

M28M

Rev.F Apr.-2017

/ Descriptions

SOT-23

NPN

Silicon NPN transistor in a SOT-23 Plastic Package.

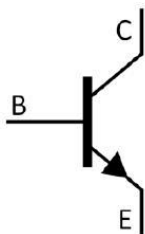
/ Features

High I_C , high h_{FE} .

/ Applications

Use in audio output driver stage amplifier applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base

PIN 2 Emitter

PIN 3 Collector

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	B	C	D
h_{FE} Range	300~550	500~700	650~1000
Marking	H28B	H28C	H28D

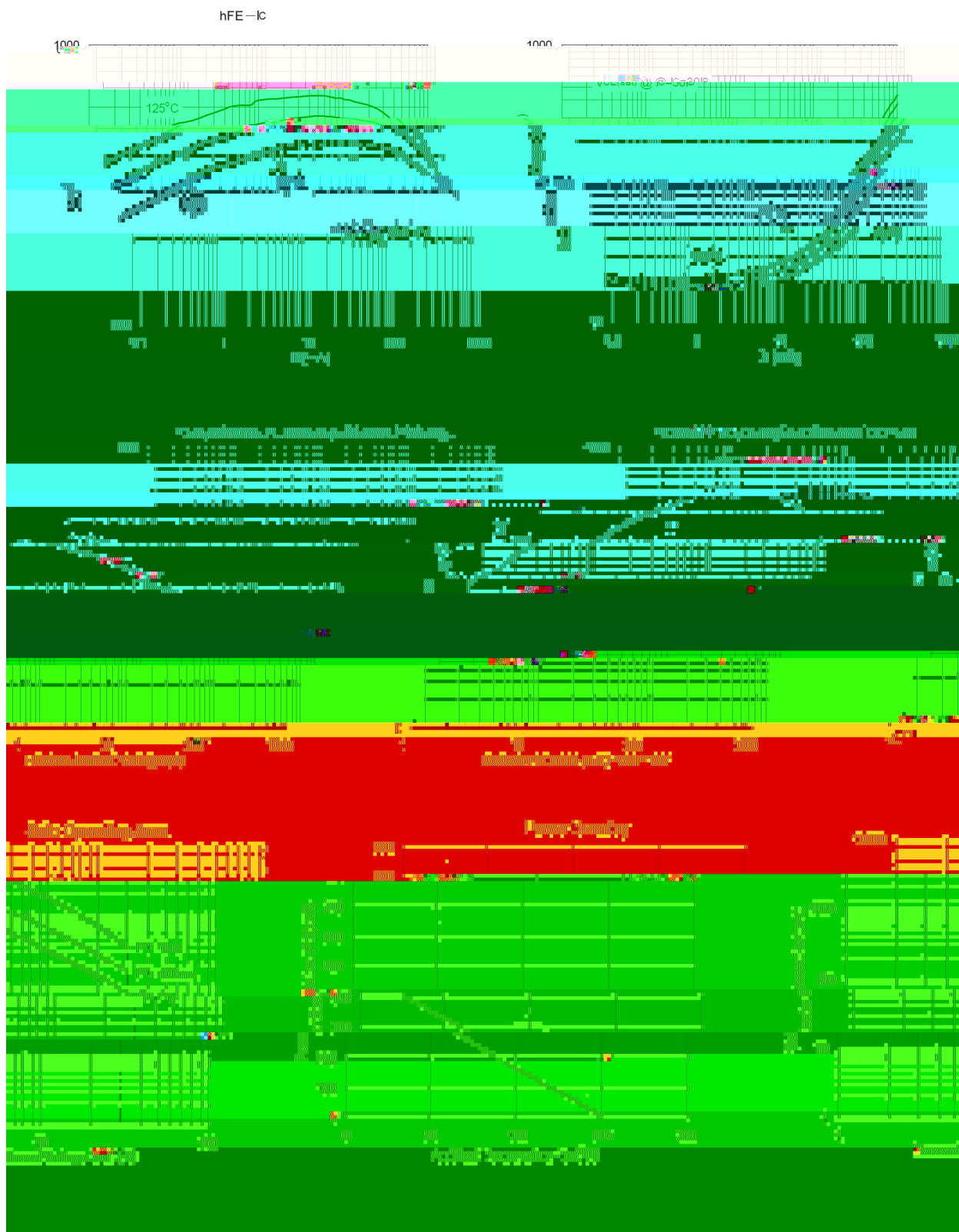
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	40	V
Collector to Emitter Voltage	V_{CEO}	20	V
Emitter to Base Voltage	V_{EBO}	6.0	V
Collector Current - Continuous	I_C	1.0	A
Collector Power Dissipation	P_C	400	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}	$I_C=0.1mA$ $I_E=0$	40			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0mA$ $I_B=0$	20			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=0.1mA$ $I_C=0$	6.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=40V$ $I_E=0$			1.0	A
Emitter Cut-Off Current	I_{CEO}	$V_{CE}=20V$ $I_B=0$			5.0	A
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=5.0V$ $I_C=0$			0.1	A
DC Current Gain	$h_{FE(1)}$	$V_{CE}=1.0V$ $I_C=100mA$	300		1000	
	$h_{FE(2)}$	$V_{CE}=1.0V$ $I_C=500mA$	300			
	$h_{FE(3)}$	$V_{CE}=1.0V$ $I_C=300mA$	300			
	$h_{FE(4)}$	$V_{CE}=1.0V$ $I_C=1.0mA$	290			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=600mA$ $I_B=20mA$			0.55	V
Transition Frequency	f_T	$I_C=50mA$ $f=30MHz$ $V_{CE}=10V$	100			MHz

