

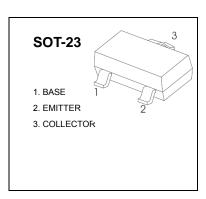
## TRANSISTOR(NPN)

## **FEATURES**

- Complementary to S9012
- Excellent h<sub>FE</sub> linearity

**MARKING: J3** 

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



Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	40	V
V <sub>CEO</sub>	Collector-Emitter Voltage	25	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
Ic	Collector Current -Continuous	500	mA
Pc	Collector Power Dissipation	300	mW
Tj	Junction Temperature	150	℃
T <sub>stg</sub>	Storage Temperature	-55-150	°C

## ELECTRICAL CHARACTERISTICS (Tamb=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> = 100μΑ, I <sub>E</sub> =0	40			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 0.1mA, I <sub>B</sub> =0	25			٧
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100μΑ, I <sub>C</sub> =0	5			٧
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =40V, 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	μΑ
DC augment main	h <sub>FE(1)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> = 50mA	120		400	
DC current gain	h <sub>FE(2)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =500mA	40			
Collector-emitter saturation voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> =500mA, I <sub>B</sub> = 50mA			0.6	٧
Base-emitter saturation voltage	V <sub>BE</sub> (sat)	I <sub>C</sub> =500mA, I <sub>B</sub> = 50mA			1.2	٧
Transition frequency	f⊤	V <sub>CE</sub> =6V, I <sub>C</sub> = 20mA f=30MHz	150			MHz

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

Rank	L	Н	J
Range	120-200	200-350	300-400



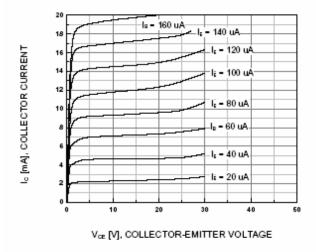


Figure 1. Static Characteristic

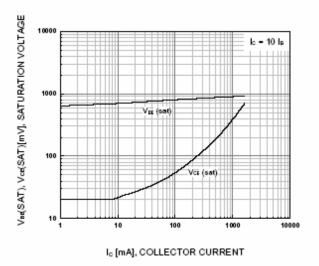


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

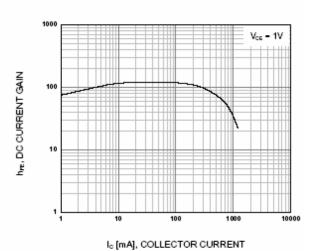


Figure 2. DC current Gain

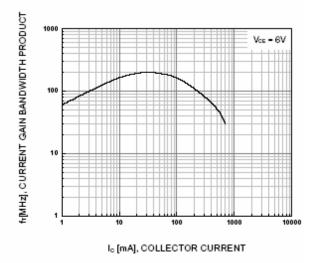


Figure 4. Current Gain Bandwidth Product

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