

MMBTA13

Rev.F Apr.-2017

/ Descriptions

SOT-23

NPN

Silicon NPN transistor in a SOT-23 Plastic Package.

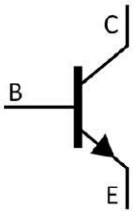
/ Features

High current gain.

/ Applications

Applications requiring extremely high current gain device designed.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Emitter PIN 3 Collector

/ Marking

h_{FE} Range	>10000
Marking	H1M

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	30	V
Emitter to Base Voltage	V_{EBO}	10	V
Collector Current - Continuous	I_C	300	mA
Collector Power Dissipation	P_C	225	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

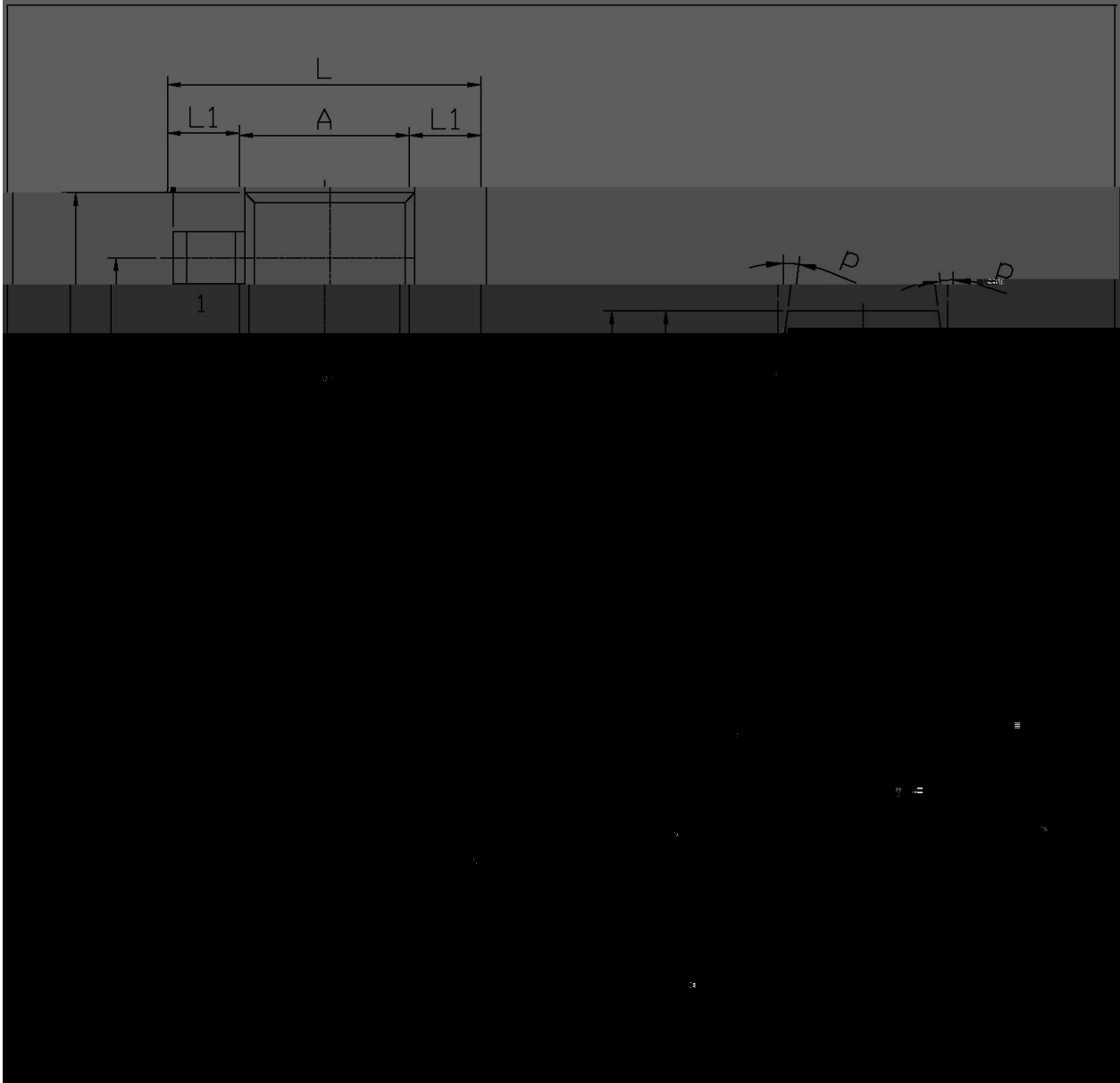
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=100\mu A$ $I_E=0$	30			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=500\mu A$ $I_B=0$	30			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=100\mu A$ $I_C=0$	10			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=30 V$ $I_E=0$			0.1	μA
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=10V$ $I_C=0$			0.1	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5.0V$ $I_C=10mA$	5000			
	$h_{FE(2)}$	$V_{CE}=5.0V$ $I_C=100mA$	10000			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100mA$ $I_B=0.1mA$			1.5	V
Base-Emitter On Voltage	V_{BE}	$I_C=100mA$ $V_{CE}=5.0V$			2.0	V
Transition Frequency	f_T	$I_C=10mA$ $f=100MHz$ $V_{CE}=5.0V$	125			MHz

