

TOSHIBA Transistor Silicon PNP Triple Diffused Type

2SB1640

Audio Frequency Power Amplifier

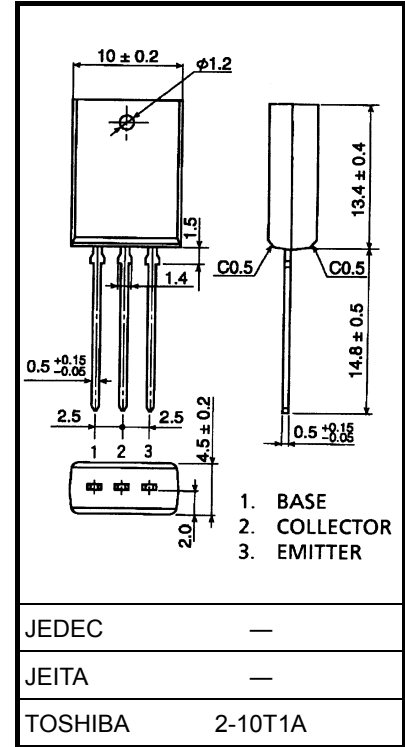
- Low saturation voltage: $V_{CE(sat)} = -1.5 \text{ V (max)}$
($I_C = -2 \text{ A}$, $I_B = -0.2 \text{ A}$)
- Collector metal (fin) is covered with mold region.
- Complementary to 2SD2525

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

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	-60	V
Collector-emitter voltage		V_{CEO}	-60	V
Emitter-base voltage		V_{EBO}	-7	V
Collector current	DC	I_C	-3	A
	Pulse	I_{CP}	-6	
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	$^\circ\text{C}$

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).

Unit: mm

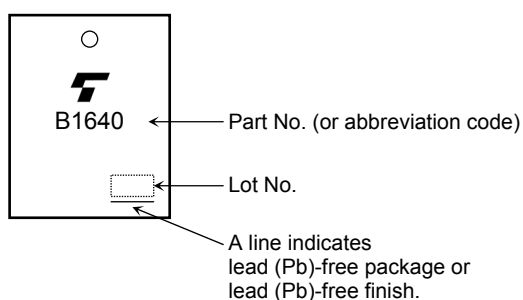


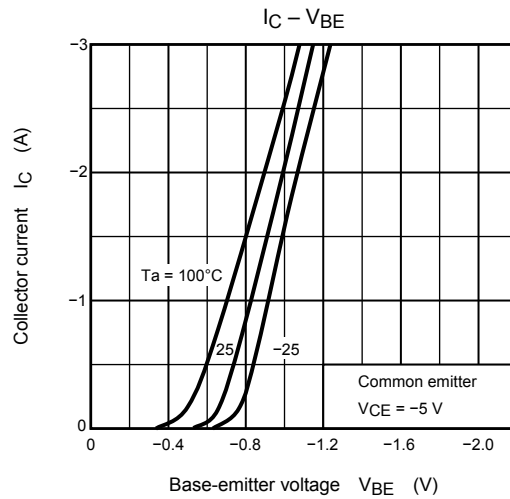
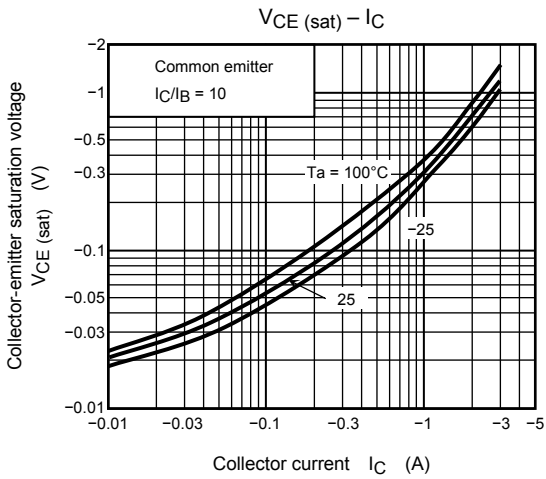
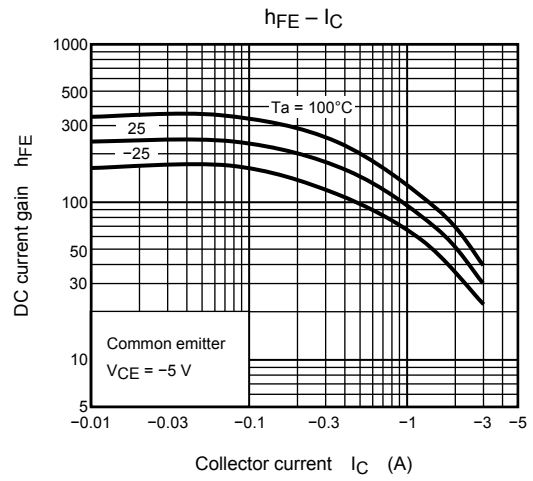
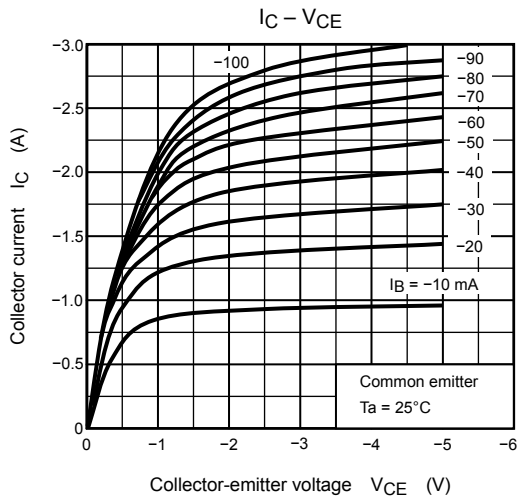
Weight: 1.5 g (typ.)

