

TOSHIBA Transistor Silicon PNP Epitaxial (PCT process)

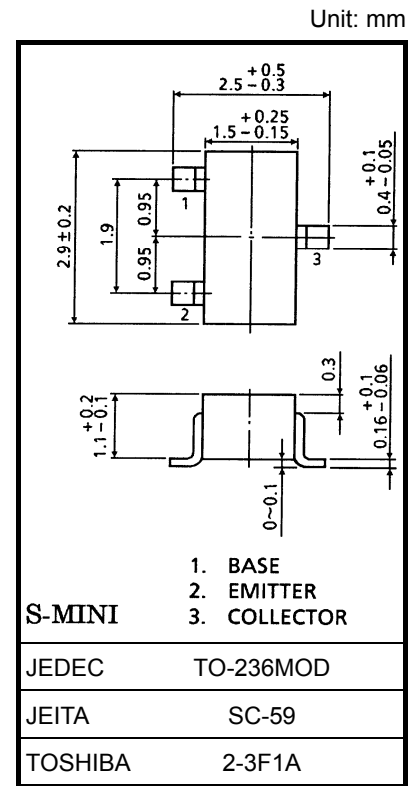
2SA1298

Low Frequency Power Amplifier Application
Power Switching Applications

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

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

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-30	V
Collector-emitter voltage	V_{CEO}	-25	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-800	mA
Base current	I_B	-160	mA
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 150	$^\circ\text{C}$

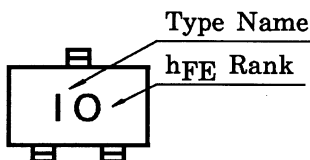


Weight: 0.012 g (typ.)

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

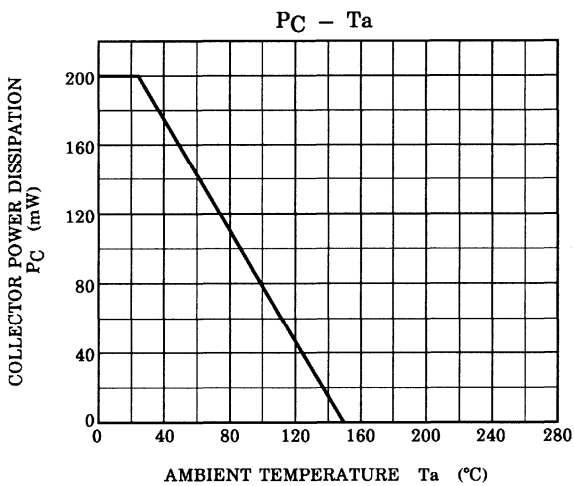
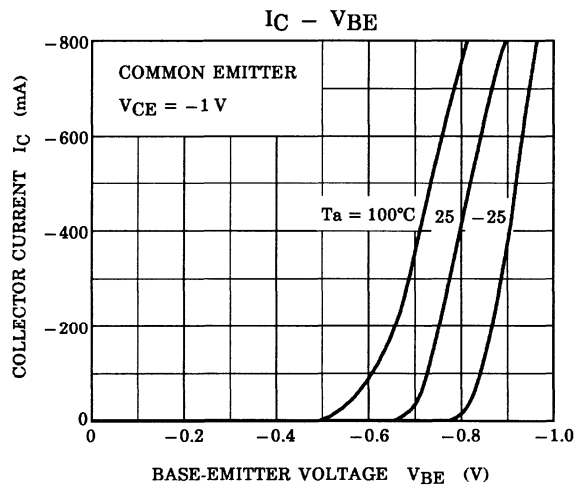
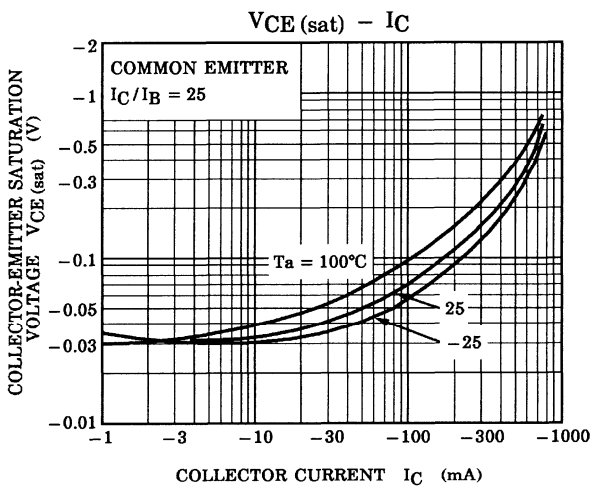
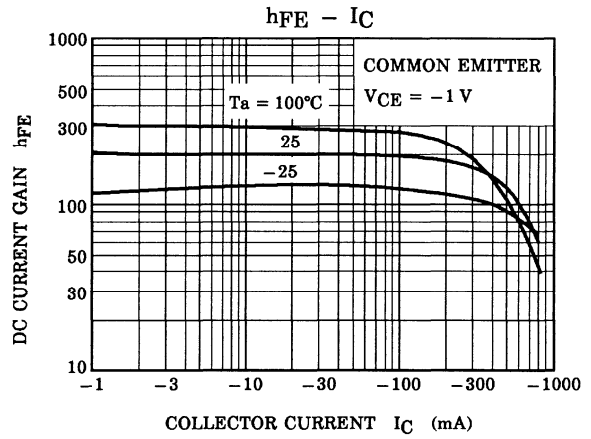
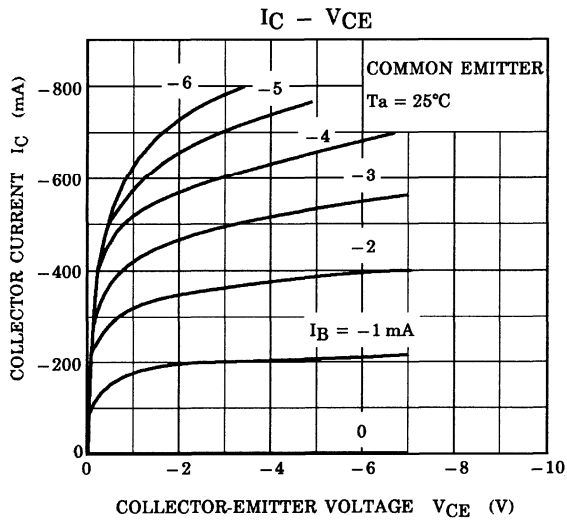


Start of commercial production
1982-10

Electrical Characteristics (Ta = 25°C)

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

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



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