

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process) (Darlington power transistor)

2SD1508

Pulse Motor Drive, Hammer Drive Applications

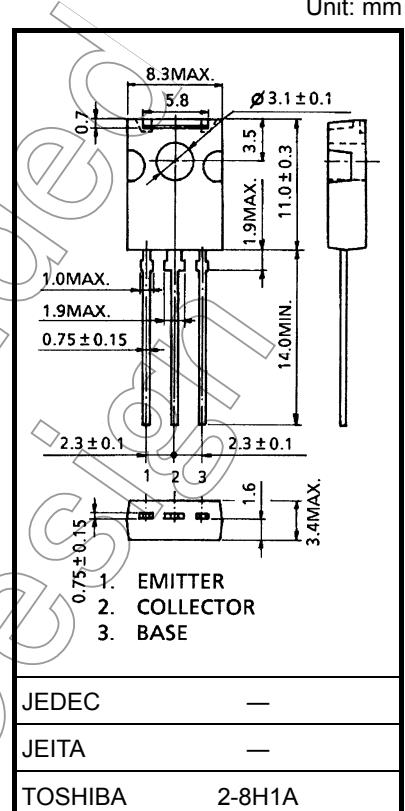
Switching Applications

Power Amplifier Applications

- High DC current gain: $hFE = 4000$ (min) ($V_{CE} = 2$ V, $I_C = 150$ mA)
- Low saturation voltage: $V_{CE}(\text{sat}) = 1.5$ V (max) ($I_C = 1$ A, $I_B = 1$ mA)

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

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	30	V
Collector-emitter voltage	V_{CEO}	30	V
Emitter-base voltage	V_{EBO}	10	V
Collector current	DC	I_C	A
	Pulse	I_{CP}	
Base current	I_B	50	mA
Collector power dissipation	$T_a = 25^\circ\text{C}$	P_C	W
	$T_c = 25^\circ\text{C}$		
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 150	$^\circ\text{C}$

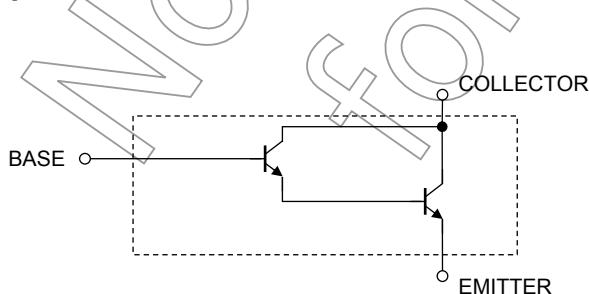


Weight: 0.82 g (typ.)

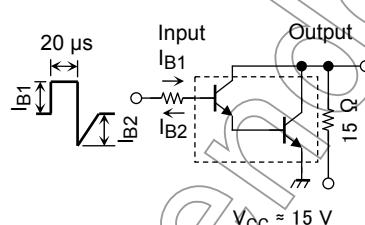
Note1: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

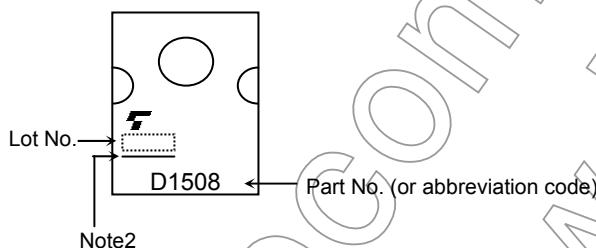
Equivalent Circuit



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

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 30\text{ V}, I_E = 0$	—	—	10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 10\text{ V}, I_C = 0$	—	—	10	μA
Collector-emitter breakdown voltage	$V_{(BR)\text{CEO}}$	$I_C = 10\text{ mA}, I_B = 0$	30	—	—	V
DC current gain	h_{FE}	$V_{CE} = 2\text{ V}, I_C = 150\text{ mA}$	4000	—	—	
Collector-emitter saturation voltage	$V_{CE(\text{sat})}$	$I_C = 1\text{ A}, I_B = 1\text{ mA}$	—	—	1.5	V
Base-emitter saturation voltage	$V_{BE(\text{sat})}$	$I_C = 1\text{ A}, I_B = 1\text{ mA}$	—	—	2.2	V
Switching time	Turn-on time	t_{on}		0.18	—	μs
	Storage time	t_{stg}		0.6	—	
	Fall time	t_f		0.3	—	

