

/ Descriptions

VRW0; < SQS Silicon PNP transistor in a SOT-89 Plastic Package.

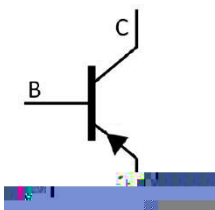
/ Features

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

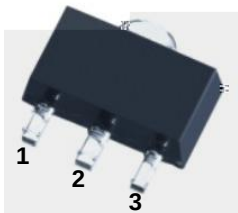
/ Applications

General purpose amplifier.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ Marking

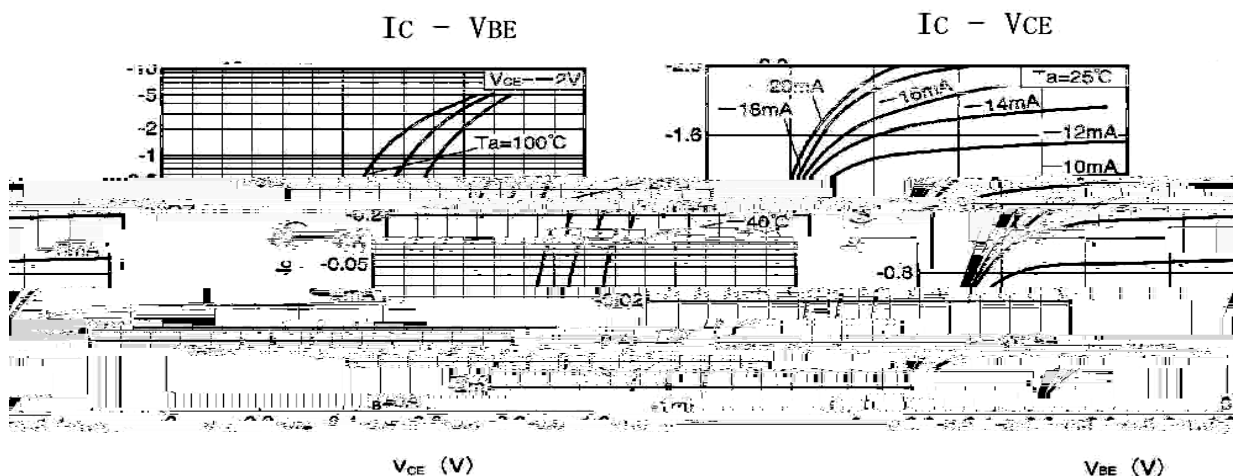
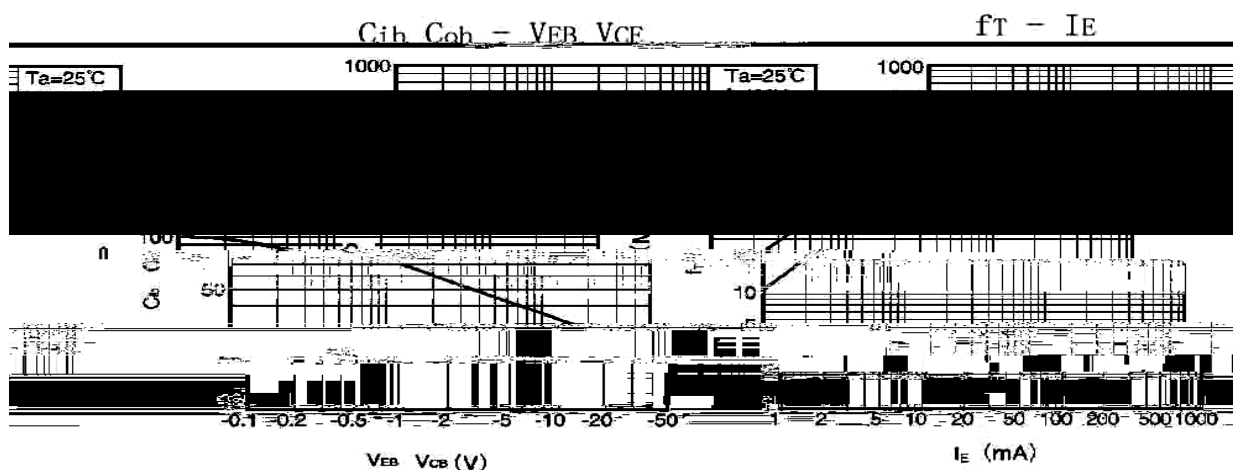
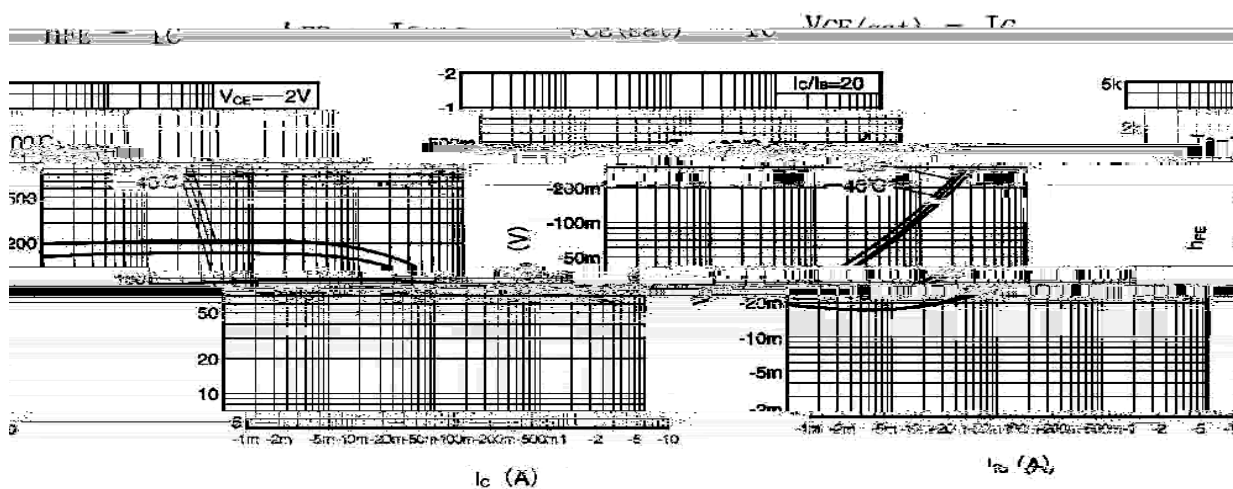
h_{FE} Classifications Symbol	Q	R
h_{FE} Range	120 270	180 390
Marking	HAEQ*	HAER*

