/ Descriptions

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

/ Features

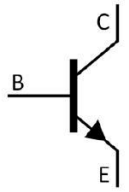
, ,

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

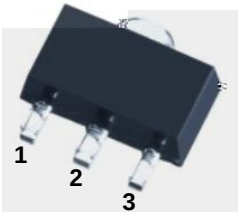
/ Applications

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	

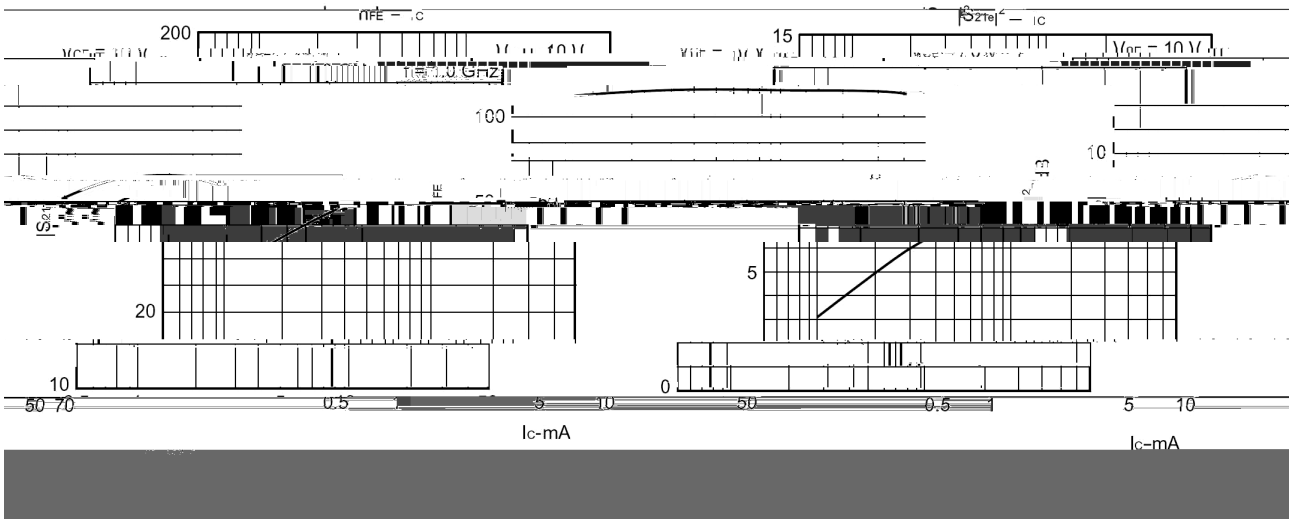
*:mounted on 16cm^2×7mm ceramic substrate.

