

**/ Descriptions**

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

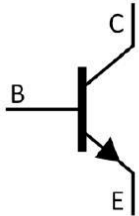
**/ Features**

High voltage, Low saturation voltage, low collector capacitance output, complementary pair with MMBTA92.

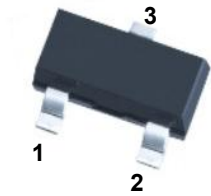
**/ Applications**

High voltage control circuit.

**/ Equivalent Circuit**



**/ Pinning**



PIN1 Base          PIN 2 Emitter          PIN 3 Collector

**/ Marking**

$h_{FE}$ Range	>40
Marking	H1D

/ Absolute Maximum Ratings(Ta=25 )

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	300	V
Collector to Emitter Voltage	$V_{CEO}$	300	V
Emitter to Base Voltage	$V_{EBO}$	6.0	V
Collector Current	$I_C$	500	mA
Collector Power Dissipation*	* $P_C$	350	mW
Junction Temperature	$T_j$	150	
Storage Temperature Range	$T_{stg}$	-55 150	

\*: 4.0\*4.0\*0.15mm<sup>3</sup> FR-4 PCB

\*:Device mounted on FR-4 PCB 4.0\*4.0\*0.15mm<sup>3</sup>

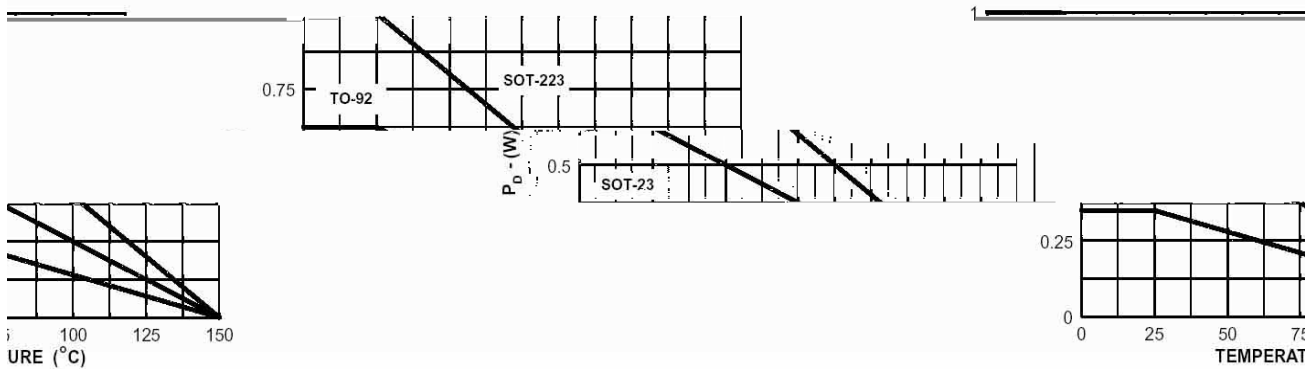
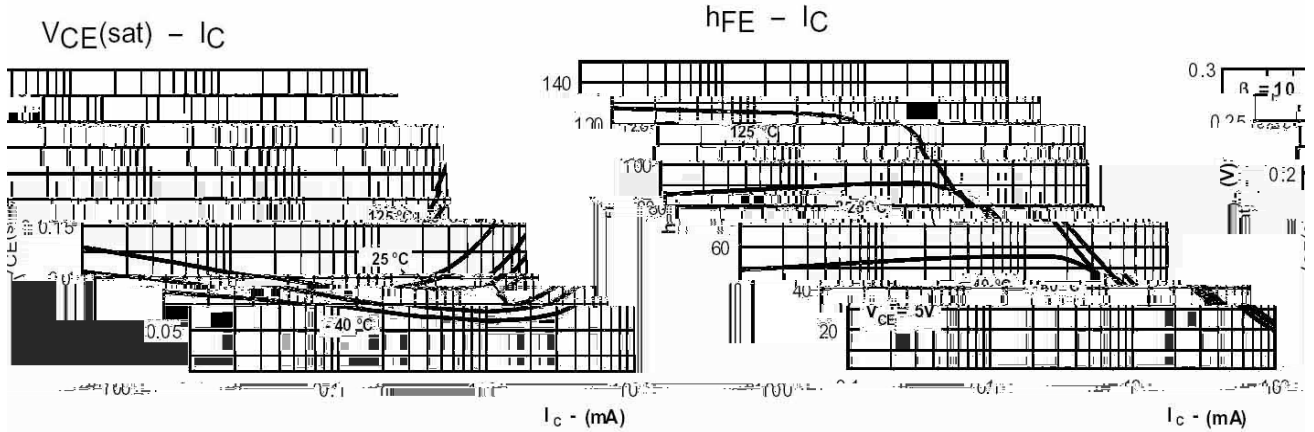
