

TOSHIBA Transistor Silicon NPN Epitaxial Type (Darlington power transistor)

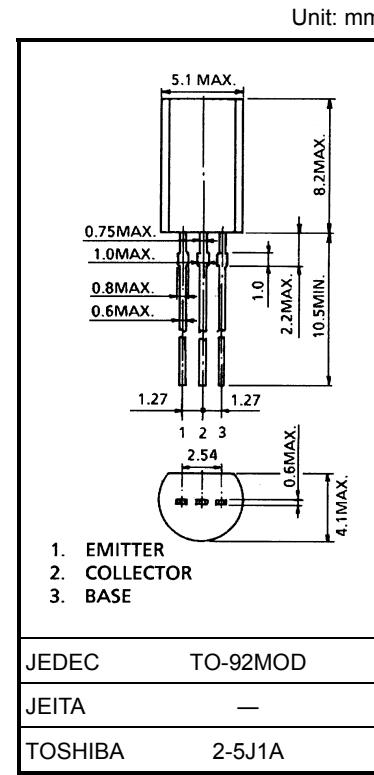
2SD2695

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

- High DC current gain: $hFE = 2000$ (min) ($VCE = 2$ V, $IC = 1$ A)
- Low saturation voltage: $VCE(\text{sat}) = 1.5$ V (max) ($IC = 1$ A, $IB = 1$ mA)
- Zener diode included between collector and base.

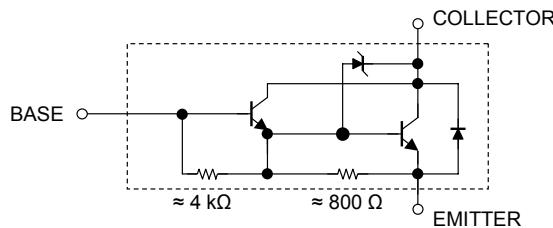
Maximum Ratings ($Ta = 25^\circ\text{C}$)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	60 ± 10	V
Emitter-base voltage	V_{EBO}	8	V
Collector current	I_C	2	A
Base current	I_B	0.5	A
Collector power dissipation	P_C	0.9	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 150	$^\circ\text{C}$

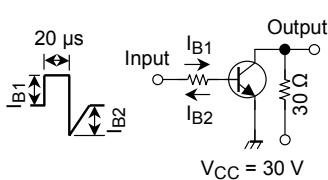


Weight: 0.36 g (typ.)

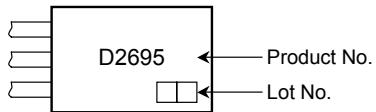
Equivalent Circuit



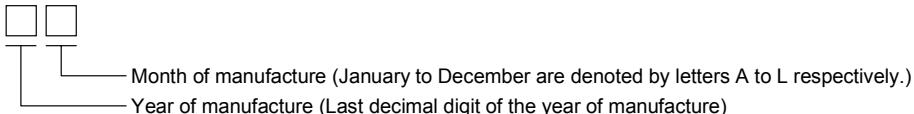
Electrical Characteristics (Ta = 25°C)

