

/ Descriptions

SOT-89 PNP Silicon PNP transistor in a SOT-89 Plastic Package.

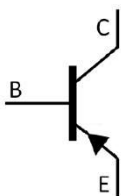
/ Features

Low $V_{CE(sat)}$, excellent DC current gain characteristics.

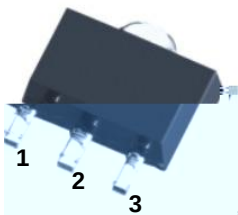
/ Applications

General purpose amplifier.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ Marking

h_{FE} Classifications Symbol	Q	R
h_{FE} Range	120 270	180 390
Marking	HAEQ*	HAER*

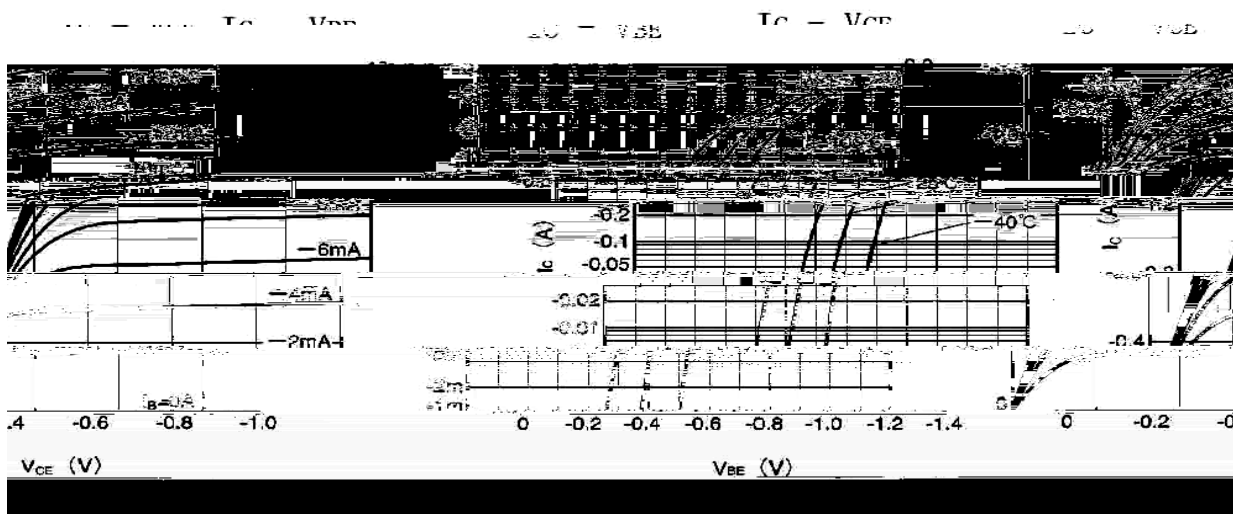