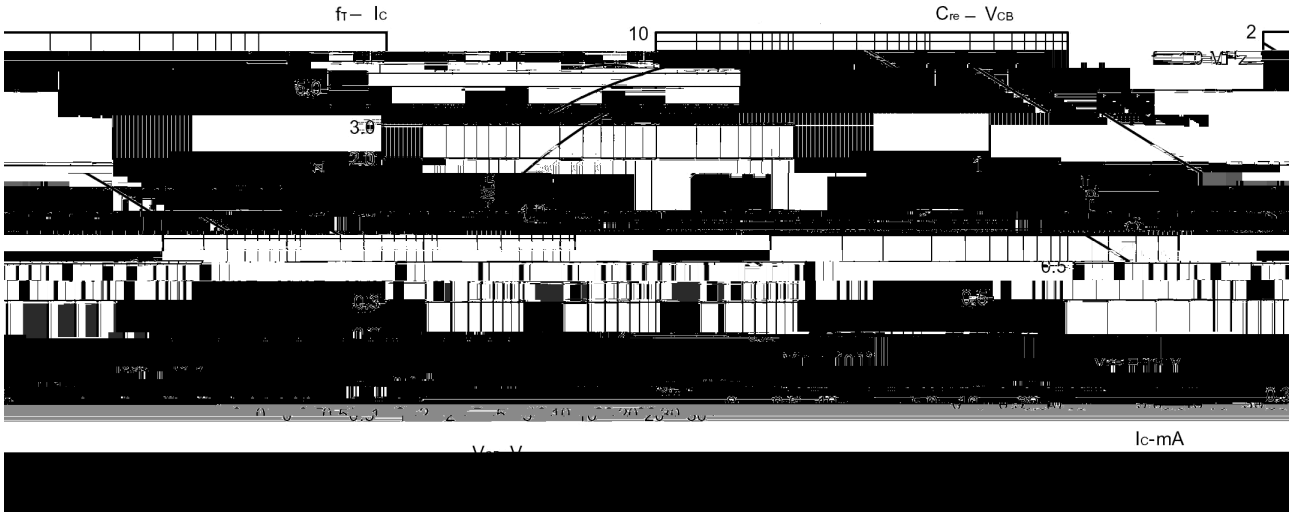
*: 16cm^2×7mm

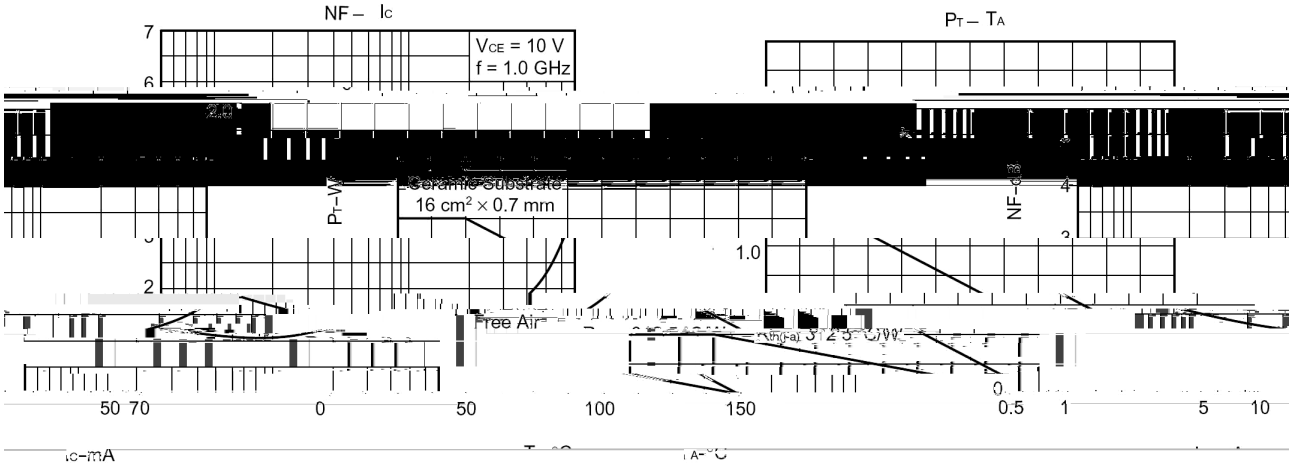
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	V_{CB}=10V I_E=0			1.0	A
Emitter Base Cut-Off Current	I_{EBO}	V_{EB}=1.0V I_C=0			1.0	A
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



