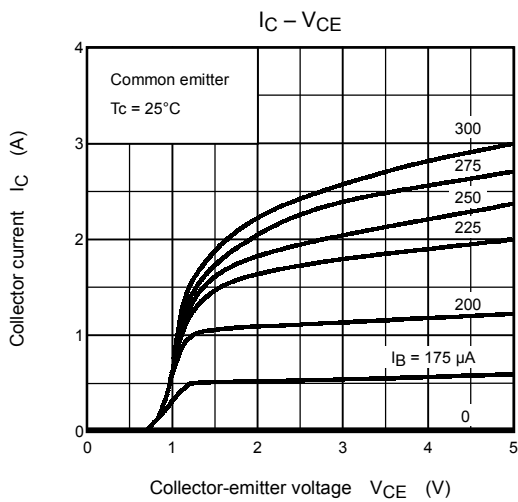
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		$I_{CBO}$	$V_{CB} = 60\text{ V}, I_E = 0$	—	—	20	$\mu\text{A}$
Emitter cut-off current		$I_{EBO}$	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	2.5	$\text{mA}$
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	$I_C = 25\text{ mA},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

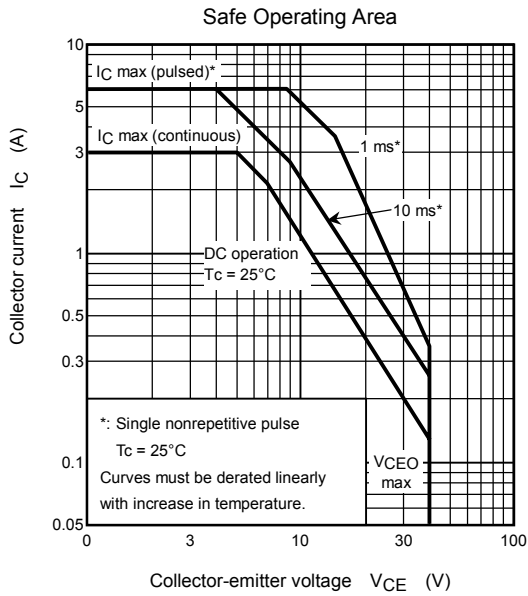
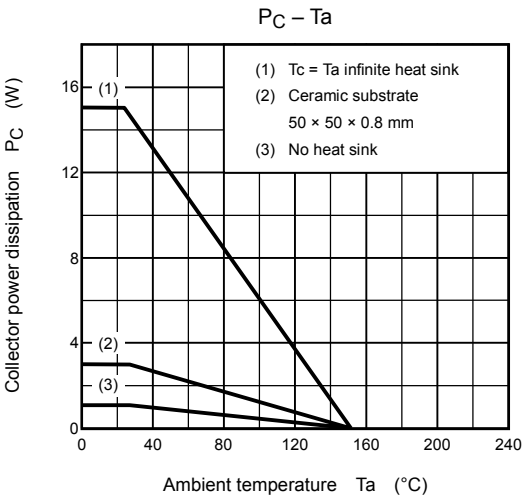
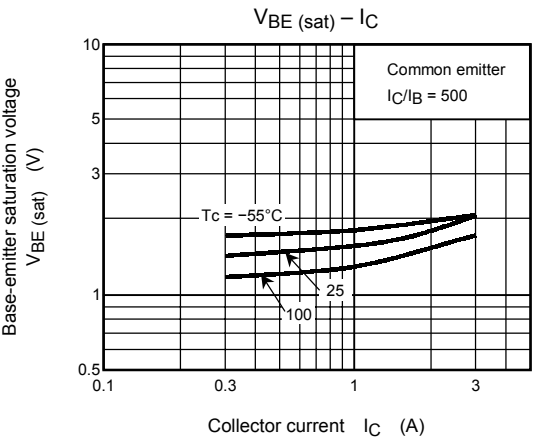
Marking



Explanation of Lot No.







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