

# TRANSISTOR (NPN)

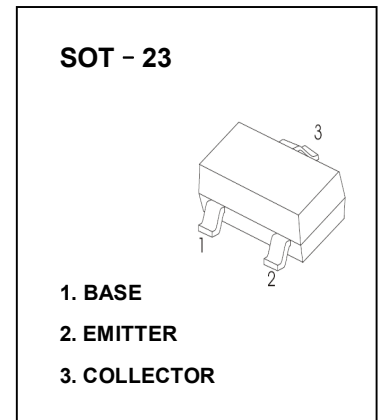
## FEATURES

- Switching Application

**MARKING:ZC**

## MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	30	V
V <sub>CEO</sub>	Collector-Emitter Voltage	25	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current	200	mA
P <sub>C</sub>	Collector Power Dissipation	330	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	378	°C/W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55~+150	°C



## ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =10μA, I <sub>E</sub> =0	30			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO*</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	25			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0	5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =20V, I <sub>E</sub> =0			50	nA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =3V, I <sub>C</sub> =0			50	nA
DC current gain	h <sub>FE(1)</sub> *	V <sub>CE</sub> =1V, I <sub>C</sub> =2mA	120		360	
	h <sub>FE(2)</sub> *	V <sub>CE</sub> =1V, I <sub>C</sub> =50mA	60			
Collector-emitter saturation voltage	V <sub>CE(sat)*</sub>	I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			0.3	V
Base-emitter saturation voltage	V <sub>BE(sat)*</sub>	I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			0.95	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =20V, I <sub>C</sub> =10mA, f=100MHz	300			MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =5V, I <sub>E</sub> =0, f=140KHz			4	pF
Emitter input capacitance	C <sub>ib</sub>	V <sub>BE</sub> =0.5V, I <sub>E</sub> =0, f=140KHz			8	pF

\*Pulse test