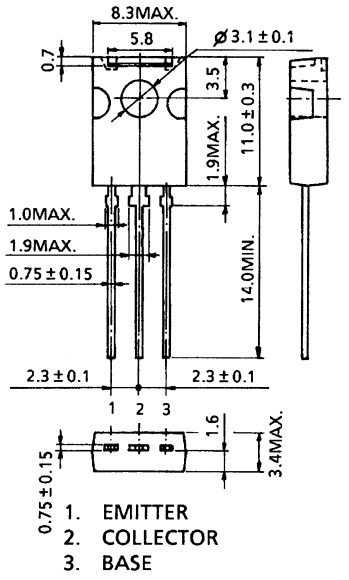
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

2SA1360

Audio Frequency Amplifier Applications

- Complementary to 2SC3423
- Small collector output capacitance: C_{ob} = 2.5 pF (typ.)
- High transition frequency: f_T = 200 MHz (typ.)

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	2-8H1A

Weight: 0.82 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	−150	V
Collector-emitter voltage		V_{CEO}	−150	V
Emitter-base voltage		V_{EBO}	−5	V
Collector current		I_C	−50	mA
Base current		I_B	−5	mA
Collector power dissipation	Ta = 25°C	P_C	1.2	W
	Tc = 25°C		5	
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	−55 to 150	°C

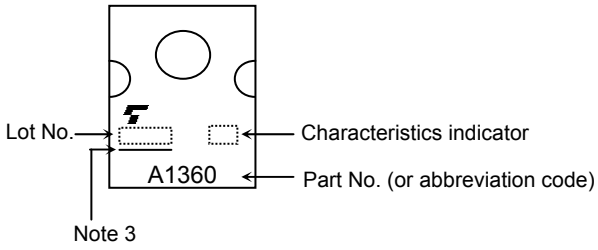
Note1: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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).

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = −150 V, I_E = 0	—	—	−0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = −5 V, I_C = 0	—	—	−0.1	μA
Collector-emitter breakdown voltage	$V_{(BR)\ CEO}$	I_C = −1 mA, I_B = 0	−150	—	—	V
DC current gain	h_{FE} (Note 2)	V_{CE} = −5 V, I_C = −10 mA	80	—	240	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = −10 mA, I_B = −1 mA	—	—	−1.0	V
Base-emitter voltage	V_{BE}	V_{CE} = −5 V, I_C = −10 mA	—	—	−0.8	V
Transition frequency	f_T	V_{CE} = −5 V, I_C = −10 mA	—	200	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = −10 V, I_E = 0, f = 1 MHz	—	2.5	—	pF

Note 2: h_{FE} classification O: 80 to 160, Y: 120 to 240

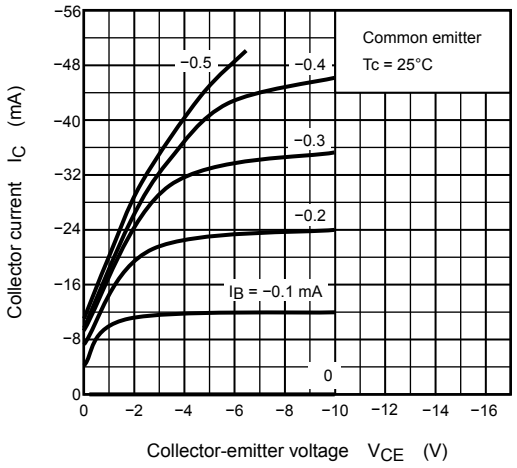
Marking



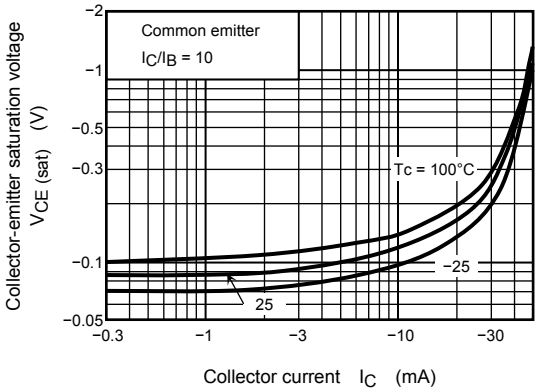
Note 3: A line under a Lot No. identifies the indication of product Labels.
Not underlined: [[Pb]]/INCLUDES > MCV
Underlined: [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

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.

