TOSHIBA Transistor Silicon PNP Epitaxial (PCT process)

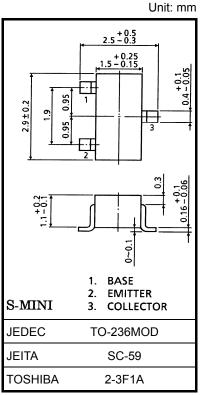
# 2SA1298

# Low Frequency Power Amplifier Application Power Switching Applications

- High DC current gain: hFE = 100 to 320
- Low saturation voltage:  $V_{CE (sat)} = -0.4 \text{ V (max)}$  ( $I_{C} = -500 \text{ mA}, I_{B} = -20 \text{ mA}$ )
- Suitable for driver stage of small motor
- Complementary to 2SC3265
- Small package

### Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	-30	V
Collector-emitter voltage	V <sub>CEO</sub>	-25	V
Emitter-base voltage	V <sub>EBO</sub>	-5	V
Collector current	IC	-800	mA
Base current	ΙΒ	-160	mA
Collector power dissipation	PC	200	mW
Junction temperature	Tj	150	°C
Storage temperature range	T <sub>stg</sub>	-55 to 150	°C

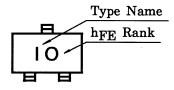


Weight: 0.012 g (typ.)

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).

#### Marking



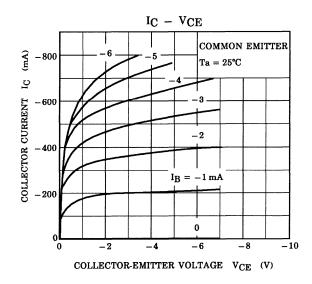


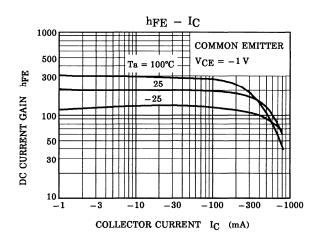
## Electrical Characteristics (Ta = 25°C)

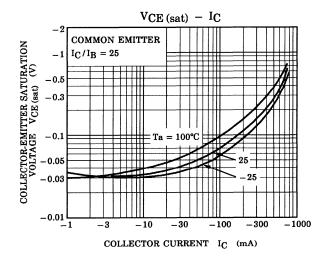
Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I <sub>CBO</sub>	$V_{CB} = -30 \text{ V}, I_E = 0$	_	_	-0.1	μА
Emitter cut-off current	I <sub>EBO</sub>	$V_{EB} = -50 \text{ V}, I_{C} = 0$	_	_	-0.1	μА
Collector-emitter breakdown voltage	V <sub>(BR)</sub> CEO	$I_C = -10 \text{ mA}, I_B = 0$	-25	_	_	V
Emitter-base breakdown voltage	V <sub>(BR)</sub> EBO	$I_E = -0.1 \text{ mA}, I_C = 0$	-5	_	_	٧
DC current gain	h <sub>FE (1)</sub> (Note)	V <sub>CE</sub> = -1 V, I <sub>C</sub> = -100 mA	100	_	320	
	h <sub>FE (2)</sub>	$V_{CE} = -1 \text{ V, } I_{C} = -800 \text{ mA}$	40	_	_	
Collector-emitter saturation voltage	V <sub>CE</sub> (sat)	$I_C = -500 \text{ mA}, I_B = -20 \text{ mA}$	_	_	-0.4	٧
Base-emitter voltage	V <sub>BE</sub>	$V_{CE} = -1 \text{ V, } I_{C} = -10 \text{ mA}$	-0.5	_	-0.8	٧
Transition frequency	f <sub>T</sub>	$V_{CE} = -5 \text{ V}, I_{C} = -10 \text{ mA}$	_	120	_	MHz
Collector output capacitance	C <sub>ob</sub>	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	_	13	_	pF

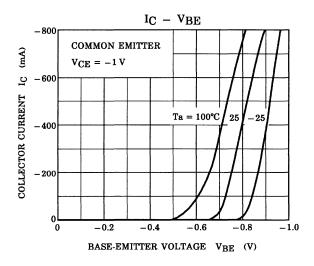
Note:  $h_{FE\ (1)}$  classification O: 100 to 200, Y: 160 to 320

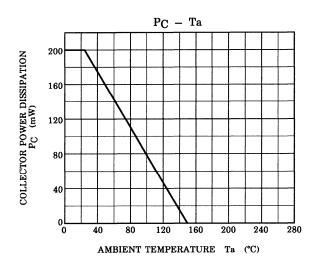
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