

/ Descriptions

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

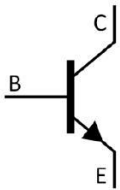
/ Features

Low noise and high gain, large P_C in small package.

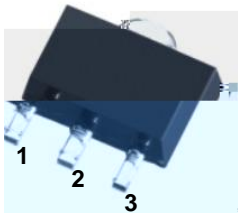
/ Applications

low noise amplifier at VHF, UHF and CATV band applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ Marking

h_{FE} Classifications Symbol	H	F	E	G
h_{FE} Range	50 100	80 160	125 250	200 300
Marking	HRH * **	HRF * **	HRE * **	HRG * **

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	20	V
Collector to Emitter Voltage	V_{CEO}	12	V
Emitter to Base Voltage	V_{EBO}	3.0	V
Collector Current - Continuous	I_C	100	mA
Collector Power Dissipation	P_C	350	mW
Collector Power Dissipation	* P_C	1.2	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

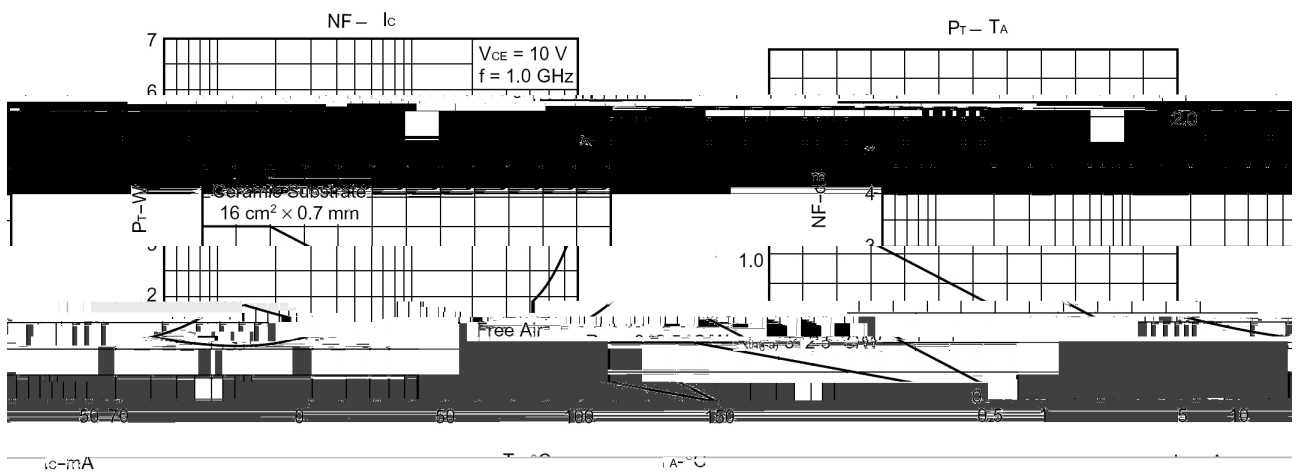
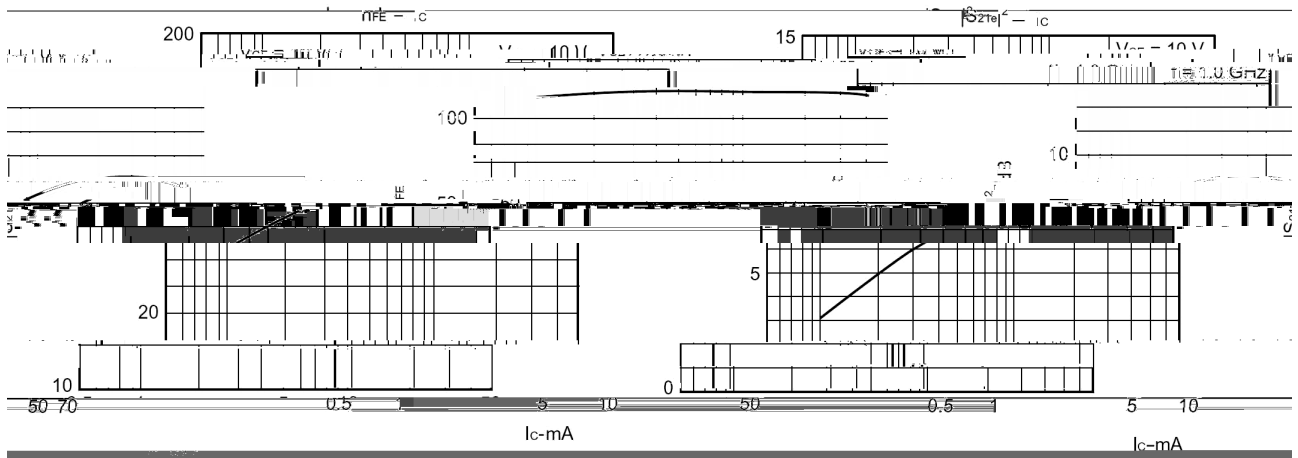
*:mounted on 16cm²×7mm ceramic substrate.