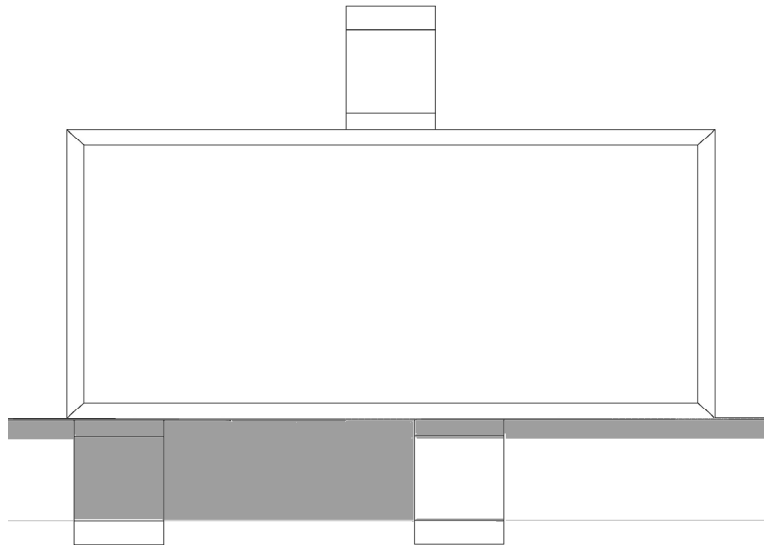
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



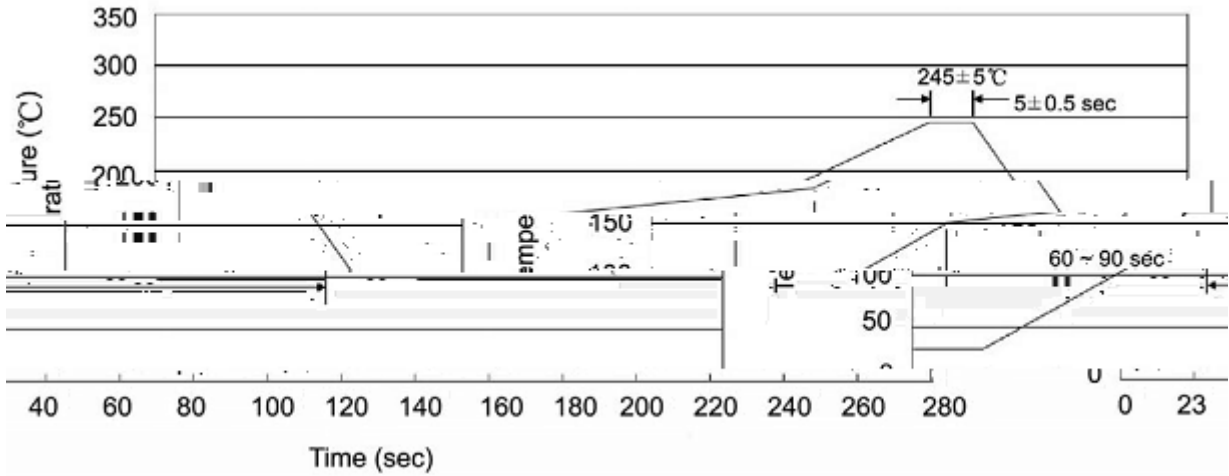
H

1M

Note:

H: Company Code.

() / Resistance to Soldering Heat Test Conditions



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 ×8	180×120×180	390×385×205

/ Notices