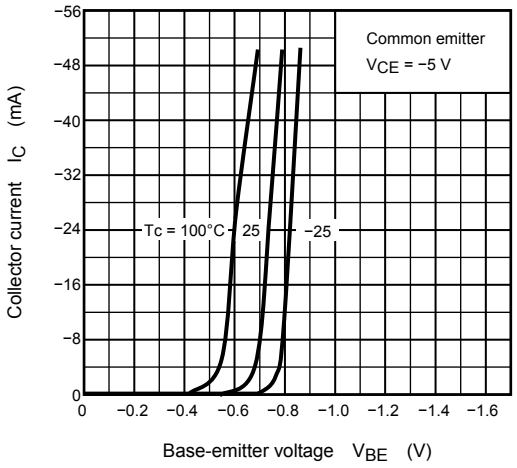
$I_C - V_{CE}$



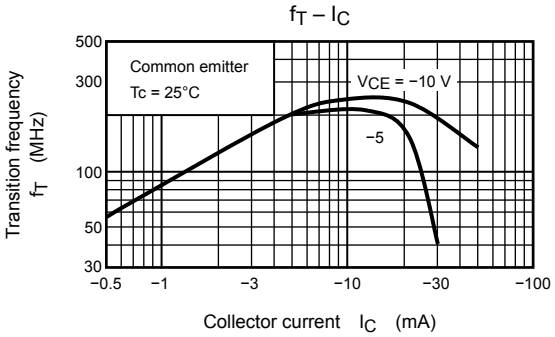
$V_{CE\ (sat)} - I_C$



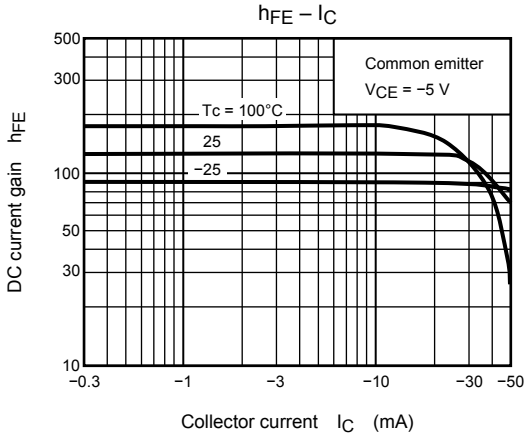
$I_C - V_{BE}$



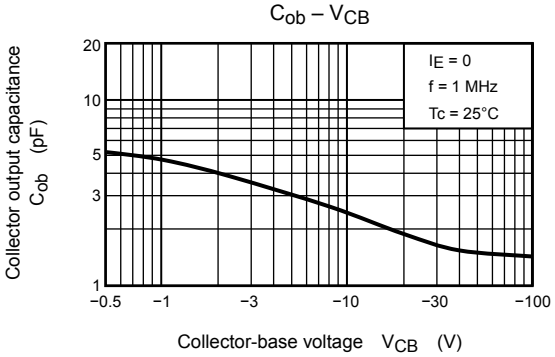
$f_T - I_C$



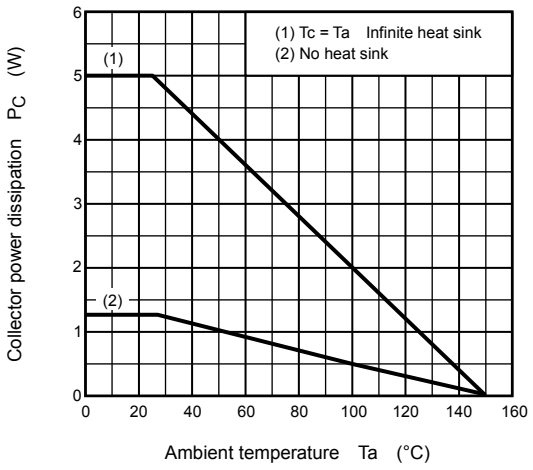
$h_{FE} - I_C$



$C_{ob} - V_{CB}$



P_C – Ta


(1) Tc = Ta Infinite heat sink
(2) No heat sink
(1)
(2)
Collector power dissipation P_C (W)
0
1
2
3
4
5
6
0
20
40
60
80
100
120
140
160
Ambient temperature Ta (°C)

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