

TOSHIBA Transistor Silicon PNP Triple Diffused Type

2SB1641

High-Power Switching Applications

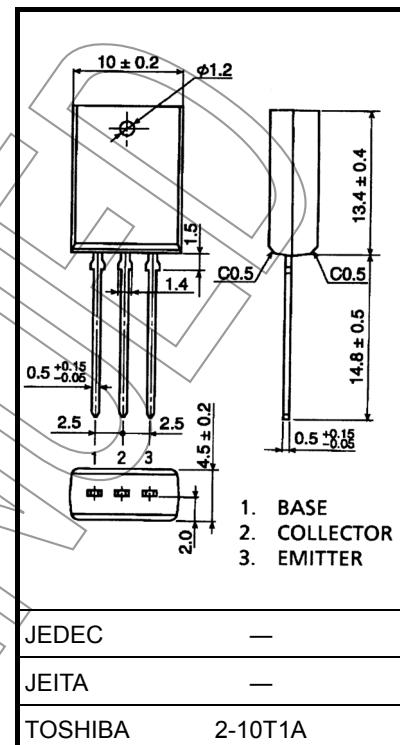
Hammer Drive, Pulse Motor Drive Applications

Unit: mm

- High DC current gain: $hFE = 1500$ (min) ($V_{CE} = -3$ V, $I_C = -2.5$ A)
- Low saturation voltage: $V_{CE}(\text{sat}) = -1.5$ V (max) ($I_C = -2.5$ A)
- Complementary to 2SD2526

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

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-100	V
Collector-emitter voltage	V_{CEO}	-100	V
Emitter-base voltage	V_{EBO}	-7	V
Collector current	DC	I_C	A
	Pulse	I_{CP}	
Base current	I_B	-0.5	A
Collector power dissipation	P_C	1.8	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 150	$^\circ\text{C}$

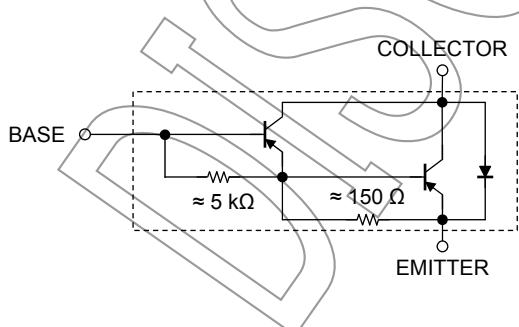


Weight: 1.5 g (typ.)

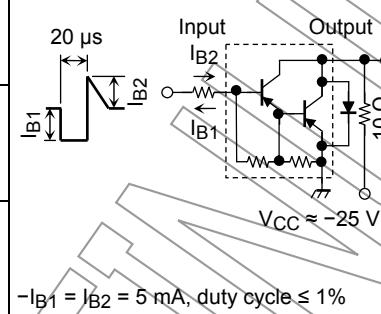
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

