

# MMBR5179

Rev.F Apr.-2017

## / Descriptions

SOT-23

NPN

Silicon NPN transistor in a SOT-23 Plastic Package.

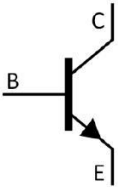
## / Features

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	Symbol	Rating	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	°C
Storage Temperature Range	$T_{stg}$	-55 150	°C

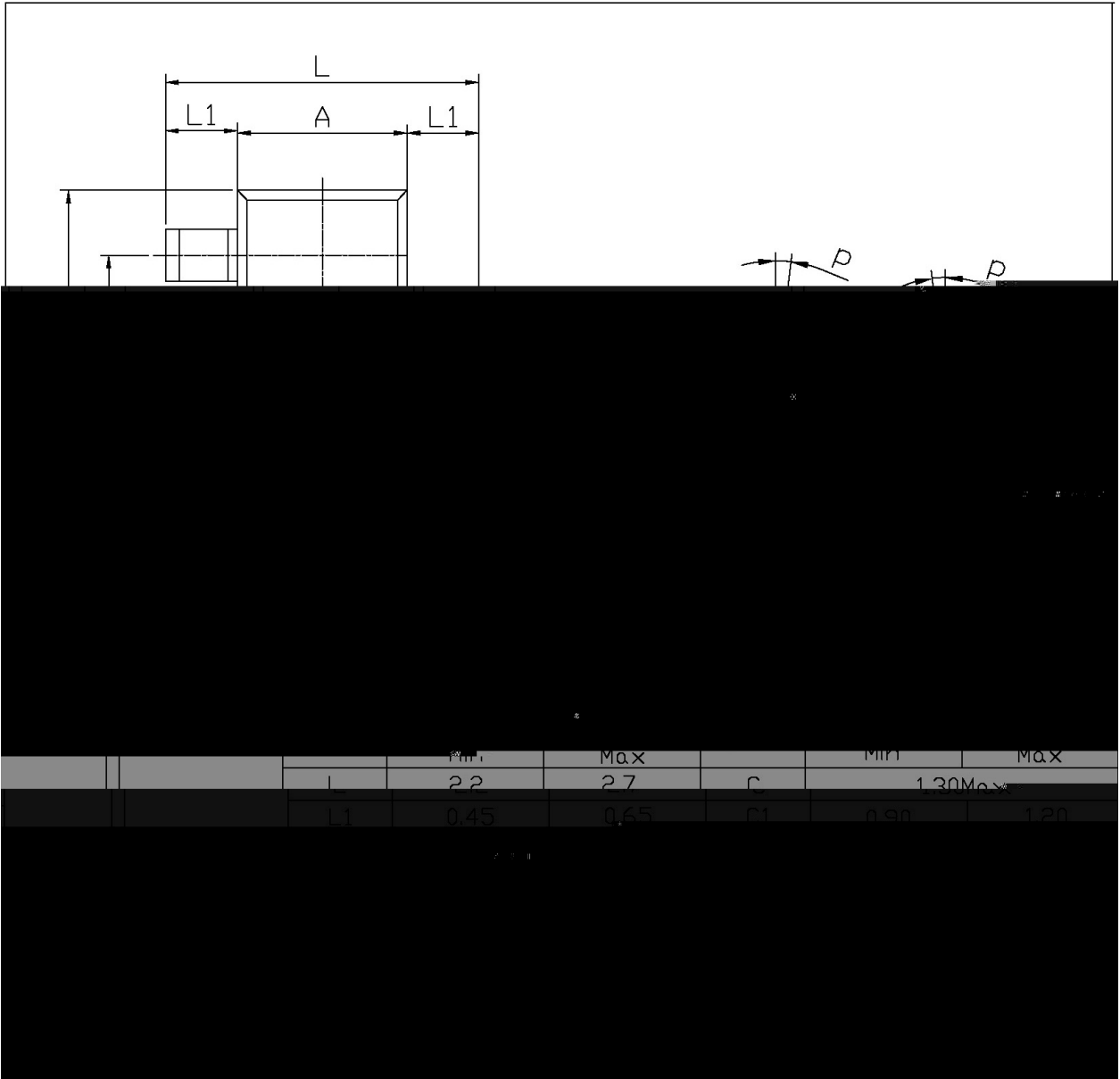
## / Electrical Characteristics(Ta=25 )