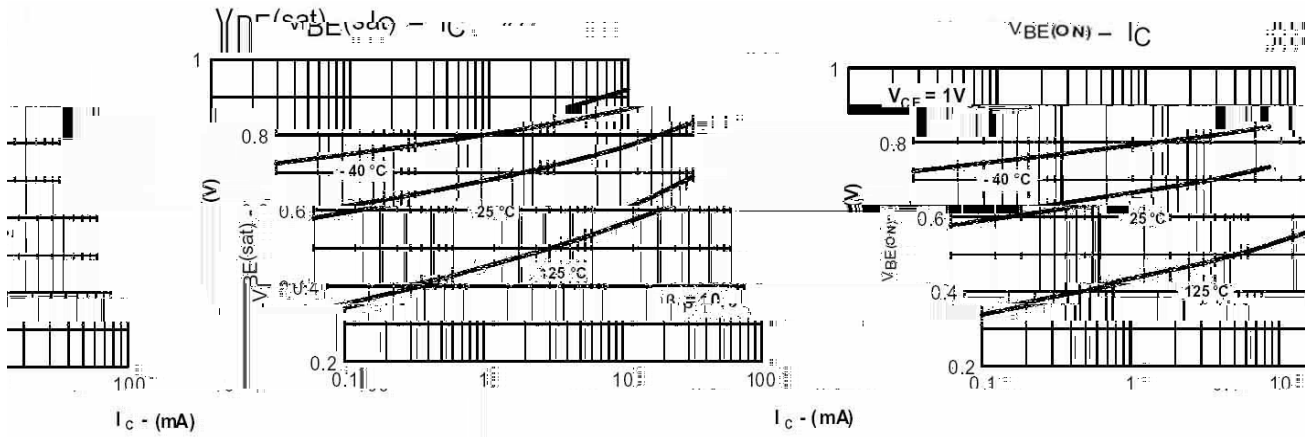
/ Electrical Characteristics(Ta=25 )

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	$V_{CBO}$	$I_C=100\mu A$ $I_E=0$	300			V
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=1.0mA$ $I_B=0$	300			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E=100\mu A$ $I_C=0$	6.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=200V$ $I_E=0$			0.1	$\mu A$
Emitter Base Cut-Off Current	$I_{EBO}$	$V_{BE}=6.0V$ $I_C=0$			0.1	$\mu A$
DC Current Gain	* $h_{FE(1)}$	$V_{CE}=10V$ $I_C=10mA$	40			
	* $h_{FE(2)}$	$V_{CE}=10V$ $I_C=30mA$	40			
	* $h_{FE(3)}$	$V_{CE}=10V$ $I_C=1.0mA$	25			
Collector to Emitter Saturation Voltage	* $V_{CE(sat)}$	$I_C=20mA$ $I_B=2.0mA$			0.5	V
Base to Emitter Saturation Voltage	* $V_{BE(sat)}$	$I_C=20mA$ $I_B=2.0mA$			0.9	V
Transition Frequency	$f_T$	$I_C=10mA$ $V_{CE}=20V$ $f=100MHz$	50			MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=20V$ $I_E=0$ $f=1.0MHz$			3.0	pF

\* 300 $\mu s$  2.0%

\*pulse test: pulse width 300 $\mu s$ ,duty cycle 2.0%.