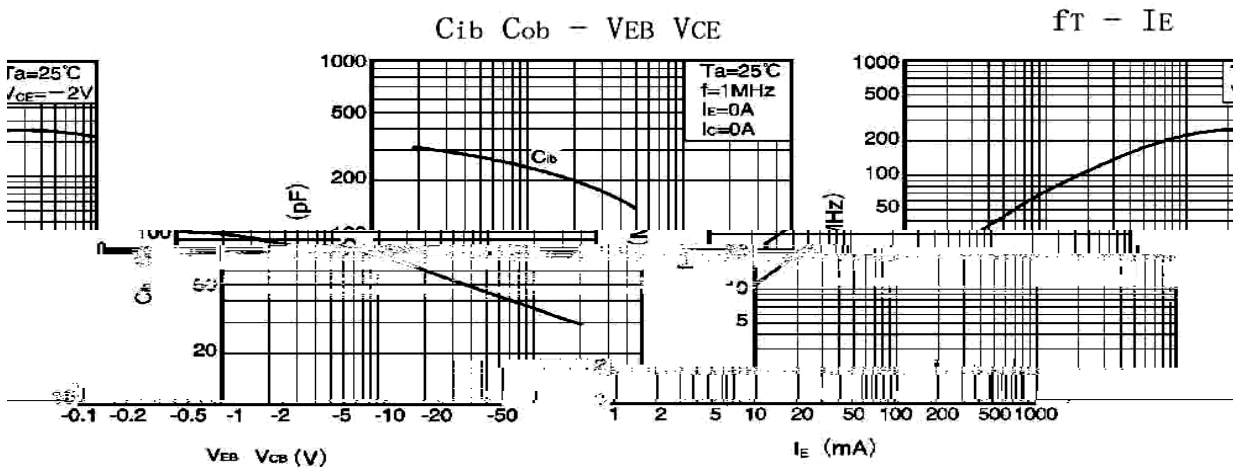
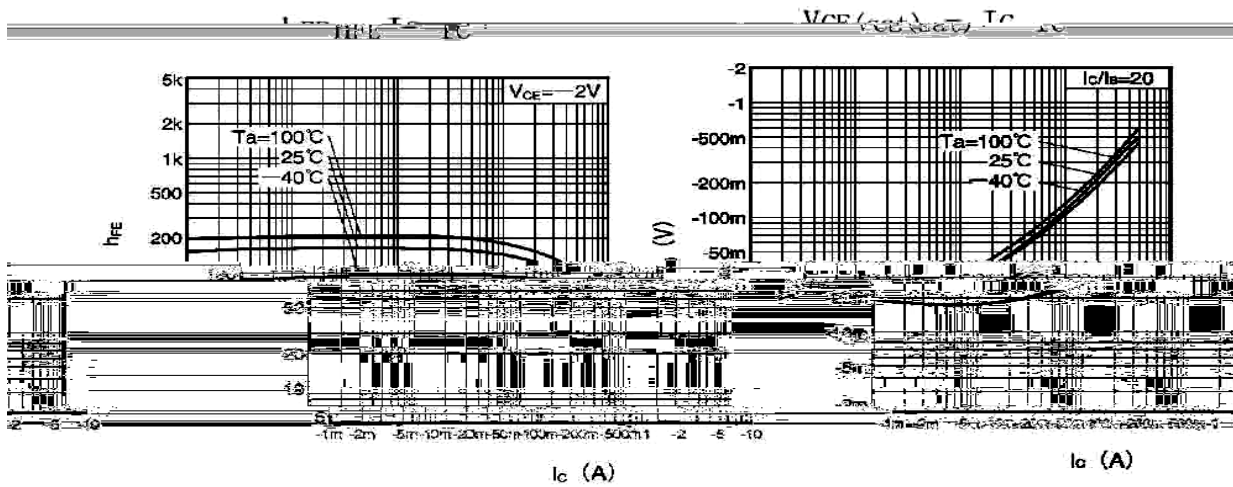
/ Absolute Maximum Ratings(Ta=25 –)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-20	V
Collector to Emitter Voltage	V_{CEO}	-20	V
Emitter to Base Voltage	V_{EBO}	-6.0	V
Collector Current-Continuous	I_C	-3.0	A
Collector Current -Continuous(Pulse)	I_{CP}	-5.0	A
Collector Power Dissipation	P_C	0.6	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