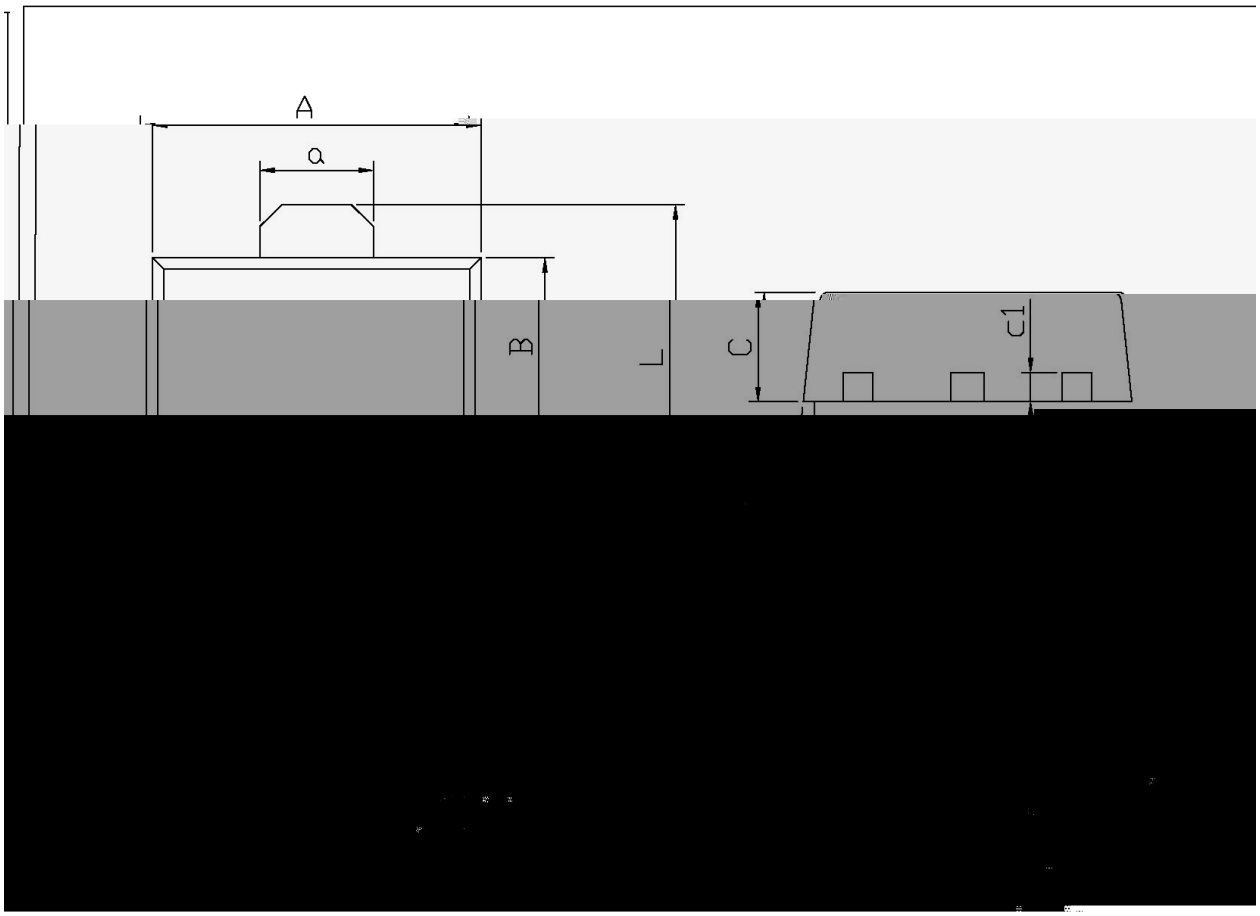




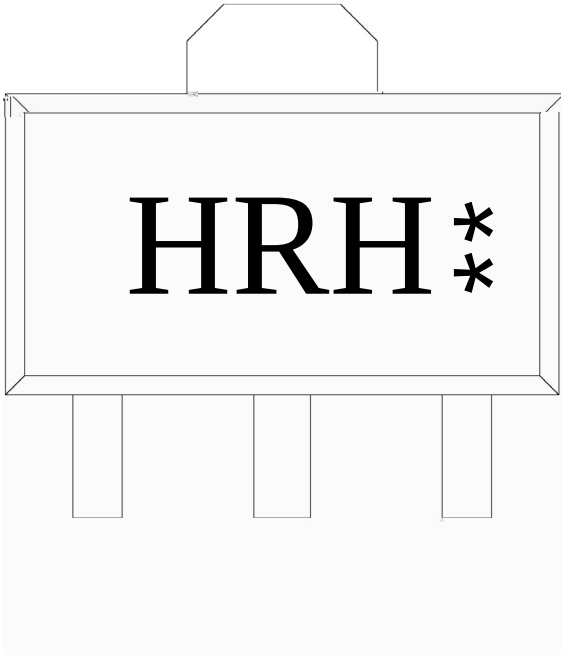
/ Package Dimensions

SOT-89

单位：mm



/ Marking Instructions



H

R

H

**

Note:

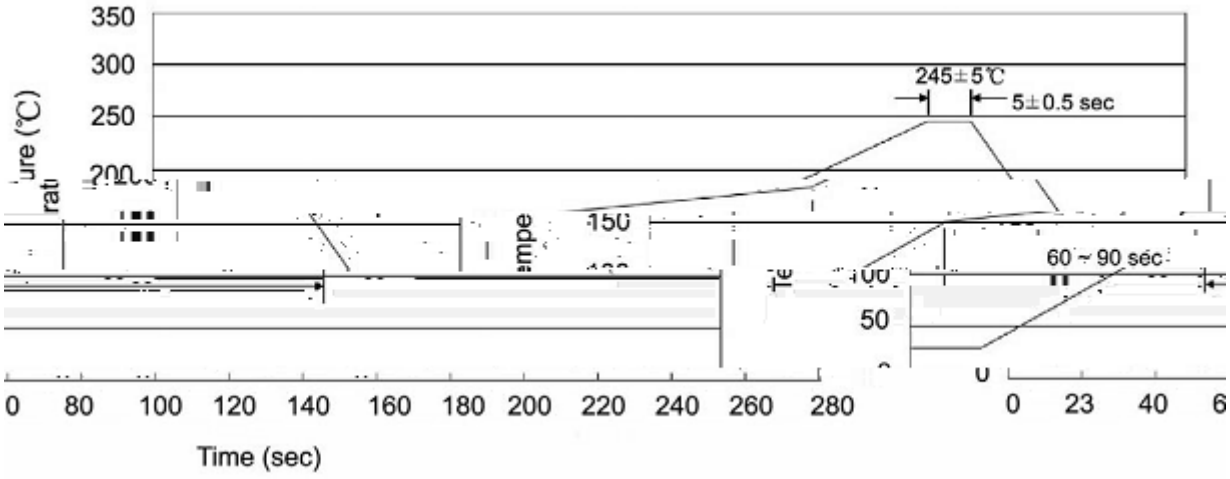
H: Company Code.

R: Product Type.

H h_{FE} Classifications Symbol

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

( ) /



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1		25	150		60	90sec;
2		245±5				5±0.5sec;
3				2	10	/sec.

Note:

1.Preheating:25~150 , Time:60~90sec.

2.Peak Temp.:245±5 , Duration:5±0.5sec.

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

ϥ 260±5 ϥ 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 ρ ×12	180×120×180	385×257×392

/ Notices