Unit: mm

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

2SA1313

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

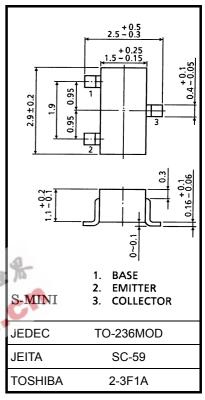
• Excellent hFE linearity: hFE (2) = 25 (min)

at
$$V_{CE} = -6 \text{ V}$$
, $I_{C} = -400 \text{ mA}$

- High voltage: $V_{CEO} = -50 \text{ V (min)}$
- Complementary to 2SC3325
- Small package

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-50	V
Collector-emitter voltage	V _{CEO}	-50	V
Emitter-base voltage	V _{EBO}	-5	V
Collector current	IC	-500	mA
Base current	lΒ	-50	mA
Collector power dissipation	Pc	200	mW
Junction temperature	Tj	150	°C
Storage temperature range	T _{stg}	− 55~150	°C



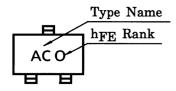
Weight: 0.012 g (typ.)

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).

1

Marking



2SA1313



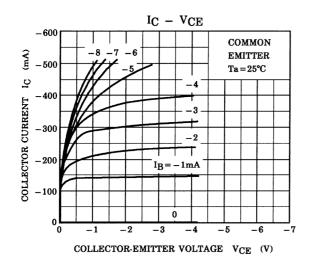
Electrical Characteristics (Ta = 25°C)

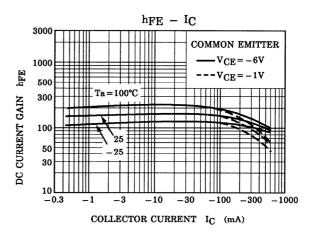
Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I _{CBO}	$V_{CB} = -50 \text{ V}, I_E = 0$	_	_	-0.1	μА
Emitter cut-off current	I _{EBO}	$V_{EB} = -5 \text{ V}, I_C = 0$	_	_	-0.1	μА
DC current gain	h _{FE (1)} (Note)	V _{CE} = -1 V, I _C = -100 mA	70	_	240	
	h _{FE (2)} (Note)	V _{CE} = -6 V, I _C = -400 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	$V_{CE} = -6 \text{ V}, I_{C} = -20 \text{ mA}$	_	200	_	MHz
Collector output capacitance	C _{ob}	$V_{CB} = -6 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	_	13	_	pF

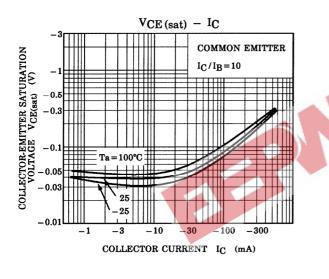
Note: $h_{FE\ (1)}$ classification O: 70~140, Y: 120~240

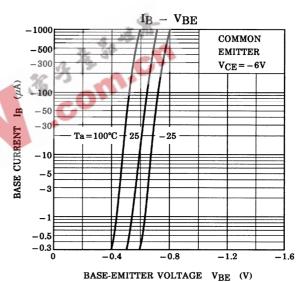
h_{FE (2)} classification O: 25 (min), Y: 40 (min)











PC - Ta

NOLLY 400

400

William 300

100

25 50 75 100 125 150 175

AMBIENT TEMPERATURE Ta (°C)

3 2007-11-01

RESTRICTIONS ON PRODUCT USE

20070701-EN GENERAL

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