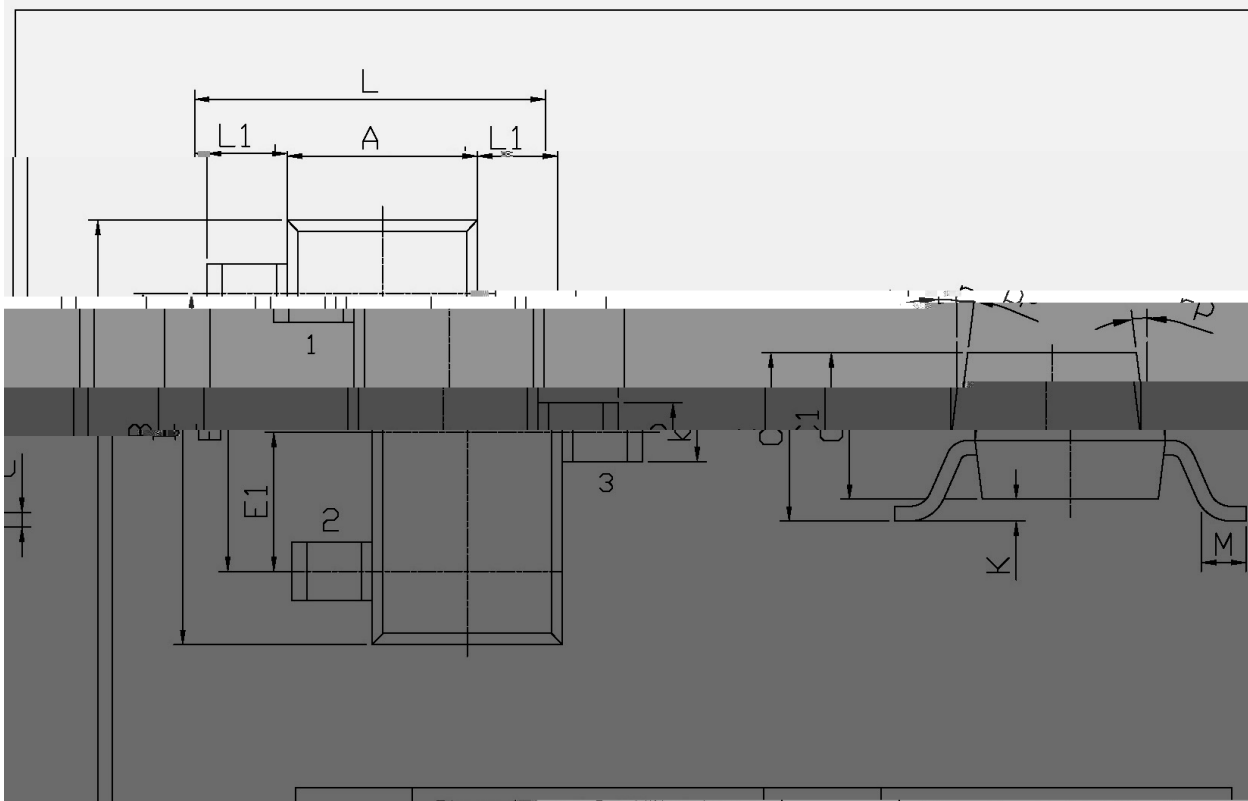
/ Electrical Characteristic Curve



/ Package Dimensions

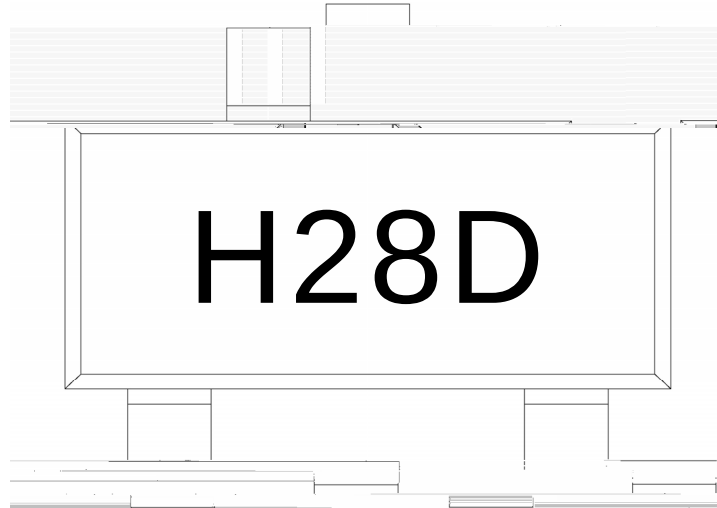
SOT-23

单位: mm



Dimensions in Millimeters			Dimensions in Millimeters				
Symbol	Min	Max	Symbol	Min	Max		
	L	2.2		2.7	C	1.30Max	
	L1	0.45		0.65	C1	0.90	1.20
	A	1.15		1.50	c	0.05	0.20
	B	2.70		3.10	K	0	0.10
	F	1.70		2.10	M	0.20MIN	