*: 16cm²×7mm

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=10V$ $I_E=0$			1.0	μA
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=1.0V$ $I_C=0$			1.0	μA
DC Current Gain	h_{FE}	$V_{CE}=10V$ $I_C=20mA$	50	120	300	
Transition Frequency	f_T	$V_{CE}=10V$ $I_C=20mA$		6.5		GHz
Feed-Back Capacitance	C_{re}	$V_{CB}=10V$ $I_E=0$ $f=1.0MHz$		0.65	1.0	pF
Noise Figure	$NF_{(1)}$	$V_{CE}=10V$ $I_C=7.0mA$ $f=1.0GHz$		1.1		dB
	$NF_{(2)}$	$V_{CE}=10V$ $I_C=40mA$ $f=1.0GHz$		1.8	3.0	dB

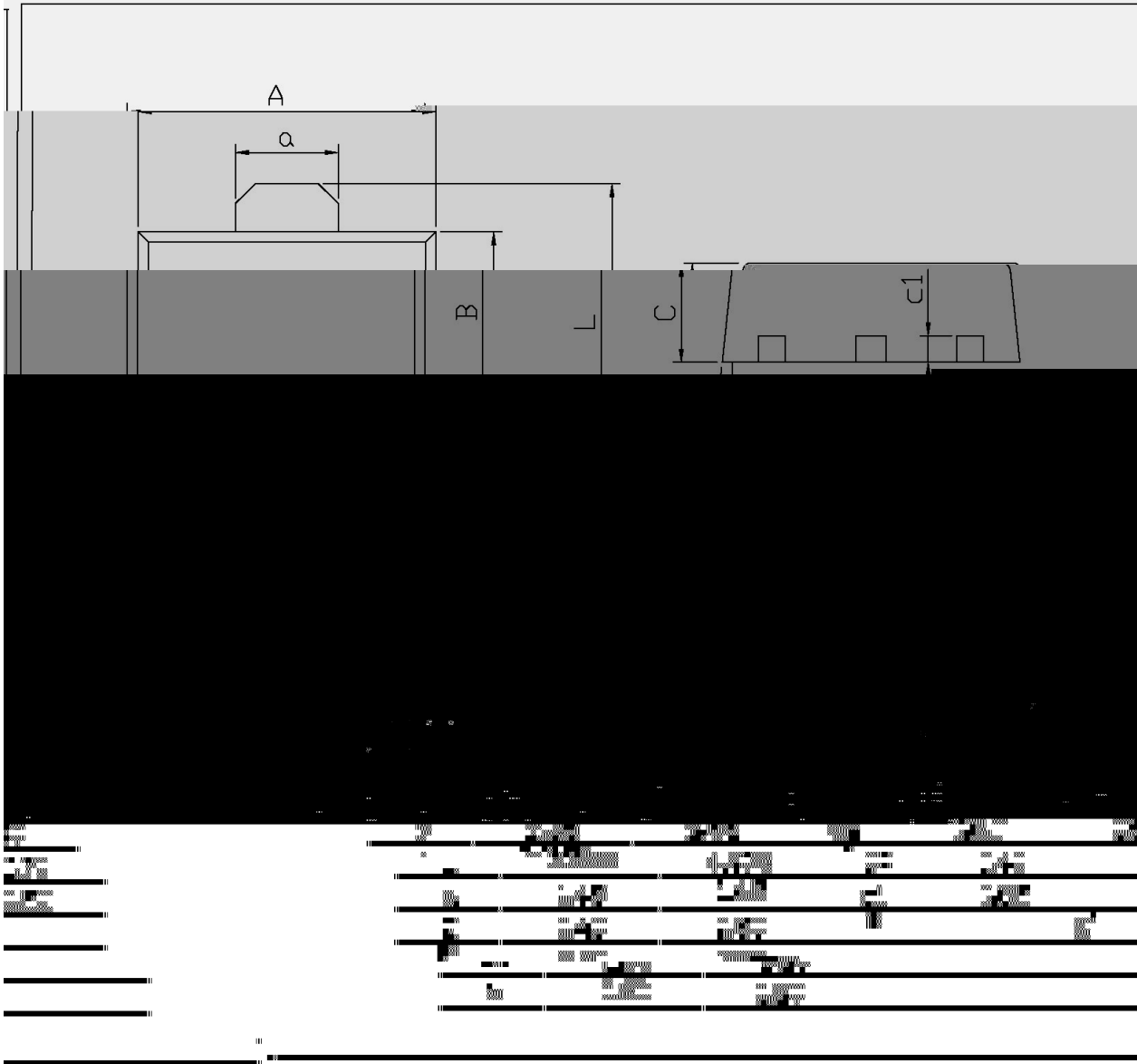
/ Electrical Characteristic Curve



