

VRW056 QSQ Silicon NPN transistor in a SOT-23 Plastic Package.

$S_F / k_{IH} / <348 P J$
High P_C and h_{FE} , excellent h_{FE} 10^{-4}

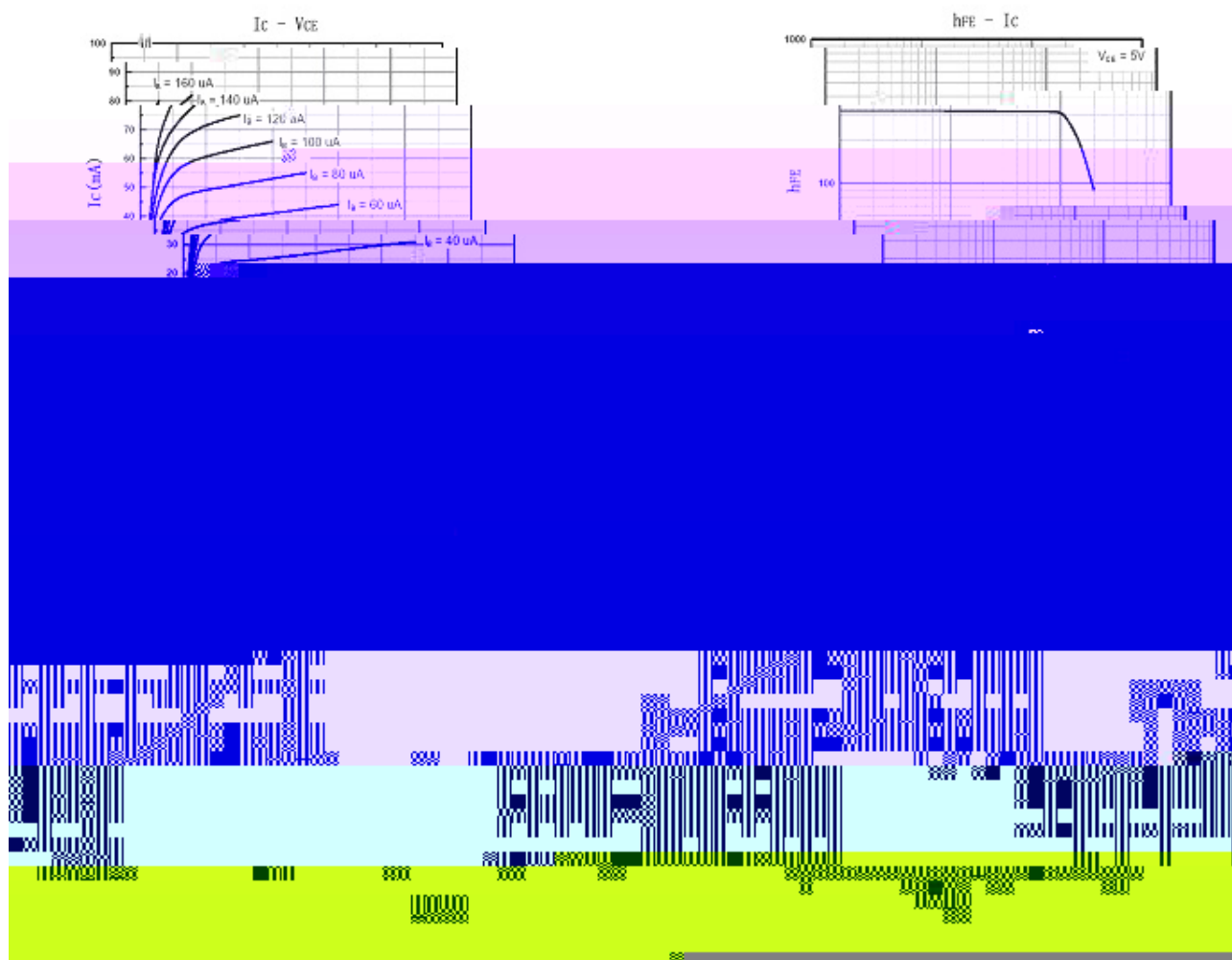
/ Absolute Maximum Ratings(Ta=25 –)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	50	V
Collector to Emitter Voltage	V_{CEO}	45	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	100	mA
Collector Power Dissipation	P_C	200	mW
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}	$I_C=0.1mA$ $I_E=0$	50			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0mA$ $I_B=0$	45			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=0.1mA$ $I_C=0$	5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=50V$ $I_E=0$			0.05	A
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5.0V$ $I_C=0$			0.05	A
DC Current Gain	h_{FE}	$V_{CE}=5.0V$ $I_C=1.0mA$	60		1000	
Collector-Emitter Saturation voltage	$V_{CE(sat)}$	$I_C=100mA$ $I_B=5.0mA$		0.14	0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=100mA$ $I_B=5.0mA$		0.84	1.0	V
Base-Emitter Voltage	V_{BE}	$V_{CE}=5.0V$ $I_C=2.0mA$		0.63	0.7	V
Transition Frequency	f_T	$V_{CE}=5.0V$ $I_C=10mA$	150	270		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$ $I_E=0$ $f=1.0MHz$		2.2	3.5	pF
Noise Figure	NF	$V_{CE}=5.0V$ $I_C=-0.2mA$ $R_g=2.0K$ $f=1.0KHz$ $\Delta f=200Hz$		0.9	10	dB

