

/ Descriptions

VRW0; < QSQ Silicon NPN transistor in a SOT-89 Plastic Package.

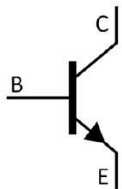
/ Features

High current, low voltage.

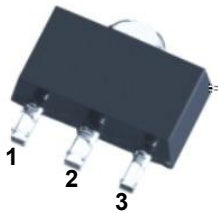
/ Applications

Driver stages of audio and video amplifiers applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ Marking

$h_{FE(1)}$ Classifications	10	16
$h_{FE(1)}$ Range	63 160	100 250
Marking	HBK	HBL

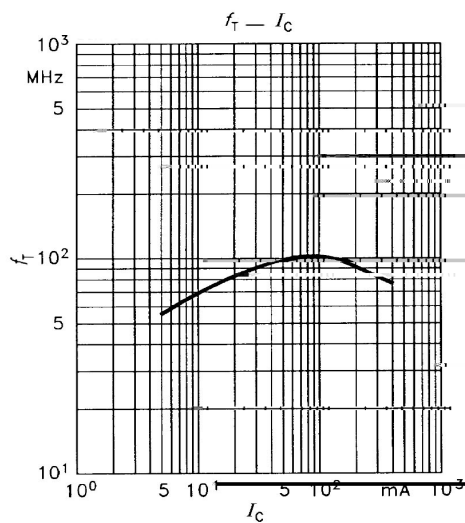
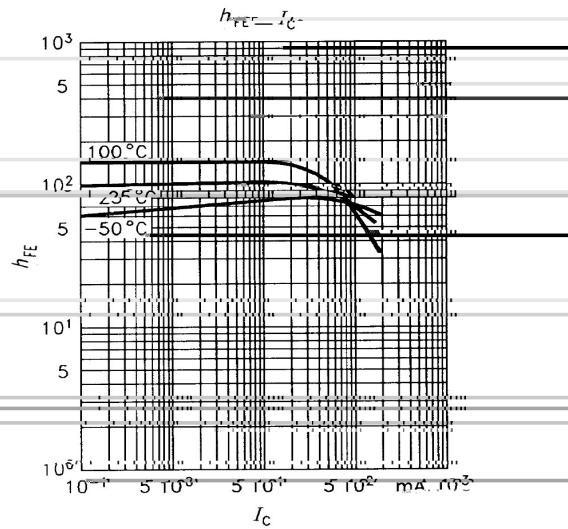
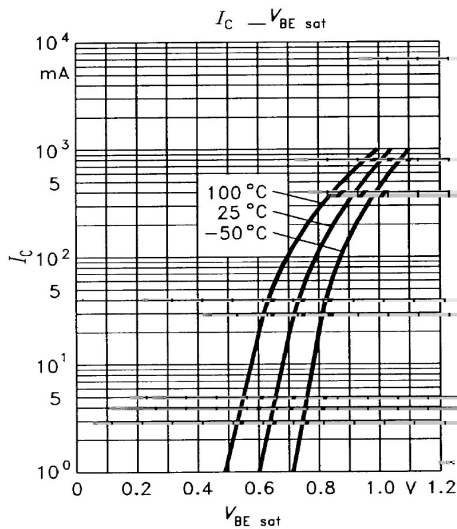
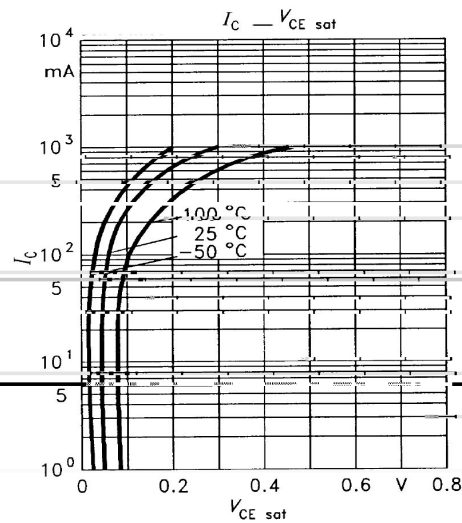
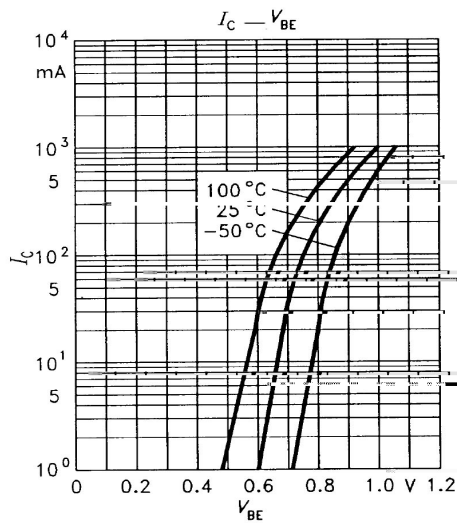
/ Absolute Maximum Ratings(Ta=25 –)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	100	V
Collector to Emitter Voltage	V_{CEO}	80	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current-Continuous	I_C	1	A
Peak Collector Current	I_{CM}	1.5	A
Peak Base Current	I_{BM}	0.2	A
Collector Power Dissipation	$P_C(T_C=25^\circ\text{C})$	1.3	W
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}	$I_C=1000\mu\text{A}$ $I_E=0$	100			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=5000\mu\text{A}$ $I_B=0$	80			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=1000\mu\text{A}$ $I_C=0$	5.0			V
Collector Cut-Off Current	$I_{CBO(1)}$	$V_{CB}=30\text{V}$ $I_E=0$			0.1	A
	$I_{CBO(2)}$	$V_{CB}=30\text{V}$ $I_E=0$ $T_j=125^\circ\text{C}$			10	A
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=5\text{V}$ $I_C=0$			0.1	A
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2\text{V}$ $I_C=150\text{mA}$	63		250	
	$h_{FE(2)}$	$V_{CE}=2\text{V}$ $I_C=5\text{mA}$	40			
	$h_{FE(3)}$	$V_{CE}=2\text{V}$ $I_C=500\text{mA}$	25			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500\text{mA}$ $I_B=50\text{mA}$			0.5	V
Base to Emitter Voltage	V_{BE}	$I_C=500\text{mA}$ $V_{CE}=2\text{V}$			1	V
Transition Frequency	f_T	$I_C=10\text{mA}$ $V_{CE}=5\text{V}$ $f=100\text{MHz}$		130		MHz
DC Current Gain Ratio Of The Complementary Pairs	$\frac{h_{FE1}}{h_{FE2}}$	$ I_C =150\text{mA}$ $ V_{CE} =2\text{V}$		1.3	1.6	

