TOSHIBA Transistor Silicon PNP Epitaxial Type

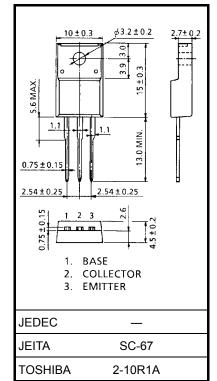
# 2SA1930

#### Power Amplifier Applications Driver Stage Amplifier Applications

- High transition frequency:  $f_T = 200 \text{ MHz}$  (typ.)
- Complementary to 2SC5171

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

Characteristics		Symbol	Rating	Unit	
Collector-base voltage		V <sub>CBO</sub>	-180	V	
Collector-emitter voltage		V <sub>CEO</sub>	-180	V	
Emitter-base voltage		V <sub>EBO</sub>	-5	V	
Collector current		Ι <sub>C</sub>	-2	А	
Base current		Ι <sub>Β</sub>	-1	А	
Collector power dissipation	Ta = 25°C	Pc	2.0	W	
	Tc = 25°C	FC	20		
Junction temperature		Тј	150	°C	
Storage temperature range		T <sub>stg</sub>	−55 to 150	°C	



Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in

Weight: 1.7 g (typ.)

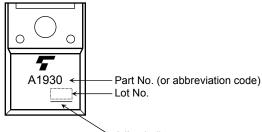
temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings. Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Unit: mm

## Electrical Characteristics (Tc = 25°C)

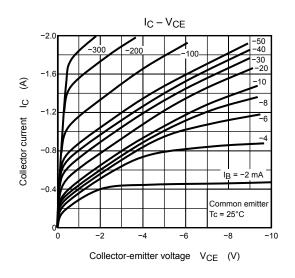
Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I <sub>CBO</sub>	$V_{CB} = -180 \text{ V}, \text{ I}_{E} = 0$	_	_	-5.0	μA
Emitter cut-off current	I <sub>EBO</sub>	$V_{EB} = -5 V, I_{C} = 0$	_	_	-5.0	μA
Collector-emitter breakdown voltage	V (BR) CEO	I <sub>C</sub> = -10 mA, I <sub>B</sub> = 0	-180	_	_	V
DC current gain	h <sub>FE</sub> (1)	$V_{CE} = -5 V, I_C = -0.1 A$	100	_	320	
	h <sub>FE</sub> (2)	$V_{CE} = -5 V, I_C = -1 A$	50	_	_	
Collector-emitter saturation voltage	V <sub>CE (sat)</sub>	I <sub>C</sub> = -1 A, I <sub>B</sub> = -0.1 A	_	-0.24	-1.0	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = -5 V, I <sub>C</sub> = -1 A	_	-0.68	-1.5	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = -10 V, I <sub>C</sub> = -0.3 A	_	200	_	MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = −10 V, I <sub>C</sub> = 0, f = 1 MHz	_	26	_	pF

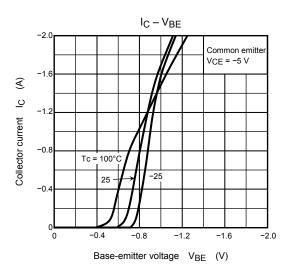
## Marking

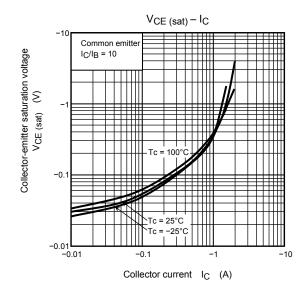


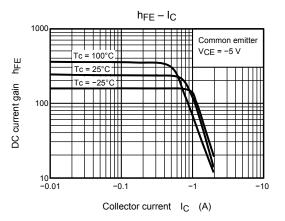
A line indicates lead (Pb)-free package or lead (Pb)-free finish.

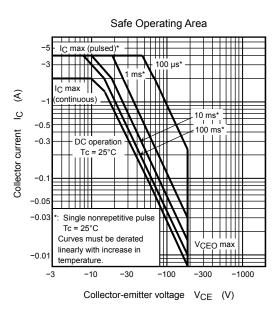
# TOSHIBA

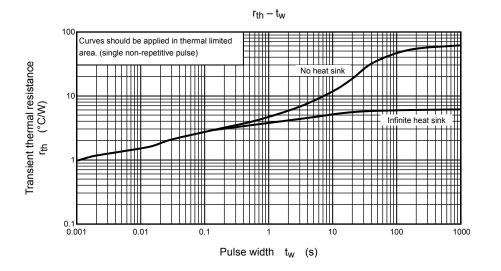












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