Unit: mm

TOSHIBA Transistor Silicon NPN Epitaxial Type (Darlington Power Transistor)

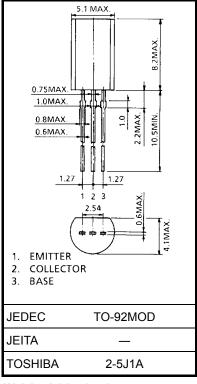
2SD2206

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

- High DC current gain: $h_{FE} = 2000$ (min) ($V_{CE} = 2$ V, $I_{C} = 1$ A)
- Low saturation voltage: $V_{CE (sat)} = 1.5 \text{ V (max) (I}_{C} = 1 \text{ A, I}_{B} = 1 \text{ mA})$

Absolute Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit	
Collector-base voltage		V _{CBO}	100	V	
Collector-emitter voltage		V _{CEO}	100	V	
Emitter-base voltage		V _{EBO}	8	V	
Collector current	DC	IC	2	Α	
	Pulse	I _{CP}	3		
Base current		Ι _Β	0.5	Α	
Collector power dissipation		PC	900	mW	
Junction temperature		Tj	150	°C	
Storage temperature range		T _{stg}	-55 to 150	°C	



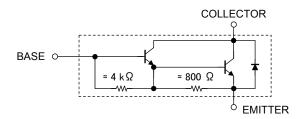
Weight: 0.36 g (typ.)

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



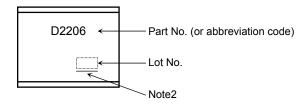
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Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current		I _{CBO}	V _{CB} = 80 V, I _E = 0	_	_	10	μΑ
Emitter cut-off cur	rent	I _{EBO}	V _{EB} = 8 V, I _C = 0	_	_	4	mA
Collector- emitter breakdown voltage		V (BR) CEO	I _C = 10 mA, I _B = 0	100	_	_	V
DC current gain		h _{FE}	V _{CE} = 2 V, I _C = 1 A (pulse)	2000	_	_	
Collector-emitter s	saturation voltage	V _{CE} (sat)	I _C = 1 A, I _B = 1 mA (pulse)	_	_	1.5	V
Base-emitter saturation voltage		V _{BE} (sat)	I _C = 1 A, I _B = 1 mA (pulse)	_	_	2.0	V
Transition frequency		f _T	V _{CE} = 2 V, I _C = 0.5 A	_	100	_	MHz
Collector output capacitance		C _{ob}	V _{CB} = 10 V, I _E = 0, f = 1 MHz	_	20	_	pF
Switching time	Turn-on time	t _{on}	$20 \mu s$ Input $\stackrel{ _{B1}}{\longrightarrow}$ $\stackrel{ _{B2}}{\longrightarrow}$ $\stackrel{ _{B2}}{\longrightarrow}$ $\stackrel{ _{B2}}{\longrightarrow}$ $\stackrel{ _{B2}}{\longrightarrow}$ $\stackrel{ _{CC}}{\longrightarrow}$ $ $	_	0.4	_	
	Storage time	t _{stg}		ı	4.0		μs
	Fall time	t _f		_	0.6	_	

Marking



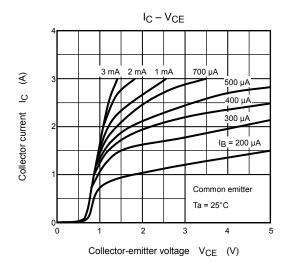
Note2: A line under a Lot No. identifies the indication of product Labels.

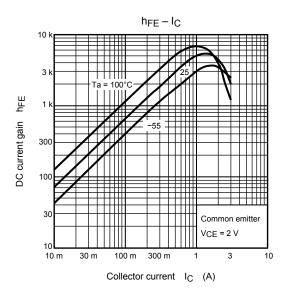
Not underlined: [[Pb]]/INCLUDES > MCV

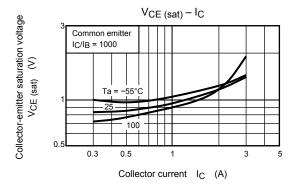
Underlined: [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

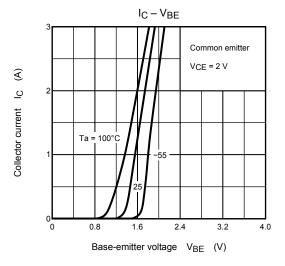
Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product. The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical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

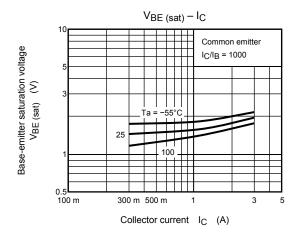
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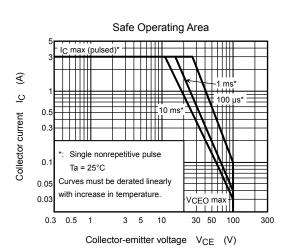












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