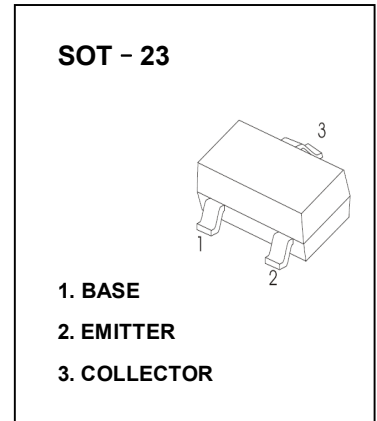


# TRANSISTOR (NPN)

## FEATURES

- High Collector Current
- High Current Gain

**MARKING:FF**



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

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	40	V
V <sub>CEO</sub>	Collector-Emitter Voltage	30	V
V <sub>EBO</sub>	Emitter-Base Voltage	10	V
I <sub>C</sub>	Collector Current	500	mA
P <sub>C</sub>	Collector Power Dissipation	300	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	416	°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> =100μA, I <sub>E</sub> =0	40			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =0	30			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0	10			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =30V, I <sub>E</sub> =0			0.1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>C</sub> =0			0.1	μA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =100μA	4000			
	h <sub>FE(2)</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA	10000			
	h <sub>FE(3)</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =100mA	20000			
	h <sub>FE(4)</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =0.5A	4000			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =0.1mA			1	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =0.1mA			1.5	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =50mA, f=100MHz		170		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz		3.5		pF