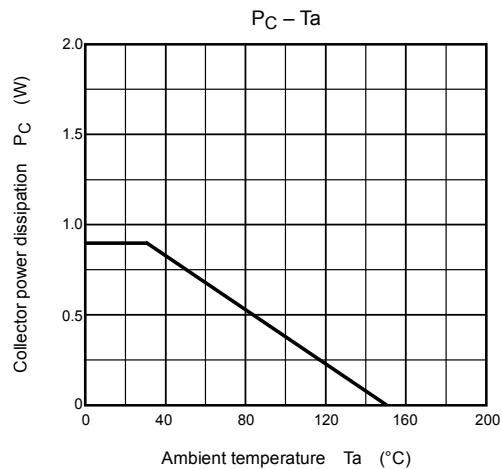
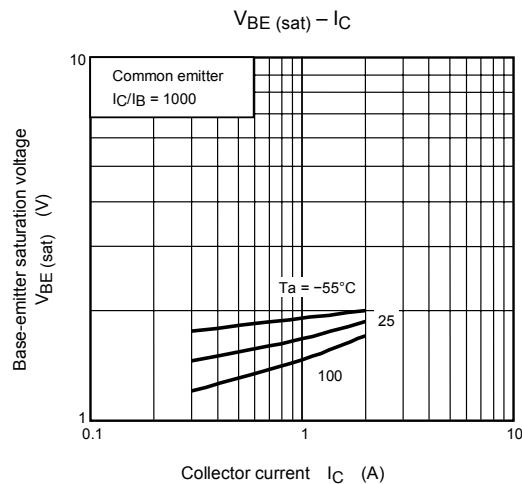
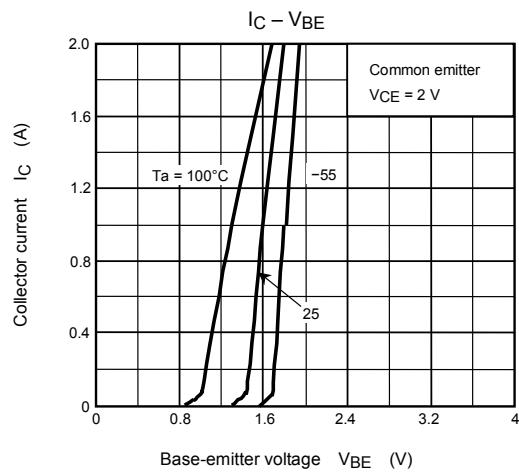
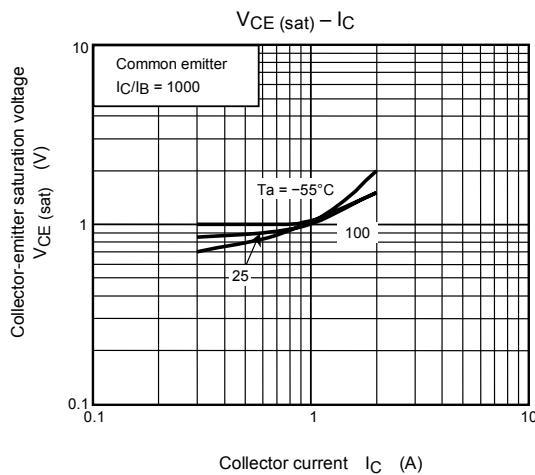
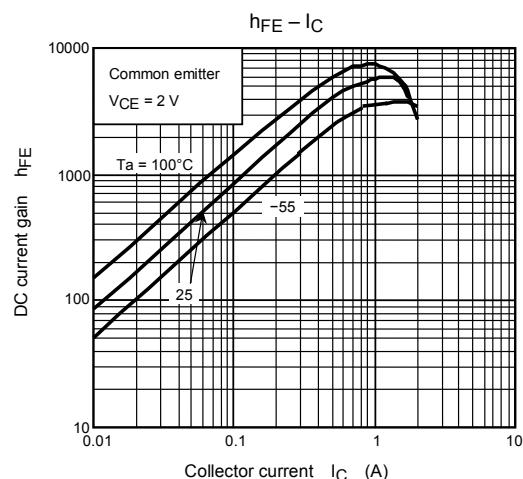
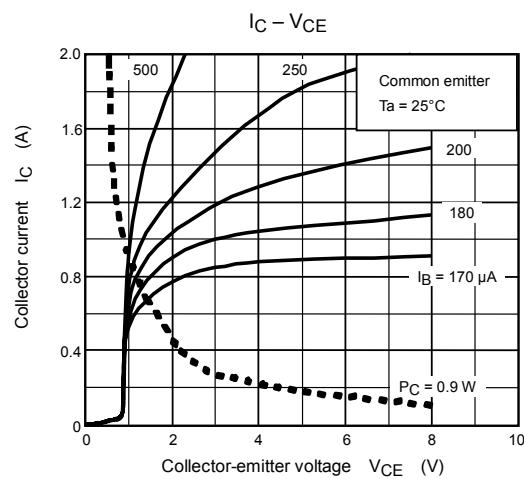
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 45 \text{ V}$, $I_E = 0$	—	—	10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 8 \text{ V}$, $I_C = 0$	—	—	4	mA
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	$I_C = 10 \text{ mA}$, $I_B = 0$	50	60	70	V
DC current gain	h_{FE}	$V_{CE} = 2 \text{ V}$, $I_C = 1 \text{ A}$ (pulsed)	2000	—	—	
Collector-emitter saturation voltage	$V_{CE(\text{sat})}$	$I_C = 1 \text{ A}$, $I_B = 1 \text{ mA}$ (pulsed)	—	—	1.5	V
Base-emitter saturation voltage	$V_{BE(\text{sat})}$	$I_C = 1 \text{ A}$, $I_B = 1 \text{ mA}$ (pulsed)	—	—	2.0	V
Transition frequency	f_T	$V_{CE} = 2 \text{ V}$, $I_C = 0.5 \text{ A}$ (pulsed)	—	100	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$	—	20	—	pF
Unclamped inductive load energy	$E_{S/B}$	$L = 10 \text{ mH}$, $I_C = 2.0 \text{ A}$, $I_B = \pm 50 \text{ mA}$	20	—	—	mJ
Switching time	Turn-on time	t_{on}	 $I_B1 = -I_B2 = 1 \text{ mA}$, duty cycle $\leq 1\%$	—	0.4	—
	Storage time	t_{stg}		—	4.0	—
	Fall time	t_f		—	0.6	—

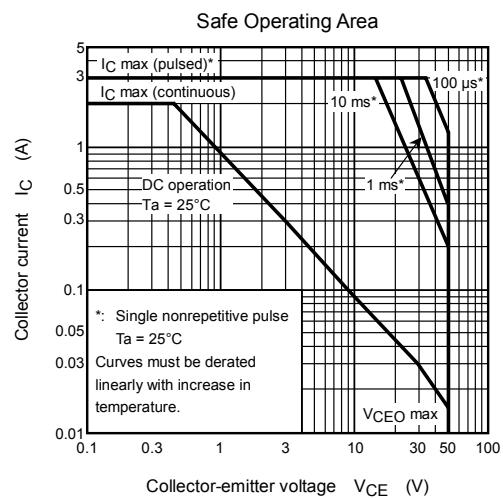
Marking



Explanation of Lot No.







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