TOSHIBA Transistor Silicon NPN Epitaxial Type (Darlington Power Transistor)

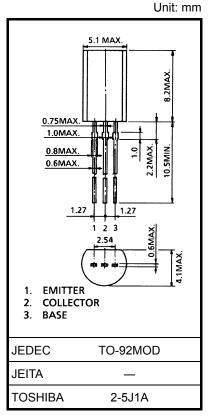
# 2SD2695

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:  $V_{CE (sat)} = 1.5 \text{ V (max) (IC} = 1 \text{ A, IB} = 1 \text{ mA})$
- Zener diode included between collector and base

#### Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V <sub>CBO</sub>	50	V
Collector-emitter voltage	$V_{CEO}$	60 ± 10	V
Emitter-base voltage	V <sub>EBO</sub>	8	V
Collector current	IC	2	Α
Base current	ΙΒ	0.5	Α
Collector power dissipation	PC	0.9	W
Junction temperature	Tj	150	°C
Storage temperature range	T <sub>stg</sub>	−55 to 150	°C

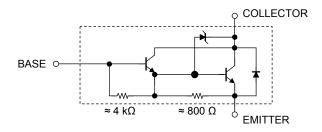


Weight: 0.36 g (typ.)

Note: 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).

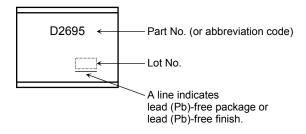
#### **Equivalent Circuit**

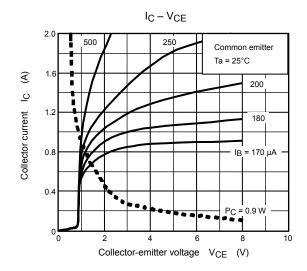


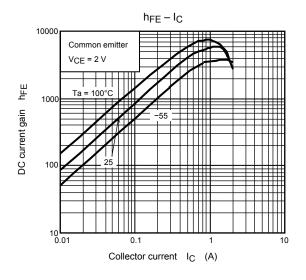
## **Electrical Characteristics (Ta = 25°C)**

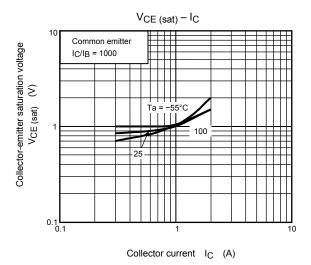
Chara	octeristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off c	urrent	I <sub>CBO</sub>	V <sub>CB</sub> = 45 V, I <sub>E</sub> = 0	_	_	10	μΑ
Emitter cut-off cur	rent	I <sub>EBO</sub>	V <sub>EB</sub> = 8 V, I <sub>C</sub> = 0	_	_	4	mA
Collector-emitter	oreakdown voltage	V (BR) CEO	I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0	50	60	70	V
DC current gain		h <sub>FE</sub>	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 1 A (pulsed)	2000	_	_	
Collector-emitter	saturation voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> = 1 A, I <sub>B</sub> = 1 mA (pulsed)	_	_	1.5	V
Base-emitter satu	ration voltage	V <sub>BE</sub> (sat)	I <sub>C</sub> = 1 A, I <sub>B</sub> = 1 mA (pulsed)	_	_	2.0	V
Transition frequer	псу	f <sub>T</sub>	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 0.5 A (pulsed)	_	100	_	MHz
Collector output of	apacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz	_	20	_	pF
Unclamped inductive load energy		E <sub>S/B</sub>	L = 10 mH, I <sub>C</sub> = 2.0 A, I <sub>B</sub> = ±50 mA	20	_	_	mJ
Switching time S	Turn-on time	t <sub>on</sub>	20 $\mu$ s Input $\stackrel{ B1}{\longrightarrow}$ $\stackrel{ B1}{\longrightarrow}$ $\stackrel{ B2}{\longrightarrow}$ $\stackrel{ B2}{\longrightarrow}$ $\stackrel{ B2}{\longrightarrow}$ $\stackrel{ B2}{\longrightarrow}$ $\stackrel{ B2}{\longrightarrow}$ $\stackrel{ B3}{\longrightarrow}$ $\stackrel{ B3}{\longrightarrow}$ $\stackrel{ B4}{\longrightarrow}$ $\stackrel{ B4}{\longrightarrow}$ $\stackrel{ B4}{\longrightarrow}$ $\stackrel{ B4}{\longrightarrow}$ $\stackrel{ B5}{\longrightarrow}$ $\stackrel{ B4}{\longrightarrow}$ $\stackrel{ B4}{\longrightarrow}$ $\stackrel{ B4}{\longrightarrow}$ $\stackrel{ B5}{\longrightarrow}$ $\stackrel{ B4}{\longrightarrow}$ $$	_	0.4	_	
	Storage time	t <sub>stg</sub>		_	4.0	_	μs
	Fall time	t <sub>f</sub>		_	0.6	_	

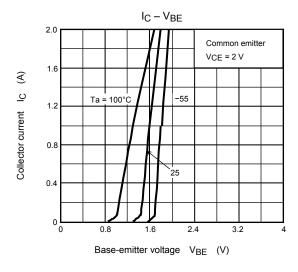
## Marking

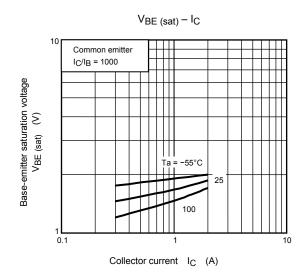


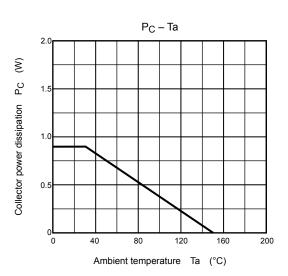




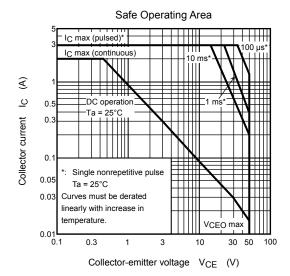








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