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	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C = -50\mu A$ $I_E = 0$	-20			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C = -1.0mA$ $I_B = 0$	-20			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E = -50\mu A$ $I_C = 0$	-6.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB} = -20V$ $I_E = 0$			-0.1	μA
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB} = -5.0V$ $I_C = 0$			-0.1	μA
DC Current Gain	k_{IH}	$V_{CE} = -2.0V$ $I_C = -0.1A$	120		390	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -2.0A$ $I_B = -0.1A$			-0.5	V
Transition Frequency	f_w	$V_{CE} = -2.0V$ $I_C = -0.5A$ $f = 100MHz$		240		MHz

Collector

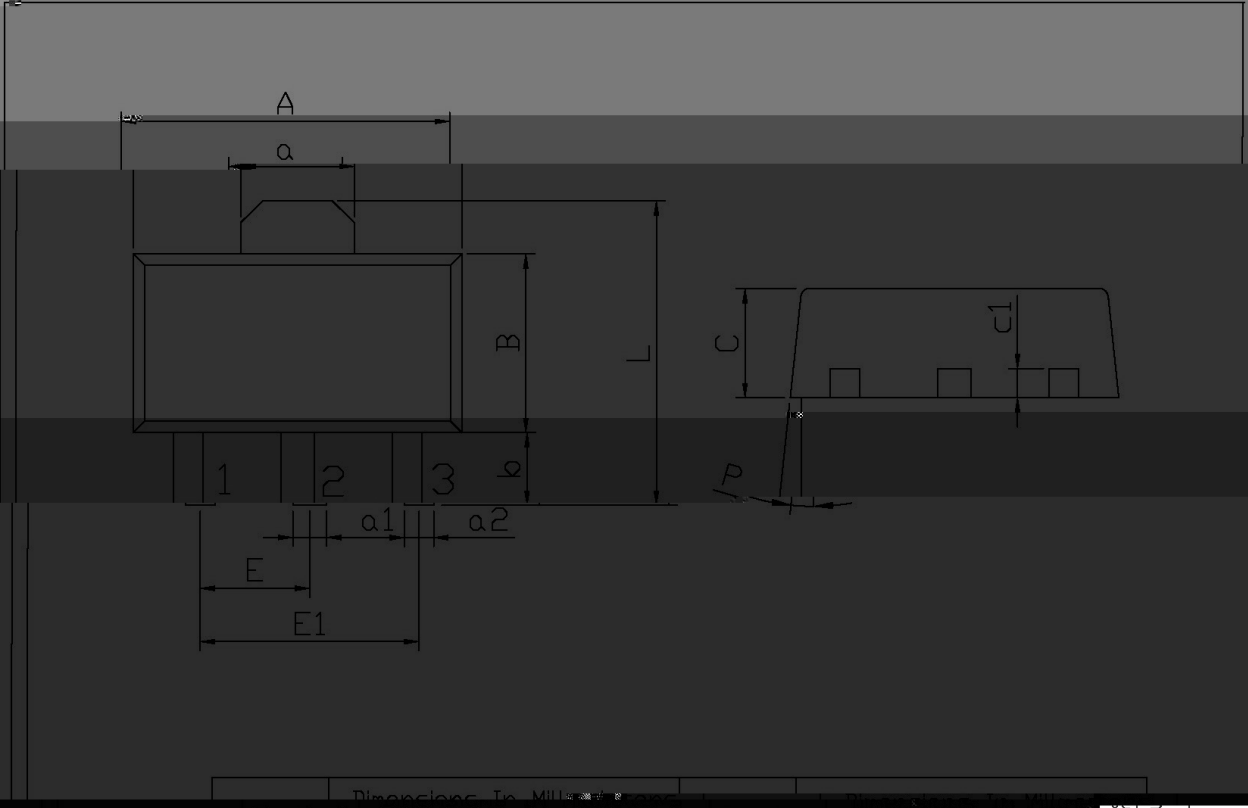
/ Electrical Characteristic Curve



/ Package Dimensions

SOT-89

单位: mm



Symbol			Symbol		
MIN			MAX		
A			4.7		
a			1.27		
B			1.27		
L			2.9		
1			1.27		
2			1.27		
3			1.27		
a1			0.25		
a2			0.25		
E			1.27		
E1			2.54		
C			0.5		
D			0.5		
P			0.5		

/ Marking Instructions



H

AE

Q: h_{FE}

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Note:

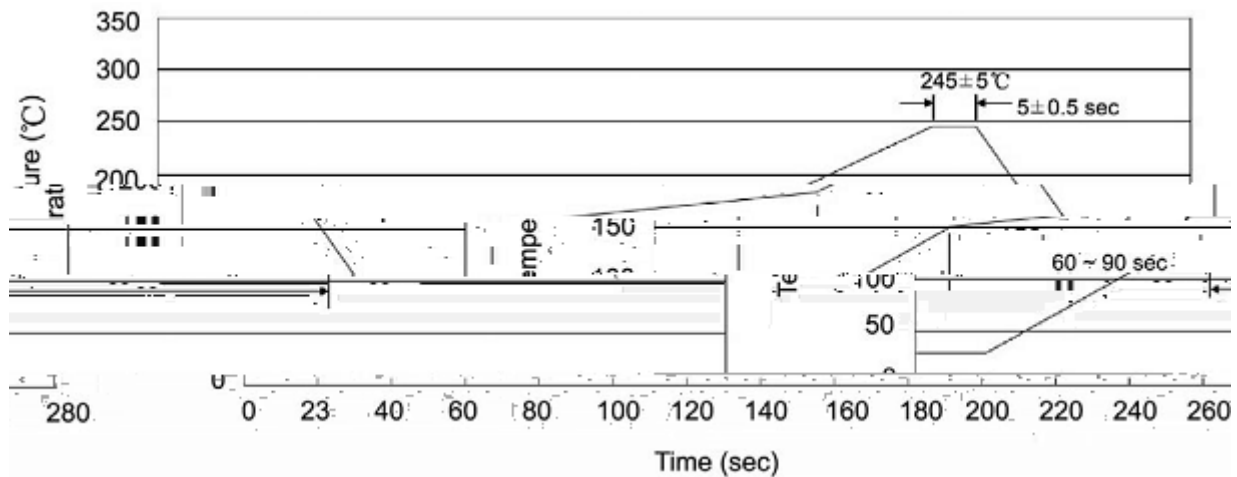
H: Company Code.

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	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