

TOSHIBA Transistor Silicon NPN Epitaxial (PCT process)

2SC2859

Audio Frequency Low Power Amplifier Applications
 Driver Stage Amplifier Applications
 Switching Applications

- Excellent h_{FE} linearity: $h_{FE}(2) = 25$ (min) ($V_{CE} = 6\text{ V}$, $I_C = 400\text{ mA}$)
- Complementary to 2SA1182.

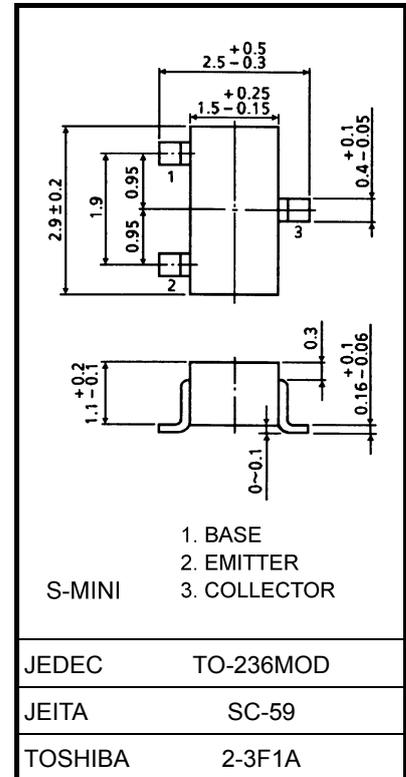
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	35	V
Collector-emitter voltage	V_{CEO}	30	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	500	mA
Base current	I_B	50	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55~125	$^\circ\text{C}$

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: 0.012 g (typ.)

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

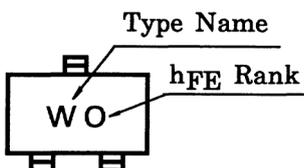
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 35\text{ V}$, $I_E = 0$	—	—	0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{ V}$, $I_C = 0$	—	—	0.1	μA
DC current gain (Note)	$h_{FE}(1)$	$V_{CE} = 1\text{ V}$, $I_C = 100\text{ mA}$	70	—	400	
	$h_{FE}(2)$	$V_{CE} = 6\text{ V}$, $I_C = 400\text{ mA}$	25	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 100\text{ mA}$, $I_B = 10\text{ mA}$	—	0.1	0.25	V
Base-emitter voltage	V_{BE}	$V_{CE} = 1\text{ V}$, $I_C = 100\text{ mA}$	—	0.8	1.0	V
Transition frequency	f_T	$V_{CE} = 6\text{ V}$, $I_C = 20\text{ mA}$	—	300	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 6\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$	—	7	—	pF

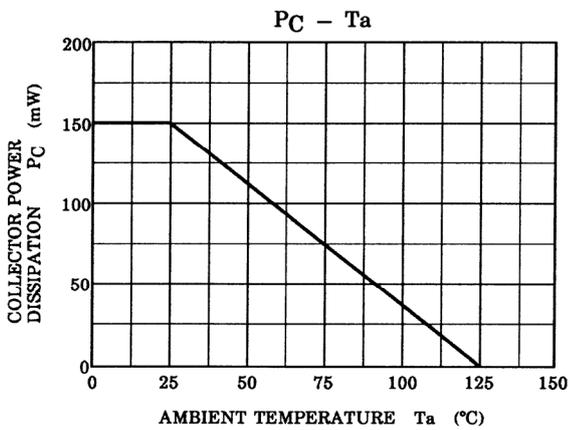
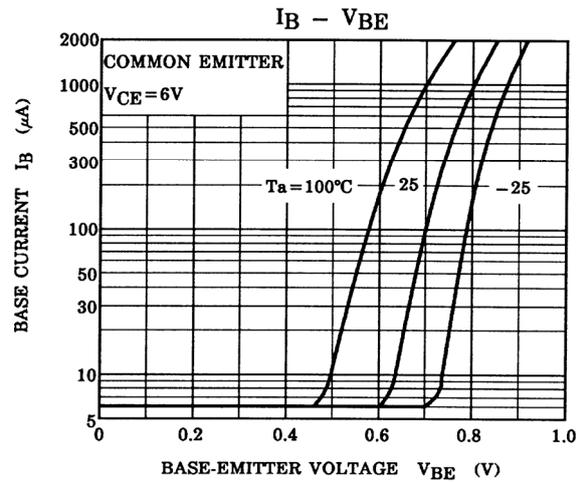
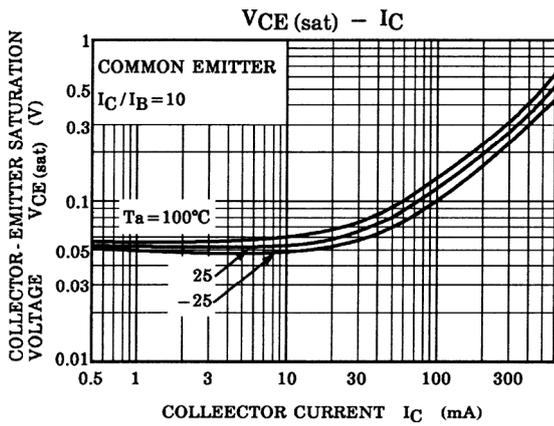
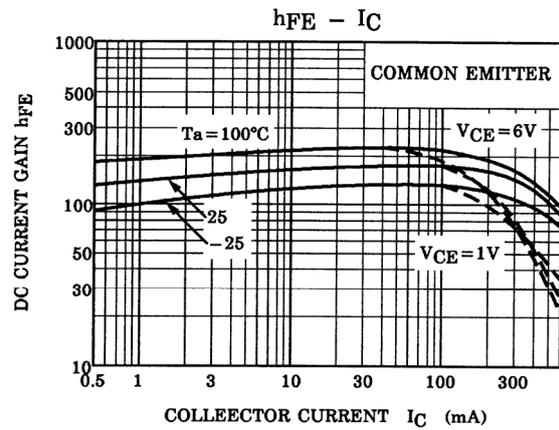
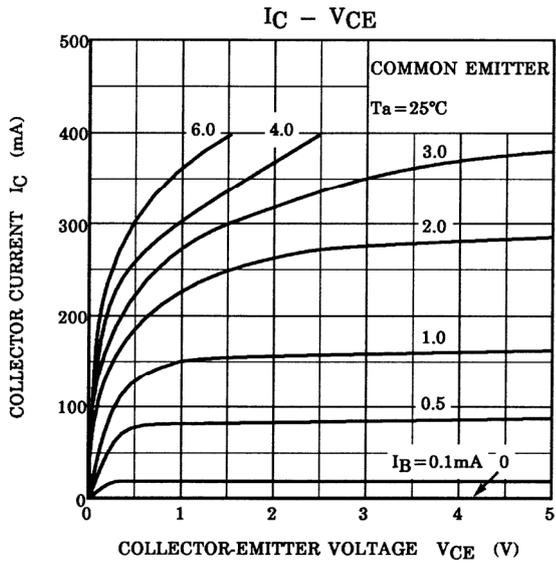
Note: $h_{FE}(1)$ classification O (O): 70~140, Y (Y): 120~240, GR (G): 200~400

$h_{FE}(2)$ classification O: 25 min, Y: 40 min, GR: 70 min

() marking symbol

Marking





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20070701-EN GENERAL

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