

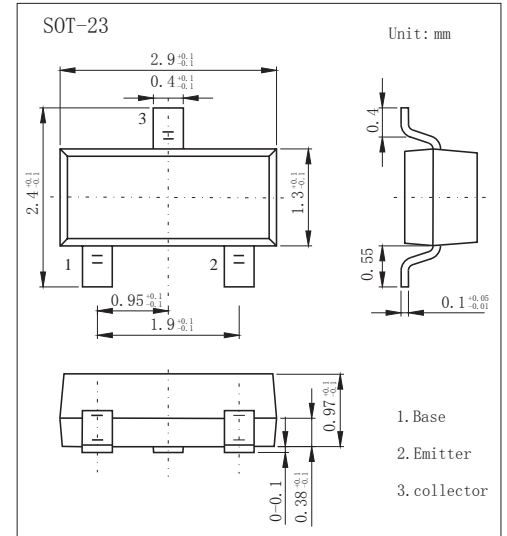
## SOT-23 Plastic-Encapsulate Transistors

### FEATURES

- Excellent HFE Linearity.
- High DC current gain.
- High Power Dissipation.
- Audio output driver amplifier.
- General purpose switch.
- NPN Silicon Epitaxial Planar Transistor

### MECHANICAL DATA

- Case style:SOT-23molded plastic
- Mounting position:any



## MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Symbol	Parameter	Value	Units
V <sub>CB0</sub>	Collector-Base Voltage	40	V
V <sub>CEO</sub>	Collector-Emitter Voltage	20	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current -Continuous	1	A
I <sub>B</sub>	Base current	0.4	A
P <sub>C</sub>	Collector Power Dissipation	200	mW
T <sub>J</sub> , T <sub>stg</sub>	Junction and Storage Temperature	-55 to +150	°C

### PACKAGE INFORMATION

Device	Package	Shipping
M28S	SOT-23	3000/Tape&Reel

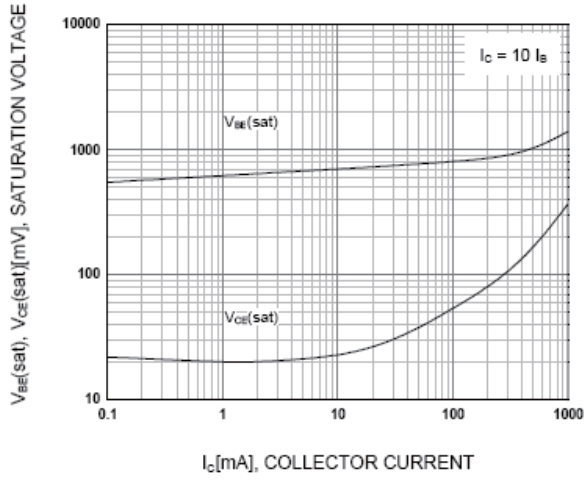
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =100μA, I <sub>E</sub> =0	40			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	20			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100μA, I <sub>C</sub> =0	6			V
Collector cut-off current	I <sub>CB0</sub>	V <sub>CB</sub> =35V, 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</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =1mA	290		1000	
		V <sub>CE</sub> =1V, I <sub>C</sub> =0.1A	300			
		V <sub>CE</sub> =1V, I <sub>C</sub> =0.3A	300			
		V <sub>CE</sub> =1V, I <sub>C</sub> =0.5A	300			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =600mA, I <sub>B</sub> =20mA			0.55	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =50mA, f=1MHz	100			MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz		9		pF

### CLASSIFICATION OF h<sub>FE2</sub>

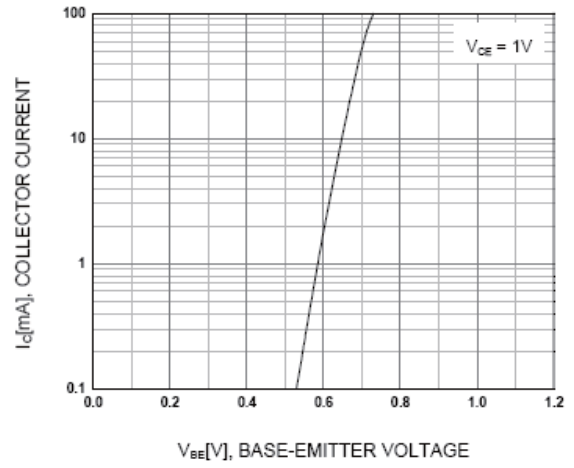
Rank	B	C	D
Range	300-550	500-700	650-1000



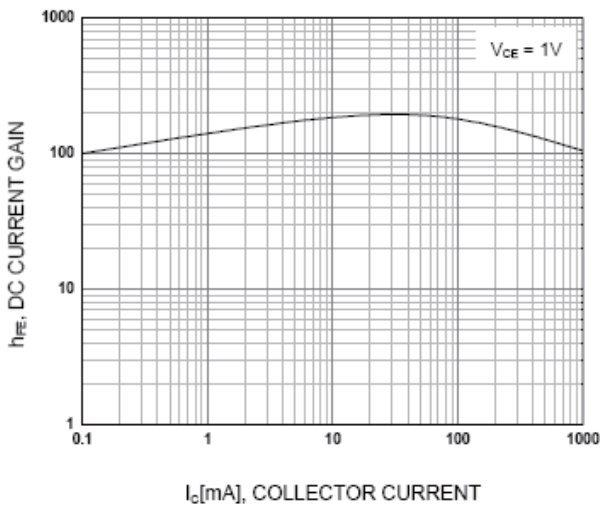
# RATINGS AND CHARACTERISTIC CURVES



**Figure 1. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



**Figure 2. Base-Emitter On Voltage**



**Figure 3. DC current Gain**