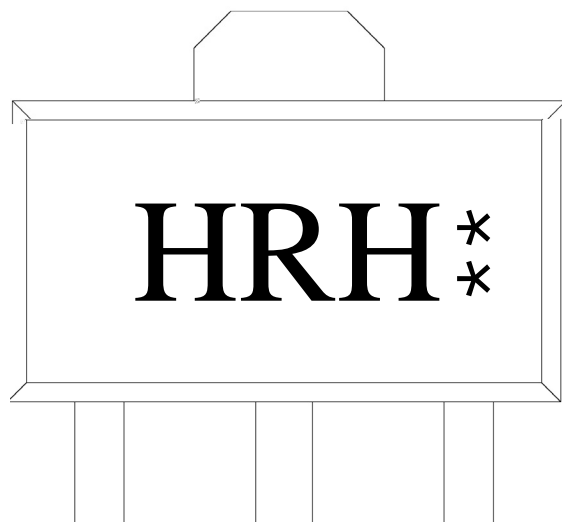
/ Package Dimensions

SOT-89

单位: mm



/ Marking Instructions



H

R

H

**

Note:

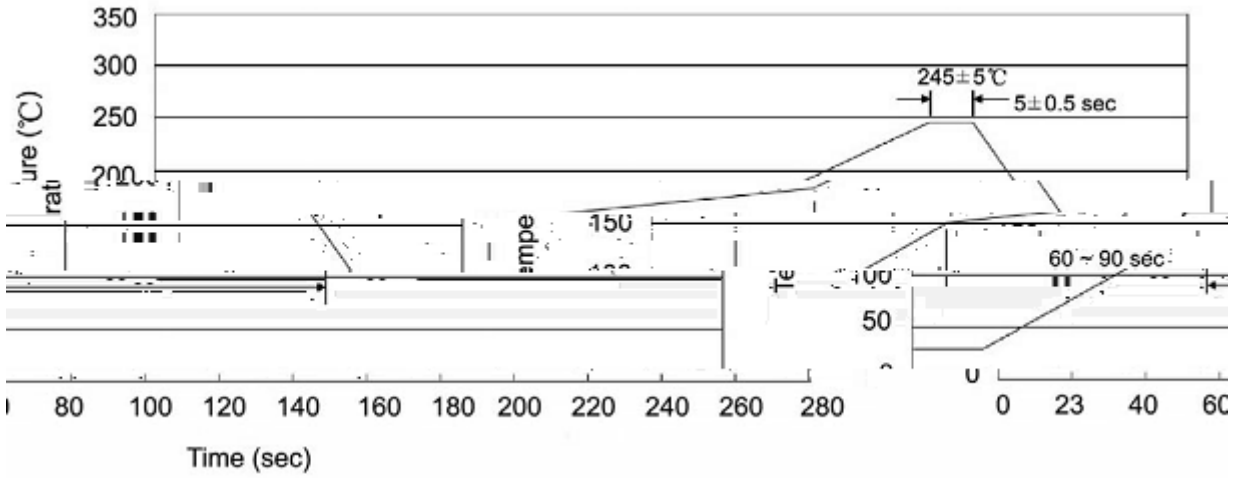
H: Company Code.

R: Product Type.

H h_{FE} Classifications Symbol

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

() / K\d g\iXk i\`Gif]`d`]fi`@`I` \]f n`Jf d` \i`e`^ZGY\$`i`\\z



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	Units					Dimension (unit mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-89	1,000	7	7,000	8	56,000	7 ×12	180×120×180	385×257×392

/ Notices