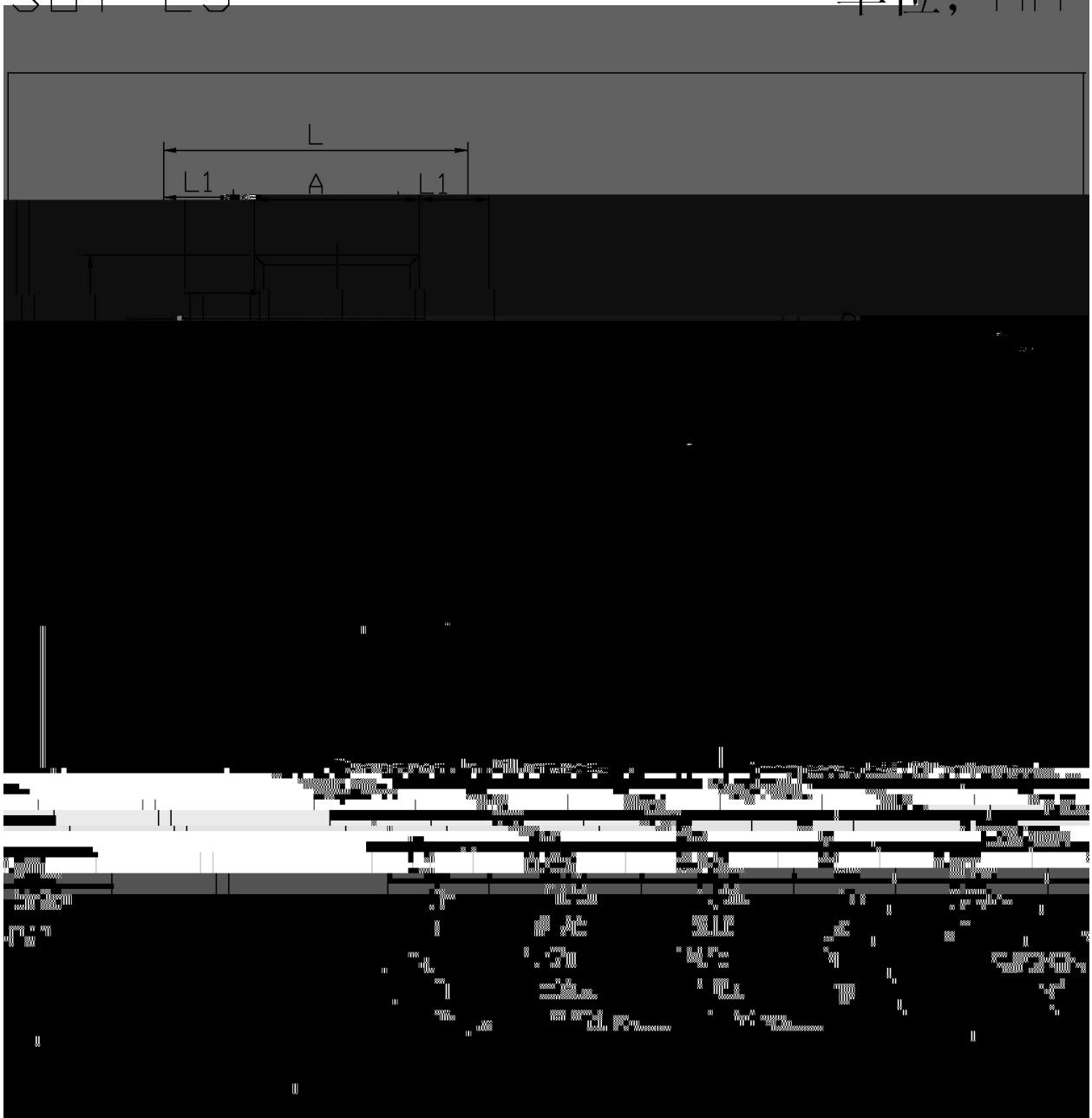
/ Electrical Characteristic Curve



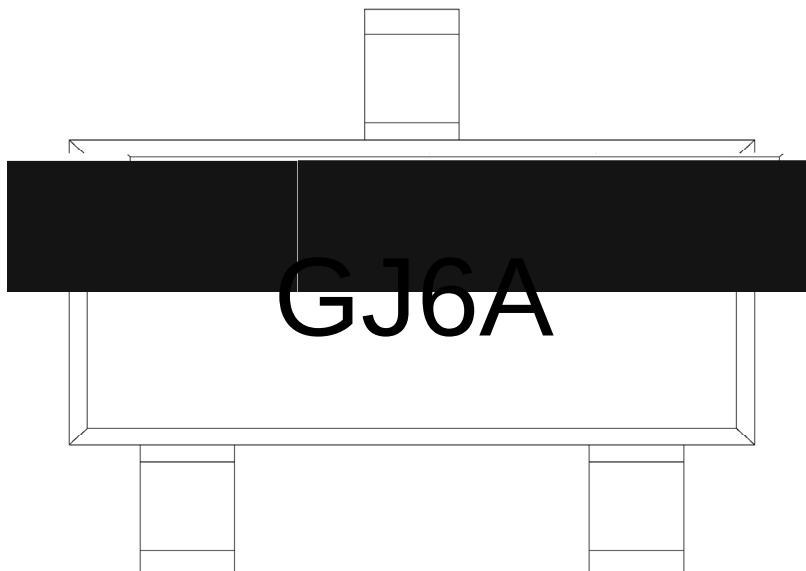
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



J

M9

D h_{FE}

Note:

J HF Product Code

M9 Product Type Code

D h_{FE} Classifications Symbol Code

() / Whp shudwxuh Suriloh i ru LU Uhior z Vroghulqj+Se0luhh,



Note:

- 1

150 180%

60 90sec;

1.Preheating:150~180%, 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-23	3,000	10	30,000	6	180,000	7 ×8	180×120×180	390×385×205

/ Notices