/ Electrical Characteristics(Ta=25 –)

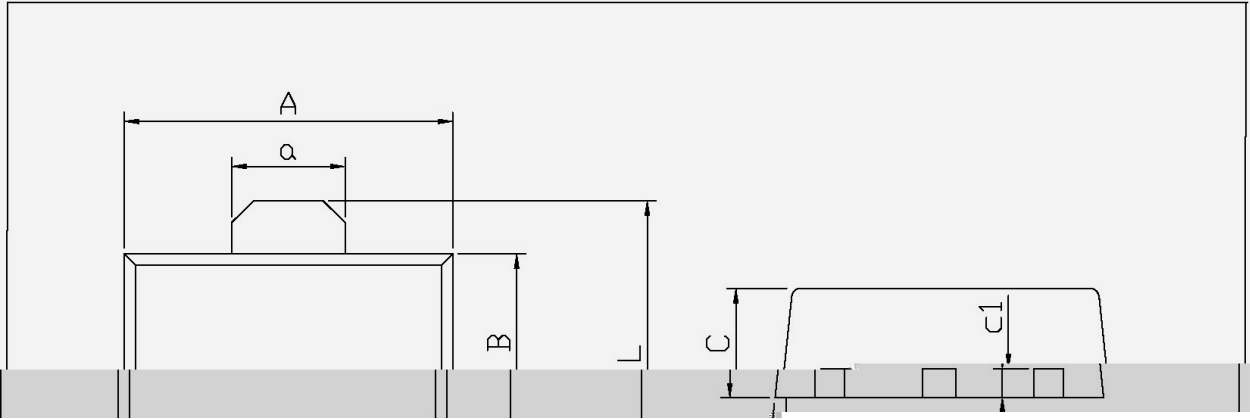
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=-50\text{ A}$ $I_E=0$	-20			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=-1.0\text{mA}$ $I_B=0$	-20			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=-50\text{ A}$ $I_C=0$	-6.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-20\text{V}$ $I_E=0$			-0.1	A
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=-5.0\text{V}$ $I_C=0$			-0.1	A
DC Current Gain	h_{FE}	$V_{CE}=-2.0\text{V}$ $I_C=-0.1\text{A}$	120		390	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-2.0\text{A}$ $I_B=-0.1\text{A}$			-0.5	V
Transition Frequency	f_T	$V_{CE}=-2.0\text{V}$ $I_C=-0.5\text{A}$ $f=100\text{MHz}$		240		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}$ $I_E=0$ $f=1.0\text{MHz}$		35		pF

/ Electrical Characteristic Curve



/ Package Dimensions

SOT-89 单位: mm



Dimensions in Millimeters			Dimensions in Millimeters		
Symbol	Min	Max	Symbol	Min	Max

/ Marking Instructions



H

AE

Q: h_{FE}

**

Note:

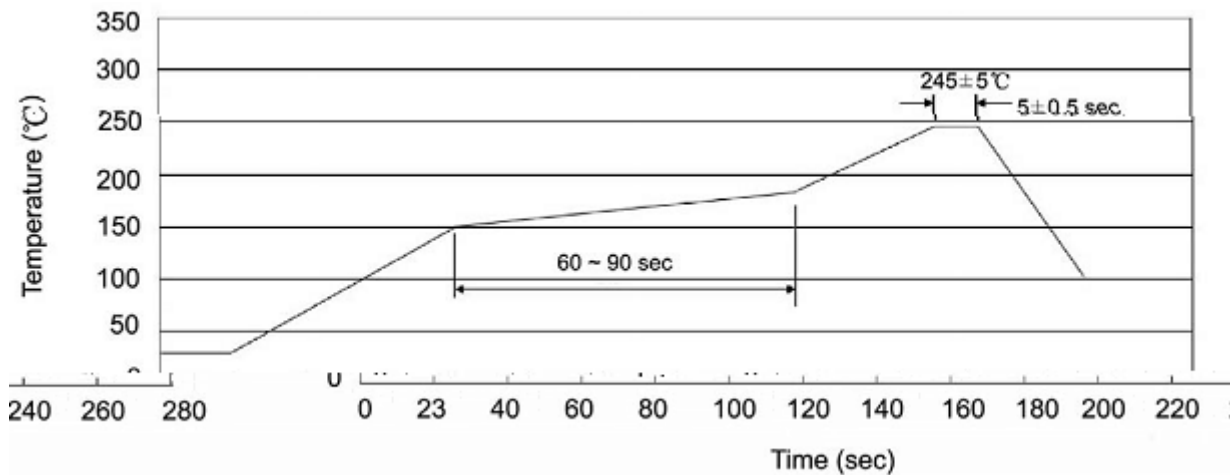
H: Company Code.

AE: Product Type.

Q: h_{FE} Classifications Symbol

**: Lot No. Code, code change with Lot No.

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Note:

- | | | | | | |
|---|-------|-----|-----------|--------|---|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 245±5 | | 5±0.5sec; | | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	只 卷盘	卷盘 盒	只 盒	盒 箱	只 箱		盒	箱

/ Notices