Marking

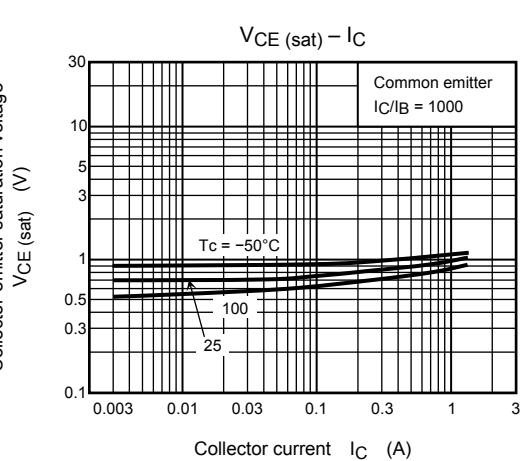
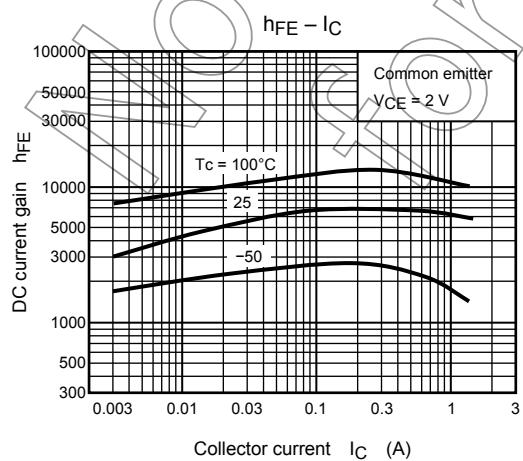
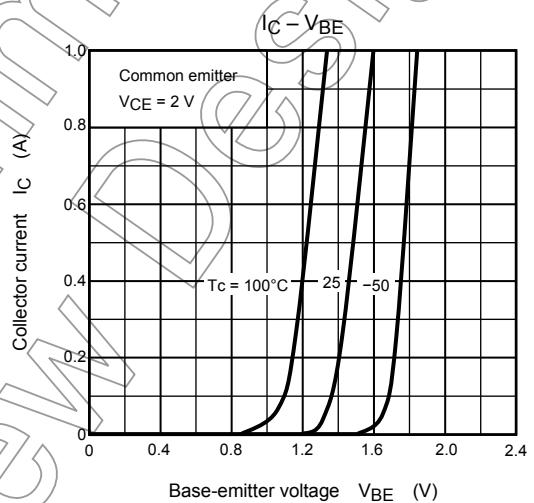
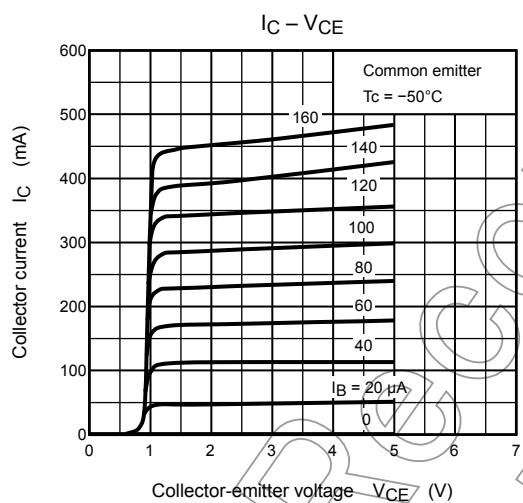
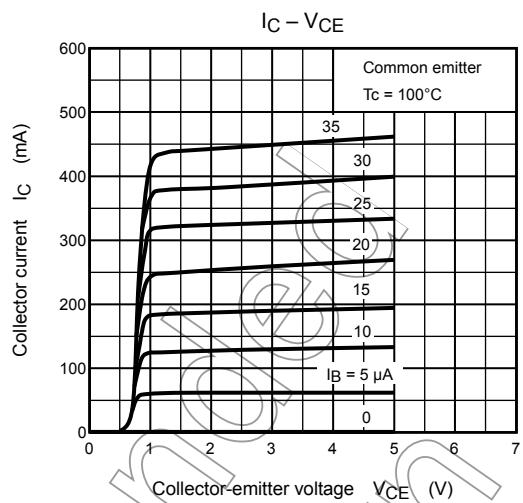
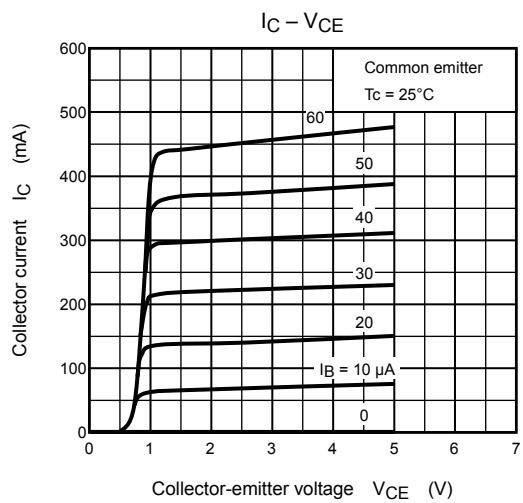


