

/ Descriptions

VRW056

QSQ

Silicon NPN transistor in a SOT-23 Plastic Package.

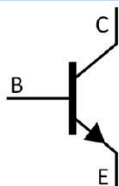
/ Features

 I_H High f_T , small NF.

/ Applications

High frequency amplifier applications.

/ Equivalent Circuit



/ Pinning



PIN 1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

h_{FE} Range	30` 250
Marking	H7H

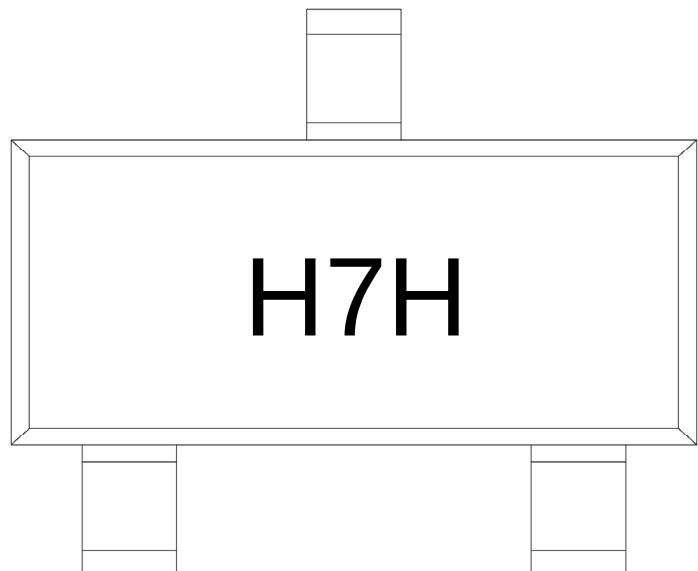
/ Absolute Maximum Ratings(Ta=25)

Parameter	N Symbol	Rating	H Unit
Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	15	V
Emitter to Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	50	mA
Collector Power Dissipation	P_C	375	mW
Junction Temperature	T_J	150	
Storage Temperature Range	T_{stg}	-55~150	

/ Electrical Characteristics(Ta=25)

Parameter	N Symbol	Test Conditions	Min	Typ	Max	H Unit
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=3.0mA$ $I_B=0$	15			V
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=1.0 A$ $I_E=0$	30			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=10 A$ $I_C=0$	3.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=15V$ $I_E=0$			0.02	A
DC Current Gain	h_{FE}	$V_{CE}=1.0V$ $I_C=3.0mA$	30		250	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA$ $I_B=1.0mA$			0.4	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10mA$ $I_B=1.0mA$			1.0	V
Transition Frequency	f_T	$V_{CE}=6.0V$ $I_C=5.0mA$ $f=100MHz$		1400		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$ $I_E=0$ $f=0.1\sim1.0MHz$			1.0	pF
Noise Figure	NF	$I_C=1.5mA$ $V_{CE}=6.0V$ $R_S=50$		4.5		dB
Common-Emitter Amplifier Power Gain	G _{pe}	$V_{CE}=6.0V$ $I_C=5.0mA$ $f=200MHz$		15		dB

/ Marking Instructions



H H

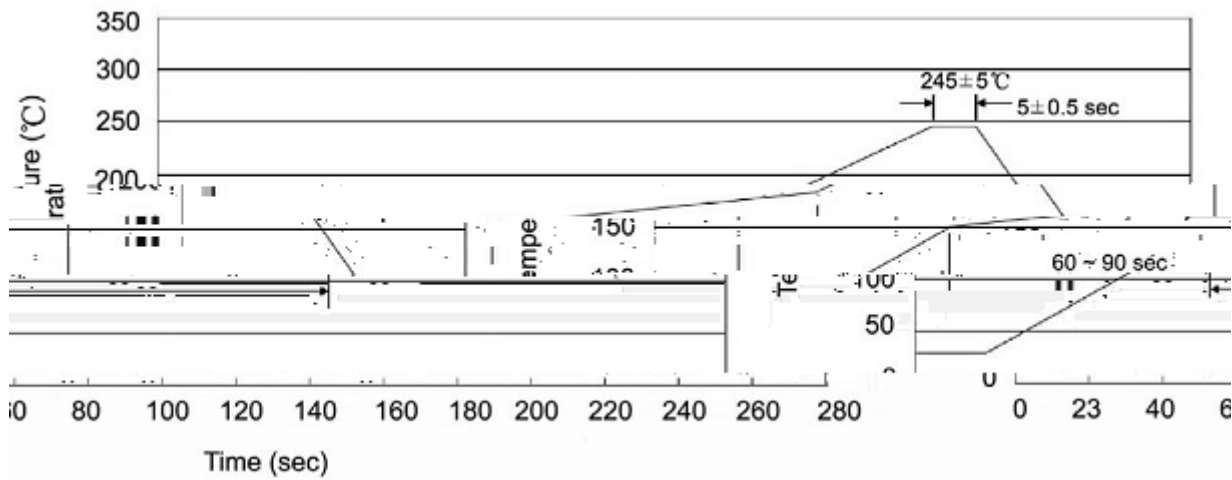
7H N

Note:

H Company Code

7H Product Type

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



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-23	3,000	10	30,000	6	180,000	7 ρ ×8	180×120×180	390×385×205