

/ Descriptions

VRW056 M M QSQ æ M ç s ll 1 Silicon NPN transistor in a SOT-23 Plastic Package.

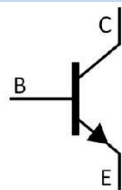
/ Features

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High voltage, Low saturation voltage,HF Product.

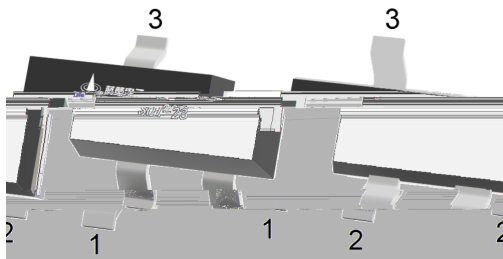
/ Applications

³ ² í ð
High voltage control circuit.

/ Equivalent Circuit



/ Pinning



PIN 1 χ Base PIN 2 χ Emitter PIN 3 χ Collector

/ h_{FE} Classifications & Marking

h _{FE} Range	50 200
Marking	H3D

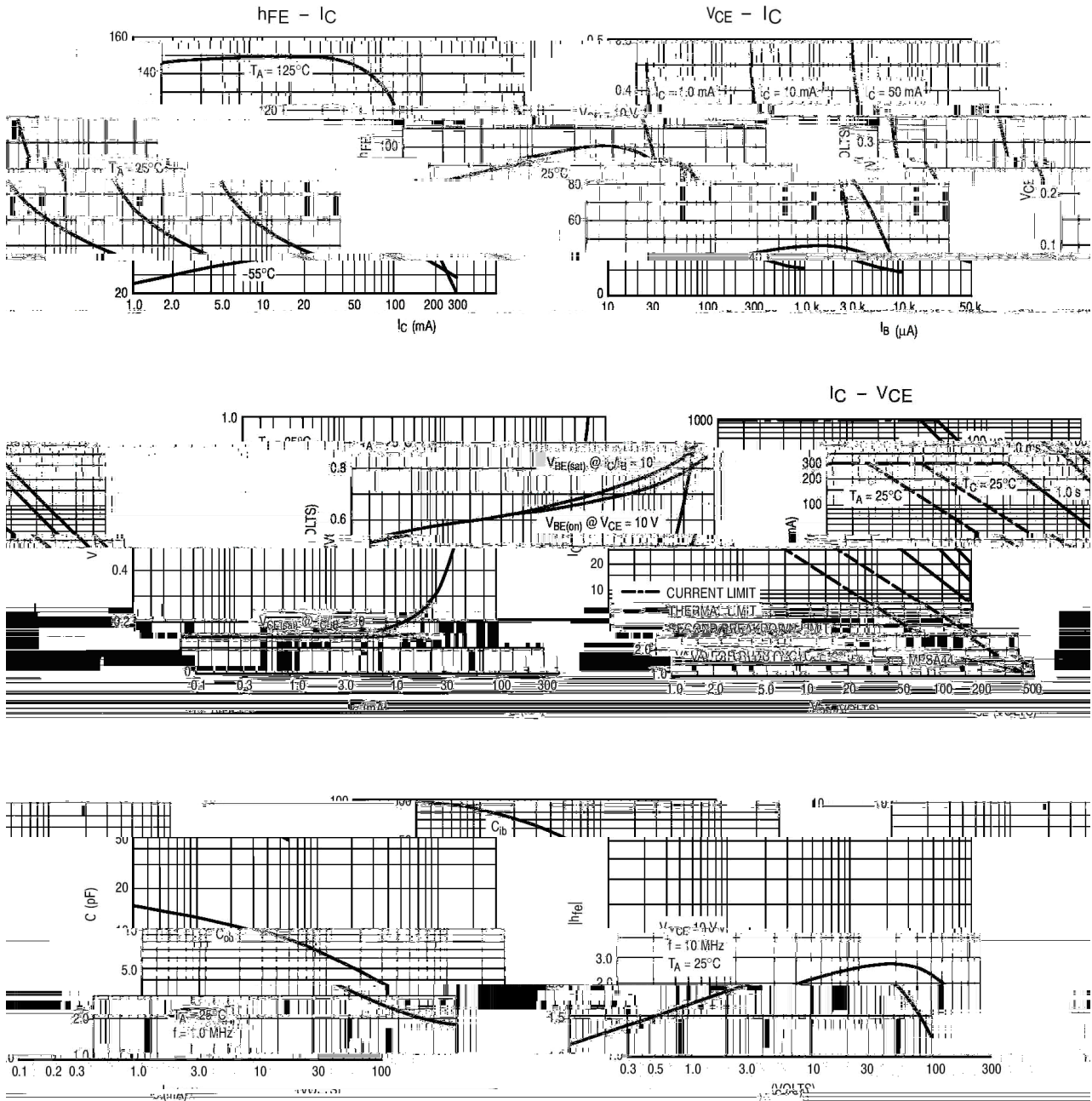
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	500	V
Collector to Emitter Voltage	V_{CEO}	400	V
Emitter to Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	300	mA
Collector Power Dissipation	P_C	350	mW
Collector Power Dissipation	$P_{C(TC=25)}$	1.5	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 ~ 150	

