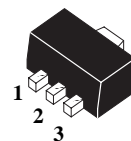


**NPN Epitaxial Planar Transistors**
 **Lead(Pb)-Free**

1. BASE  
2. COLLECTOR  
3. EMITTER

**SOT-89**
**ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C)**

Rating	Symbol	Limits	Unit
Collector-Base Voltage	V <sub>CBO</sub>	40	V
Collector-Emitter Voltage	V <sub>CEO</sub>	32	V
Emitter-Base Voltage	V <sub>EBO</sub>	5.0	V
Collector Current	I <sub>C</sub>	1.0	A
Collector Power Dissipation	P <sub>D</sub>	0.5	W
Junction Temperature	T <sub>j</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

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

Parameter	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage I <sub>C</sub> =50μA, I <sub>E</sub> =0	BV <sub>CBO</sub>	40	-	-	V
Collector-Emitter Breakdown Voltage I <sub>C</sub> =1mA, I <sub>B</sub> =0	BV <sub>CEO</sub>	32	-	-	V
Emitter-Base Breakdown Voltage I <sub>E</sub> =50μA, I <sub>C</sub> =0	BV <sub>EBO</sub>	5	-	-	V
Collector Cutoff Current V <sub>CB</sub> =20V, I <sub>E</sub> =0	I <sub>CBO</sub>	-	-	0.5	μA
Collector Cutoff Current V <sub>EB</sub> =4V, I <sub>C</sub> =0	I <sub>EBO</sub>	-	-	0.5	μA

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C Unless otherwise noted)**

Characteristic	Symbol	Min	Typ	Max	Unit
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**ON CHARACTERISTICS**

DC Current Gain V <sub>CE</sub> =3V, I <sub>C</sub> =100mA	h <sub>FE</sub>	82	-	390	-
Collector-Emitter Saturation Voltage I <sub>C</sub> =0.5A, I <sub>B</sub> =50mA	V <sub>CE(sat)</sub>	-	-	0.4	V

**DYNAMIC CHARACTERISTICS**

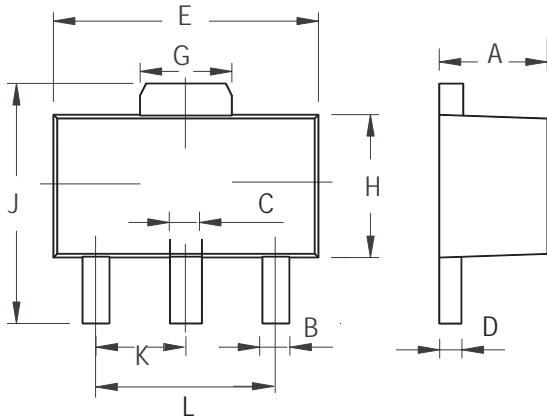
Transition Frequency V <sub>CE</sub> =5V, I <sub>C</sub> =50mA f=100MHz	f <sub>T</sub>	-	150	-	MHz
Output Capacitance V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz	C <sub>ob</sub>	-	15	-	pF

**CLASSIFICATION OF h<sub>FE</sub>**

Rank	P	Q	R
Range	82-180	120-270	180-390
Marking	DAP	DAQ	DAR

**SOT-89 Outline Dimensions**

unit:mm



<b>SOT-89</b>		
<b>Dim</b>	<b>Min</b>	<b>Max</b>
<b>A</b>	1.400	1.600
<b>B</b>	0.320	0.520
<b>C</b>	0.360	0.560
<b>D</b>	0.350	0.440
<b>E</b>	4.400	4.600
<b>G</b>	1.400	1.800
<b>H</b>	2.300	2.600
<b>J</b>	3.940	4.250
<b>K</b>	1.500 TYP	
<b>L</b>	2.900	3.100