	b	0.35	0.55				

/ Marking Instructions



H

28

D h_{FE}

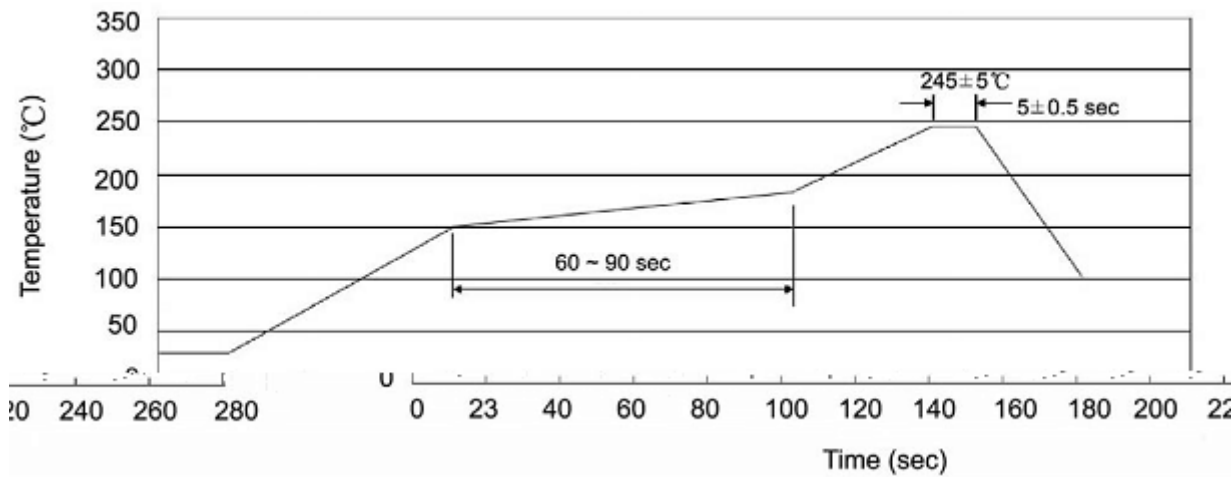
Note:

H: Company Code.

28: Product Type.

D: h_{FE} Classifications Symbol.

() / 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
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/ Packaging SPEC.

/ REEL

Package Type	Units Unit	m ù ½² ô u qUnit	lD
封装形式			