

**NPN Transistors**

—NPN Silicon—

**■ ■ APPLICATION:** Low Frequency Amplifier Applications.

**■ ■ MAXIMUM RATINGS** (Ta=25°C)

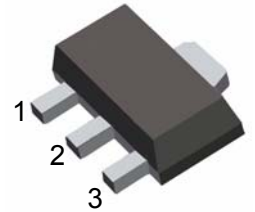
PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage	V <sub>CB0</sub>	40	V
Collector-emitter voltage	V <sub>CEO</sub>	20	V
Emitter-base voltage	V <sub>EB0</sub>	6	V
Collector current	I <sub>c</sub>	3	A
Collector current (Pulse)	I <sub>cp</sub>	5	A
Collector Power Dissipation	P <sub>c</sub>	0.5	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55~150	°C

**SOT-89**

1. BASE

2. COLLECTOR

3. EMITTER


**■ ■ ELECTRICAL CHARACTERISTICS** (Ta=25°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Collector-Base Breakdown Voltage	BV <sub>cbo</sub>	40			V	I <sub>c</sub> =50uA I <sub>e</sub> =0
Collector-Emitter Breakdown Voltage	BV <sub>ceo</sub>	20			V	I <sub>c</sub> =1mA I <sub>b</sub> =0
Emitter-Base Breakdown Voltage	BV <sub>ebo</sub>	6			V	I <sub>e</sub> =50uA I <sub>c</sub> =0
Collector Cut-off Current	I <sub>cbo</sub>			0.1	uA	V <sub>cb</sub> =30V I <sub>e</sub> =0
Emitter Cut-off Current	I <sub>ebo</sub>			0.1	uA	V <sub>eb</sub> =5V I <sub>c</sub> =0
Collector-Emitter Saturation Voltage	V <sub>ce(sat)</sub>		0.2	0.5	V	I <sub>c</sub> =2A I <sub>b</sub> =0.1A
DC Current Gain	h <sub>FE</sub>	180		560	β	V <sub>ce</sub> =2V I <sub>c</sub> =0.1A
Gain bandwidth product	f <sub>T</sub>		290		MHz	V <sub>ce</sub> =2V I <sub>e</sub> =-0.5A f=100MHz
Common Base Output Capacitance	C <sub>ob</sub>		25		pF	V <sub>cb</sub> =10 V I <sub>e</sub> =0 f=1MHz

**■ ■ h<sub>FE</sub> Classification And Marking**

Print Mark	CFR	CFS
Classification	R	S
h <sub>FE</sub>	180~390	270~560