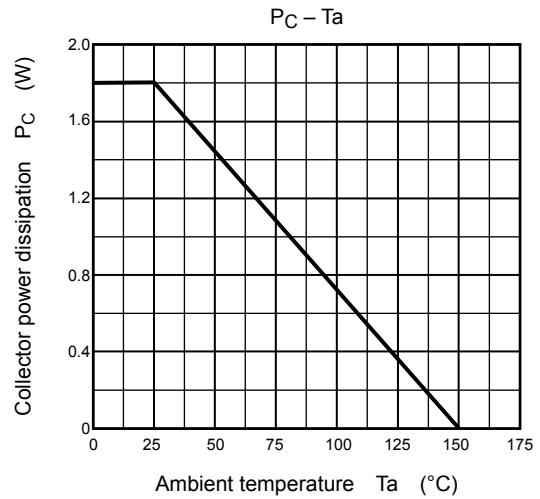
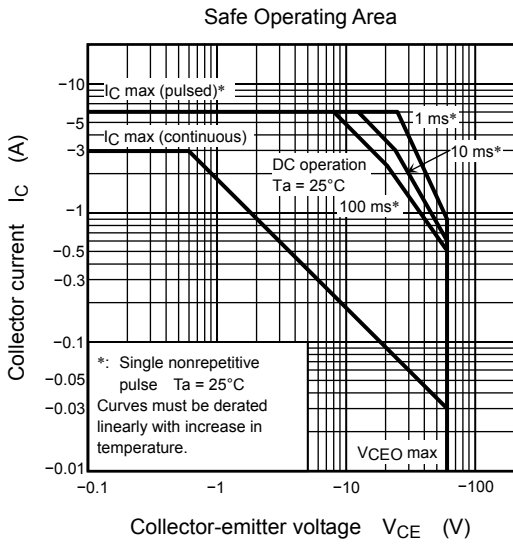
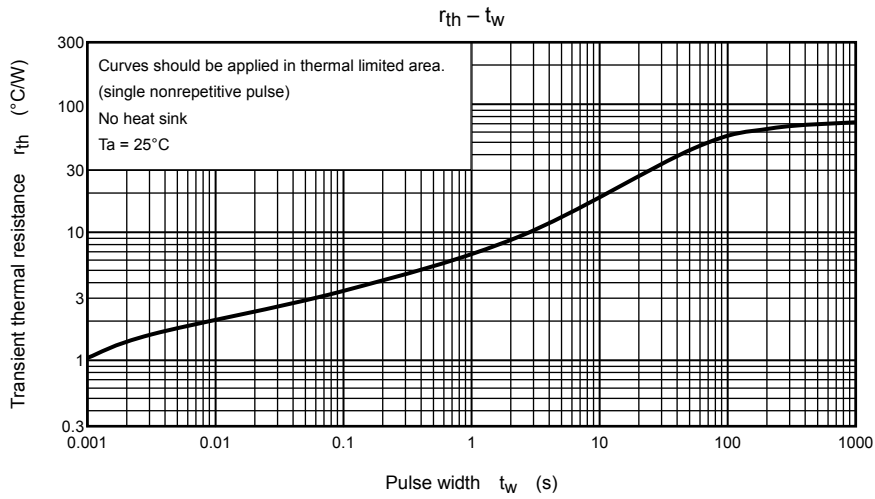
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = -60\text{ V}, I_E = 0$	—	—	-10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -7\text{ V}, I_C = 0$	—	—	-10	μA
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -50\text{ mA}, I_B = 0$	-60	—	—	V
DC current gain	$h_{FE(1)}$	$V_{CE} = -5\text{ V}, I_C = -0.5\text{ A}$	100	—	320	
	$h_{FE(2)}$	$V_{CE} = -5\text{ V}, I_C = -2\text{ A}$	15	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -2\text{ A}, I_B = -0.2\text{ A}$	—	-0.1	-1.5	V
Base-emitter voltage	V_{BE}	$V_{CE} = -5\text{ V}, I_C = -0.5\text{ A}$	—	-0.75	-1.0	V
Transition frequency	f_T	$V_{CE} = -5\text{ V}, I_C = -0.5\text{ A}$	—	9	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	50	—	pF

Marking







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20070701-EN

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