

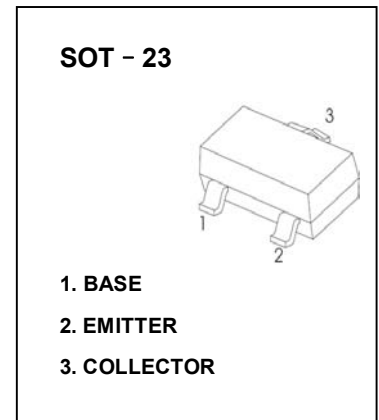
# TRANSISTOR (NPN)

## FEATURES

- Low Collector To Emitter Saturation Voltage
- Mini Type Package

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

Symbol	Parameter	Value	Unit
V <sub>CBO</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	500	mA
P <sub>C</sub>	Collector Power Dissipation	200	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	625	°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> =10mA, 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			0.1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			0.1	μA
DC current gain	h <sub>FE(1)</sub> *	V <sub>CE</sub> =10V, I <sub>C</sub> =0.15A	85		340	
	h <sub>FE(2)</sub> *	V <sub>CE</sub> =10V, I <sub>C</sub> =0.5A	40			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub> *	I <sub>C</sub> =0.3A, I <sub>B</sub> =0.03A			0.6	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.05A, f=200MHz		200		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz			15	pF

\*Pulse test: pulse width ≤350μs, duty cycle ≤ 2.0%.

## CLASSIFICATION OF h<sub>FE(1)</sub>

RANK	Q	R	S
RANGE	85 - 170	120 - 240	170 - 340
MARKING	WQ1	WR1	WS1