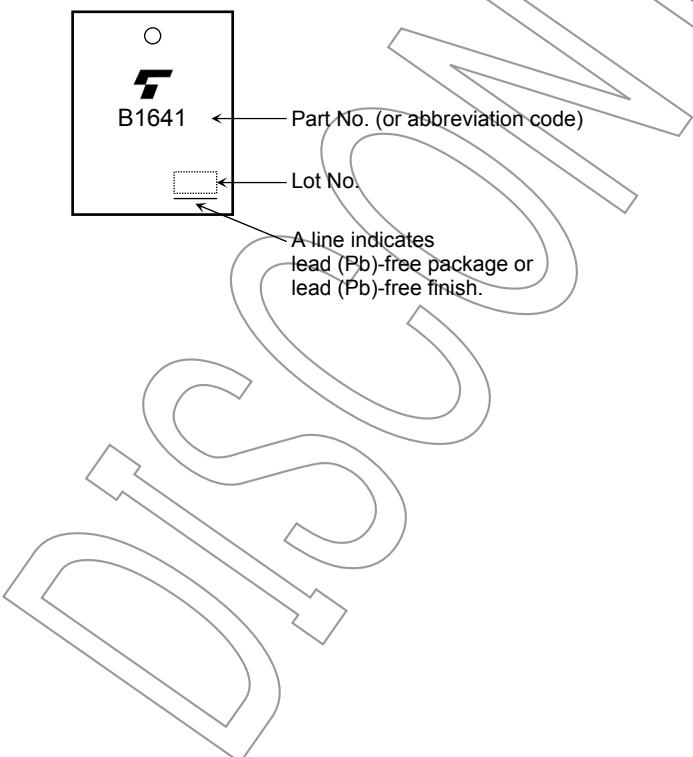
Equivalent Circuit

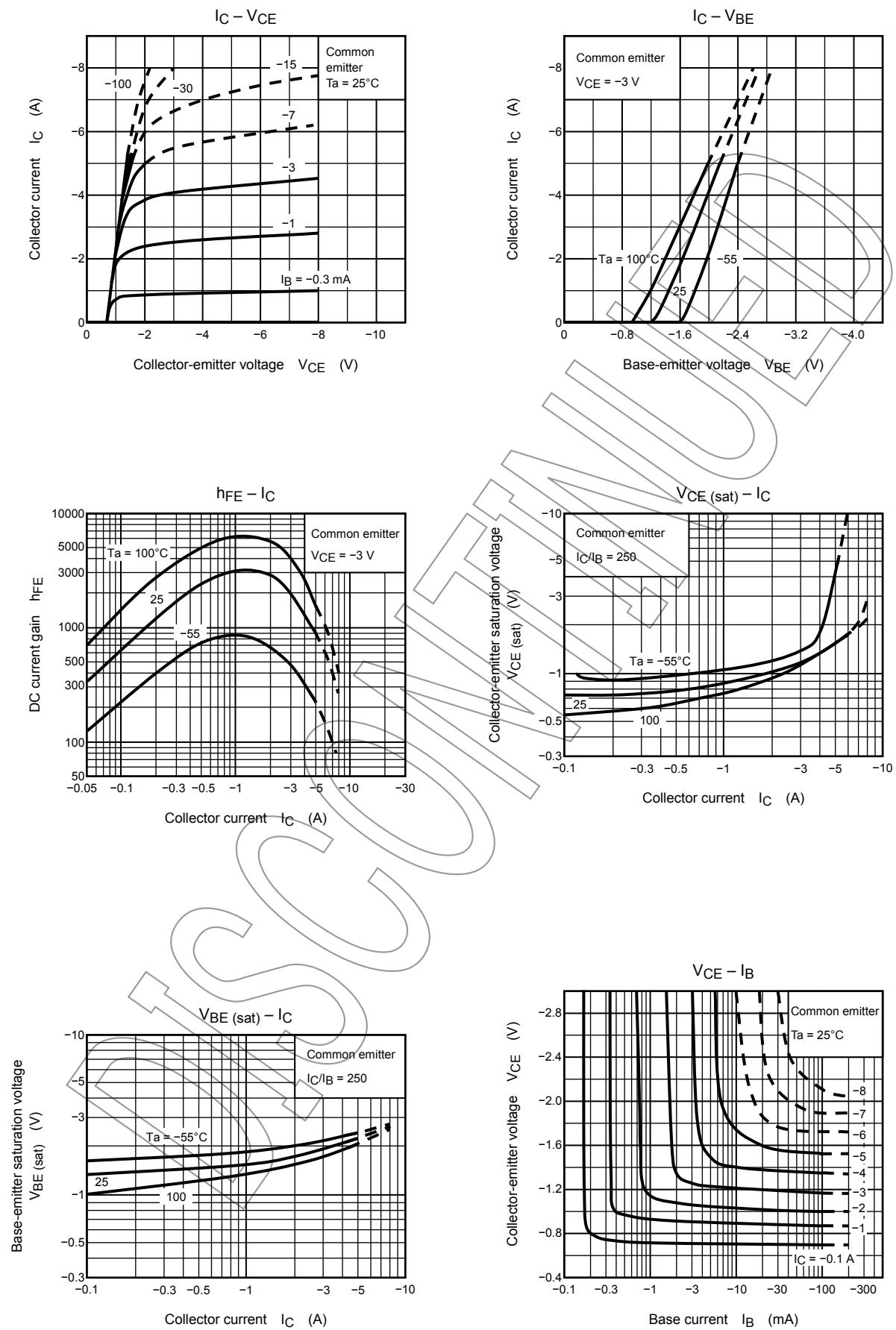


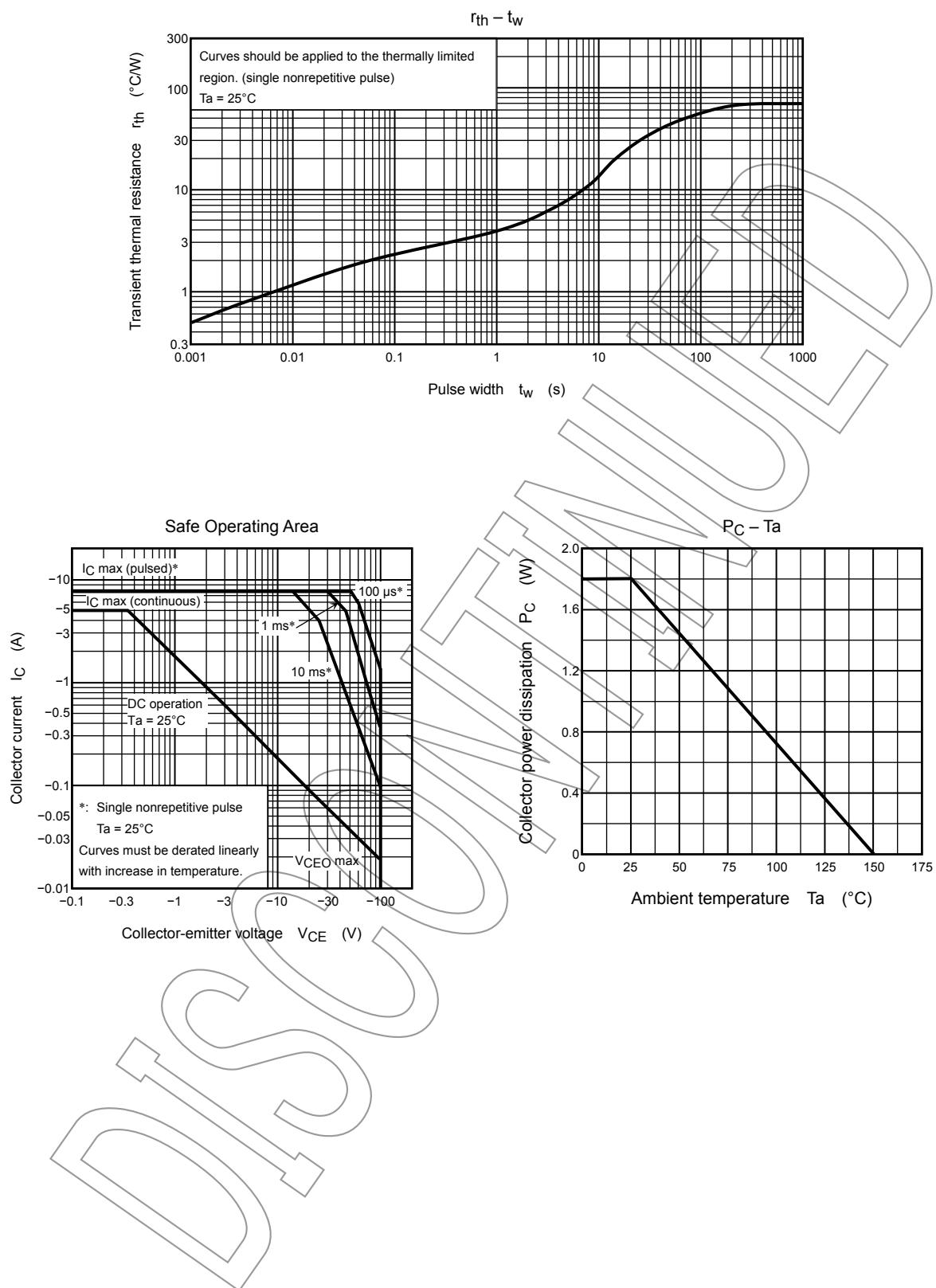
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I _{CBO}	V _{CB} = -100 V, I _E = 0	—	—	-100	μA
Emitter cut-off current	I _{EBO}	V _{EB} = -6 V, I _C = 0	—	—	-2.5	mA
Collector-emitter breakdown voltage	V _{(BR) CEO}	I _C = -30 mA, I _B = 0	-100	—	—	V
DC current gain	h _{FE} (1)	V _{CE} = -3 V, I _C = -2.5 A	1500	—	15000	V
	h _{FE} (2)	V _{CE} = -3 V, I _C = -5 A	500	—	—	
Collector-emitter saturation voltage	V _{CE (sat)} (1)	I _C = -2.5 A, I _B = -5 mA	—	-1.1	-1.5	V
	V _{CE (sat)} (2)	I _C = -5 A, I _B = -20 mA	—	-1.6	-3.0	
Base-emitter saturation voltage	V _{BE (sat)}	I _C = -2.5 A, I _B = -5 mA	—	-1.8	-2.5	V
Switching time	Turn-on time	t _{on}		0.8	—	μs
	Storage time	t _{stg}		2.5	—	
	Fall time	t _f		2.0	—	

Marking







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20070701-EN

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