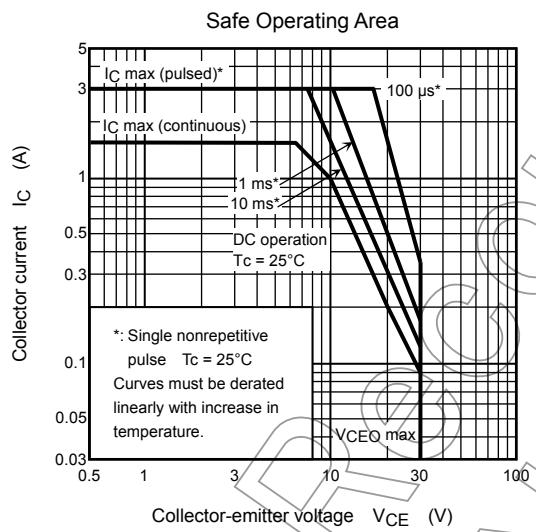
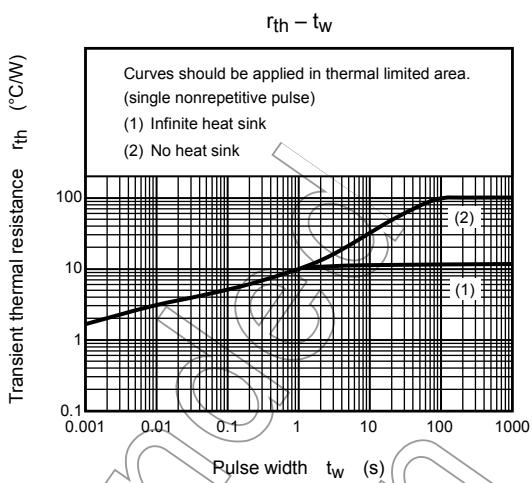
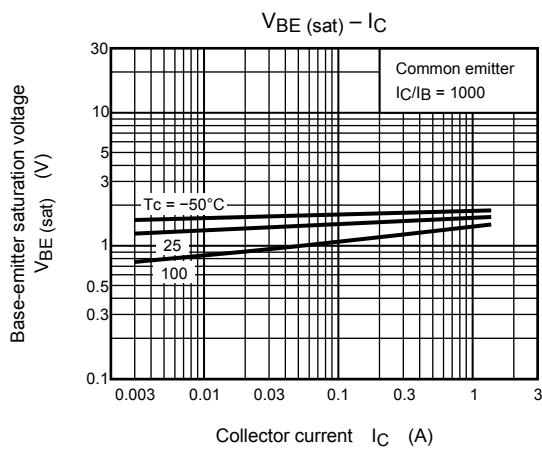
Note2: A line under a Lot No. identifies the indication of product Labels.

Not underlined: [[Pb]]/INCLUDES > MCV

Underlined: [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product. The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.





Not for New Design

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