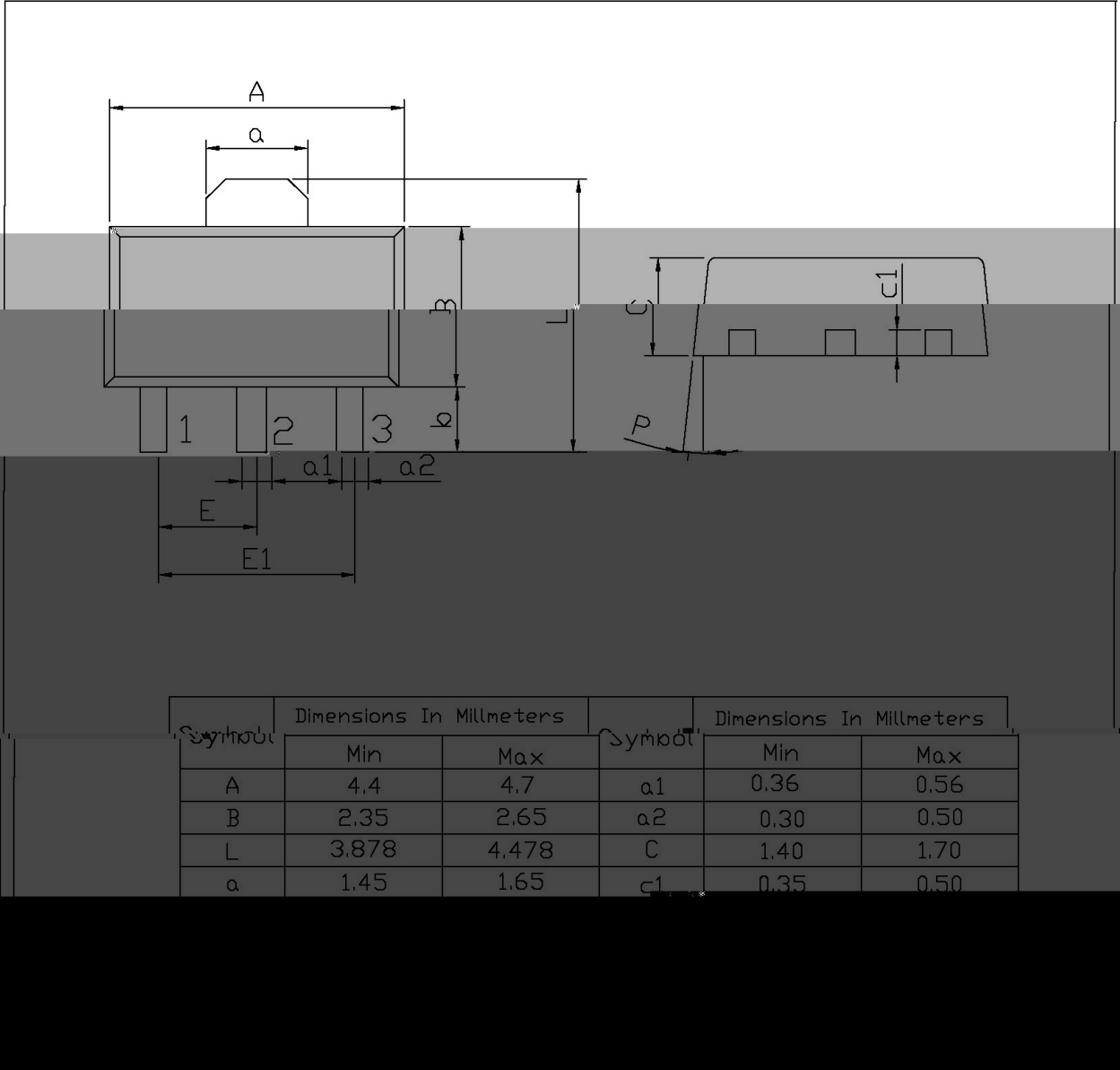
/ **Electrical Characteristic Curve**



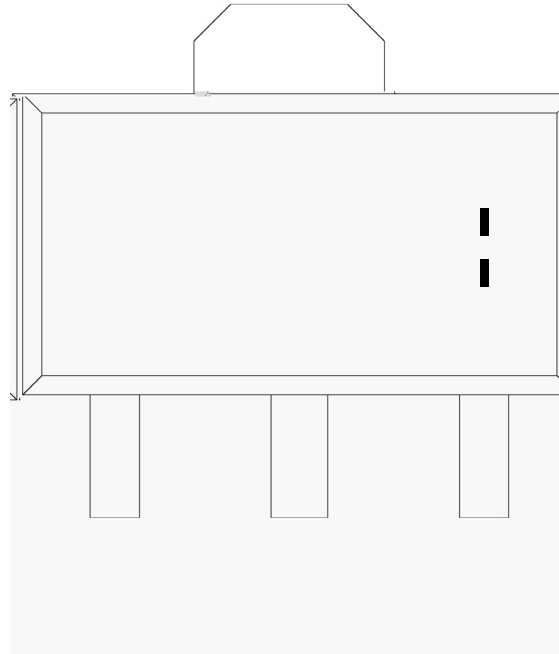
/ Package Dimensions

SOT-89

单位: mm



/ Marking Instructions



H

BK

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Note:

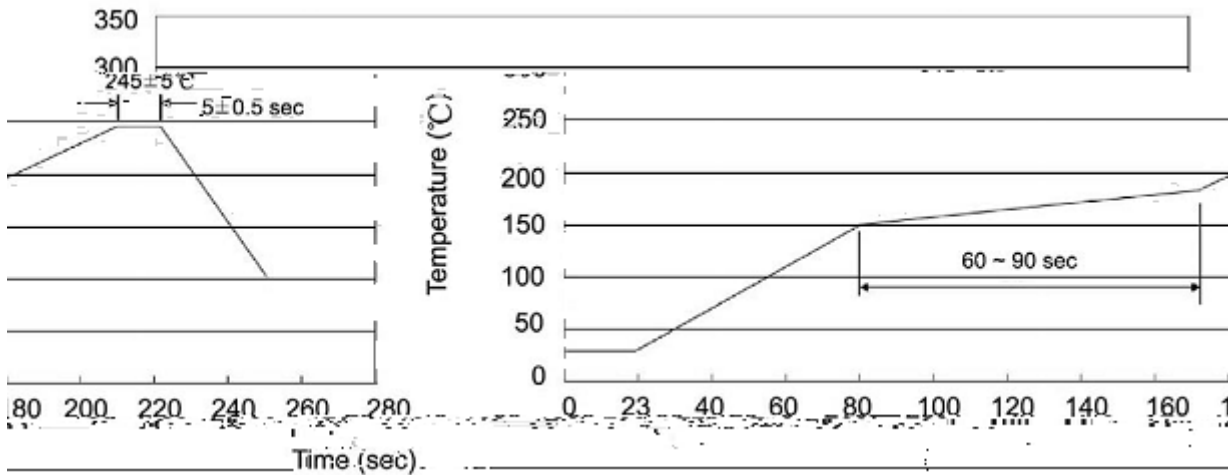
H: Company Code.

BK: Product Type.

** : 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)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOT-89	1,000	7	7,000	8	56,000	7 ×12	180×120×180	385×257×392

/ Notices