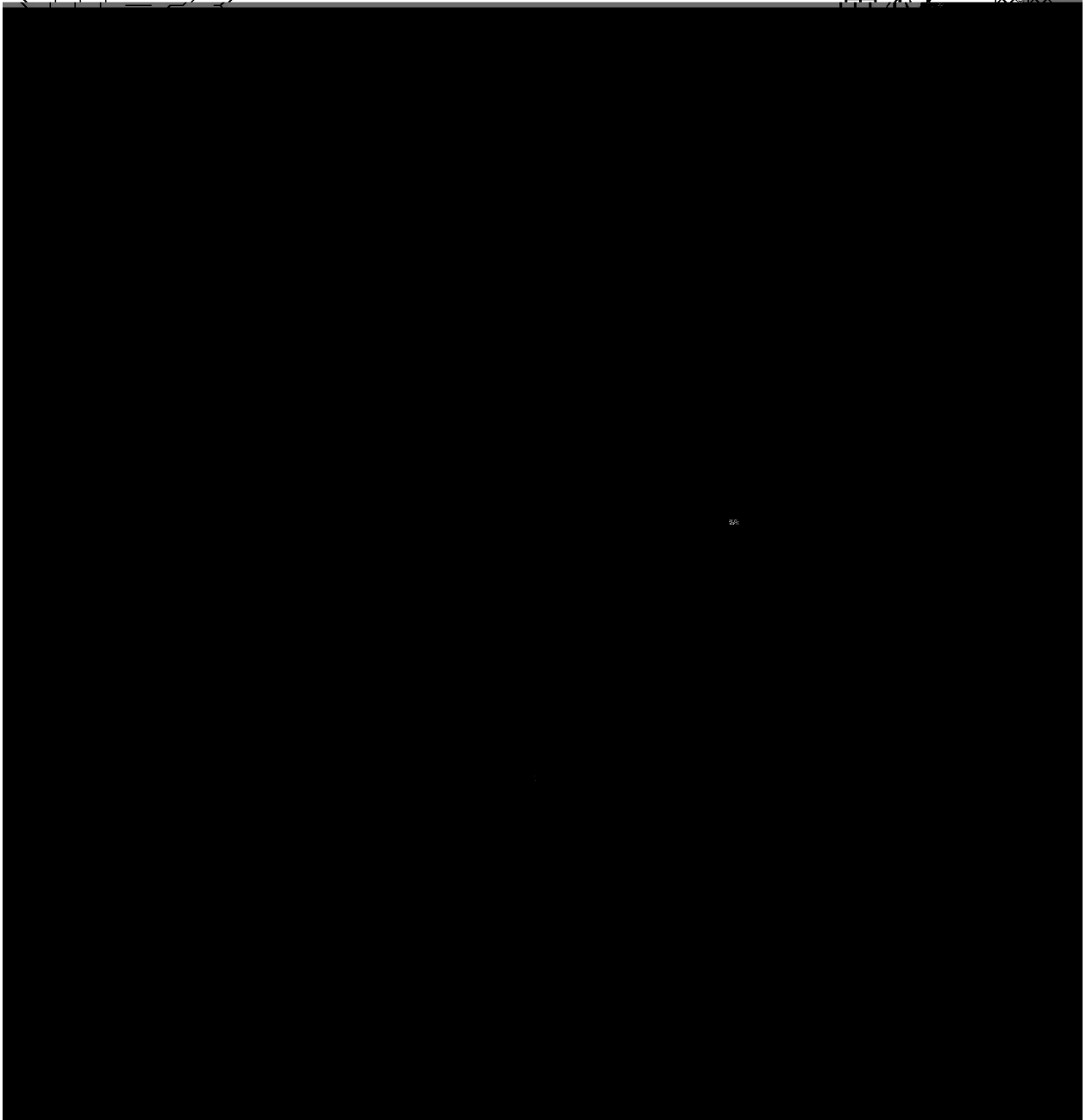
/ Electrical Characteristic Curve



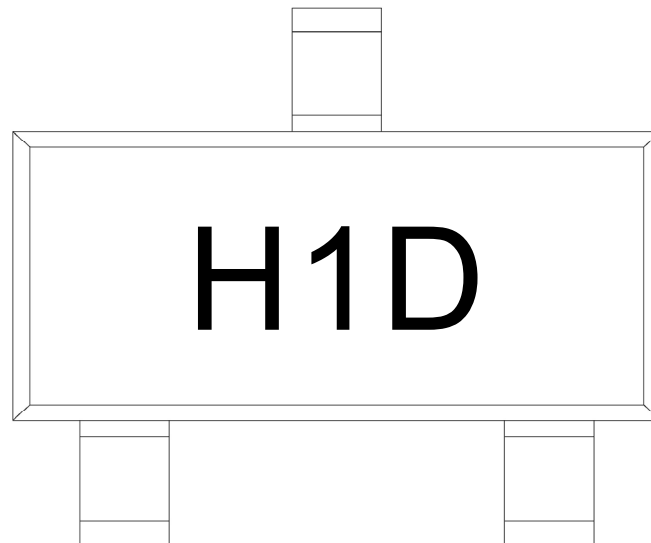
/ Package Dimensions

SOT-23

单位



/ Marking Instructions



H

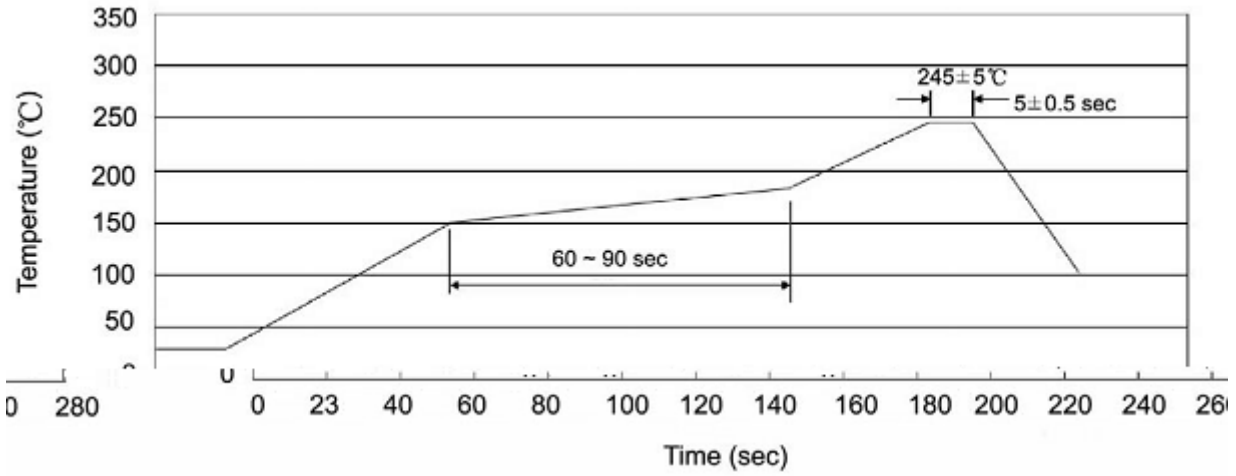
1D

Note:

H: Company Code.

1D: Product Type Code.

( ) / K\d g\iXk i\`Gif]`Δ ]fi @ `l \]fn Jfd \i`e^ZGY\$=i\ž



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 <sup>3</sup> )		
	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-23	3,000	10	30,000	6	180,000	7 ×8	180×120×180	390×385×205

/ Notices