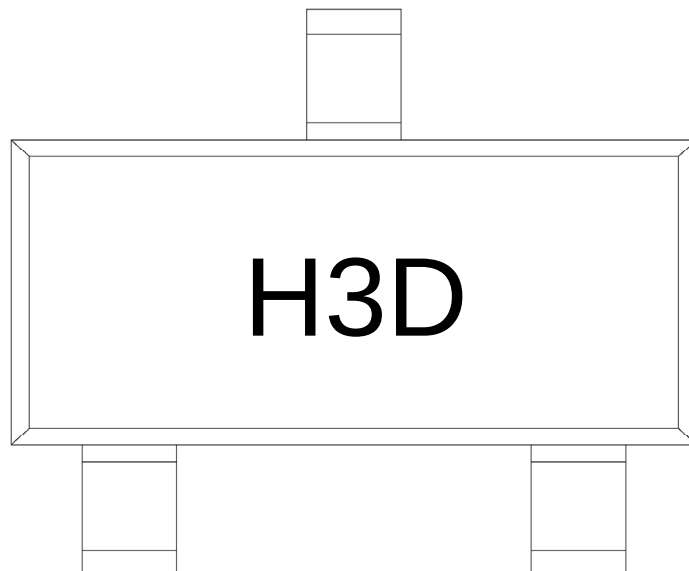
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=100\text{ }\mu\text{A}$ $I_E=0$	500			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0\text{mA}$ $I_B=0$	400			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=10\text{ }\mu\text{A}$ $I_C=0$	6.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=400\text{V}$ $I_E=0$			0.1	A
Collector Cut-Off Current	I_{CES}	$V_{CE}=400\text{V}$ $V_{BE}=0$			1	A
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=4.0\text{V}$ $I_C=0$			0.1	A
DC Current Gain	$h_{FE(1)}$	$V_{CE}=10\text{V}$ $I_C=10\text{mA}$	50		200	
	$h_{FE(2)}$	$V_{CE}=10\text{V}$ $I_C=100\text{mA}$	40			
	$h_{FE(3)}$	$V_{CE}=10\text{V}$ $I_C=50\text{mA}$	45			
	$h_{FE(4)}$	$V_{CE}=10\text{V}$ $I_C=1.0\text{mA}$	40			
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=1.0\text{mA}$ $I_B=0.1\text{mA}$			0.4	V
	$V_{CE(sat)(2)}$	$I_C=10\text{mA}$ $I_B=1.0\text{mA}$			0.5	V
	$V_{CE(sat)(3)}$	$I_C=50\text{mA}$ $I_B=5.0\text{mA}$			0.75	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10\text{mA}$ $I_B=1.0\text{mA}$			0.75	V
Output Capacitance	C_{ob}	$V_{CB}=20\text{V}$ $I_E=0$ $f=1.0\text{MHz}$			7.0	pF

/ Electrical Characteristic Curve



/ Marking Instructions



” X

K X 公司代码

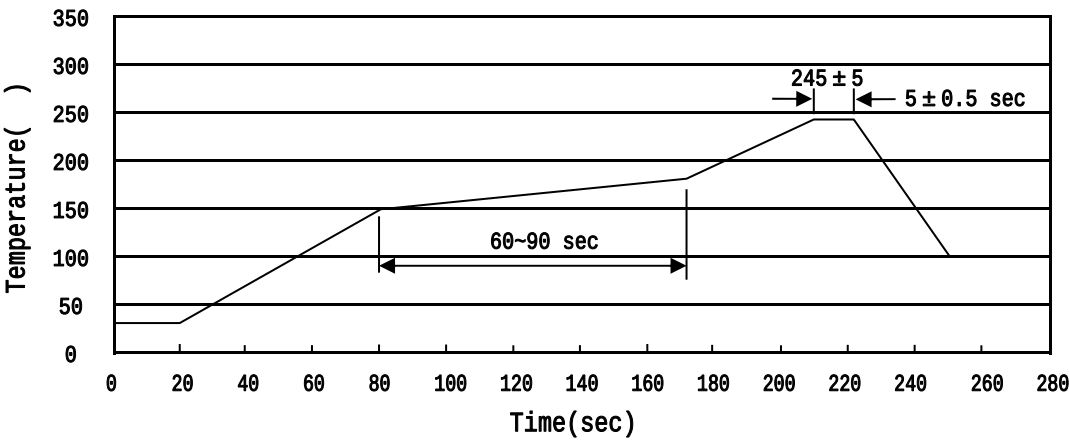
3D X 产品代码

Note:

K X Company Code

3D X Product Type Code

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



- ” X
- 1 150 °C ~ 180 °C 60 ~ 90sec;

2 245 °C ± 5 °C 5 ± 0.5sec;

3 2~10 °C/sec.
- Note:

1.Preheating:150~180 °C , Time:60~90sec.

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

3. Cooling Speed: 2~10 °C /sec.

/ Resistance to Soldering Heat Test Conditions

□ 260 °C ± 5 °C 10 °C ± 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