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=3.0mA$ $I_B=0$	15			V
Collector to Base Breakdown Voltage	$V_{CBO}$	$I_C=1.0\mu A$ $I_E=0$	30			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E=10\mu A$ $I_C=0$	3.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=15V$ $I_E=0$			0.02	$\mu A$
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	$C_{ob}$	$V_{CB}=10V$ $I_E=0$ $f=0.1\sim 1.0MHz$			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

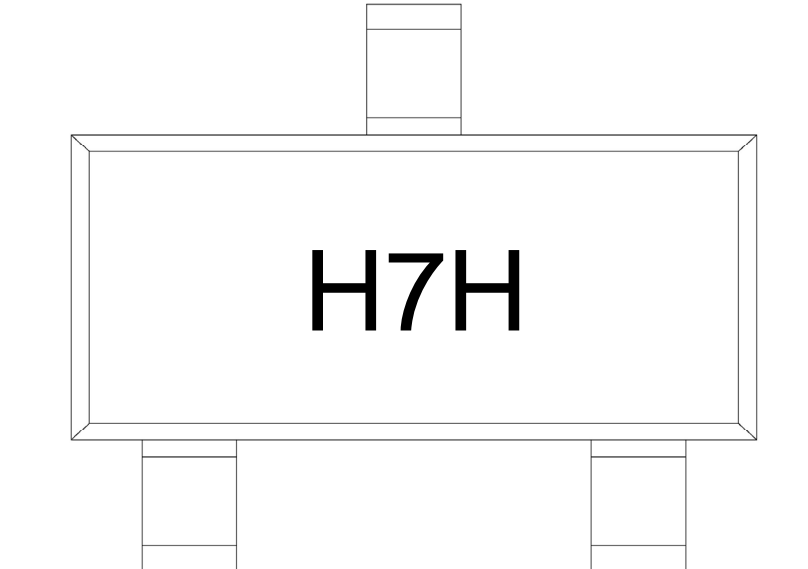
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



H

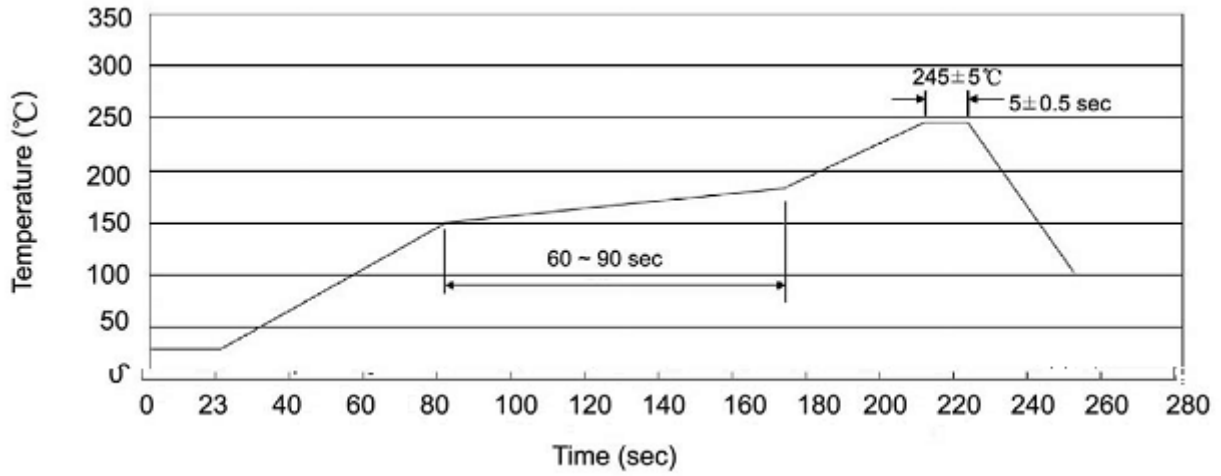
7H

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 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