

SOT-89	NPN	Silicon NPN transistor in a SOT-89 Plastic Package.
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Adoption of MBIT processes, low collector-to-emitter saturation voltage, fast Switching Speed, Large current capacity and wide ASO, Complementary to KTB1124. Halogen-free Product.

Voltage regulators ,relay drivers lamp drivers, electrical equipment.

PIN1	Base	PIN 2	Collector	PIN 3	Emitter
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h _{FE} Classifications	A	B	C
Symbol			
h _{FE} Range	100 200	140 280	200 400
Marking	YHA *	YHB *	YHC *

/ Absolute Maximum Ratings(Ta=25)

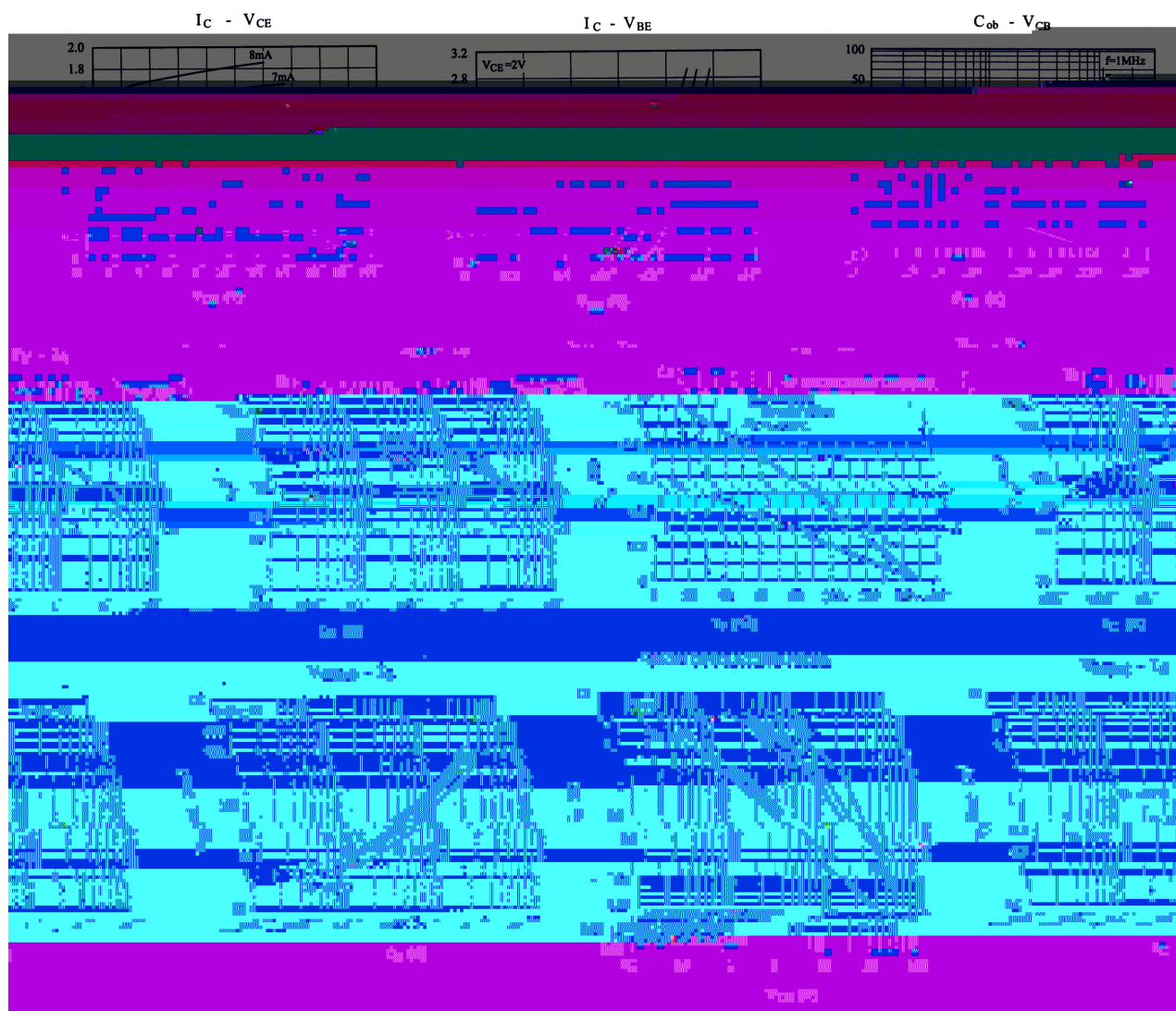
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	50	V
Emitter to Base Voltage	V_{EBO}	6.0	V
Collector Current - Continuous	I_C	3.0	A
Collector Current – Continuous Pulse	I_{CP}	6.0	A
Collector Power Dissipation	P_C	500	mW
Collector Power Dissipation*	$*P_C$	1.0	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

*:Package mounted on ceramic substrate(250mm²×0.8t)

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=10\text{ A}$ $I_E=0$	60			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0\text{mA}$ $I_B=0$	50			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=10\text{ A}$ $I_C=0$	6.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=40\text{V}$ $I_E=0$			1.0	A
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=4.0\text{V}$ $I_C=0$			1.0	A
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2.0\text{V}$ $I_C=100\text{mA}$	100		400	
	$h_{FE(2)}$	$V_{CE}=2.0\text{V}$ $I_C=3.0\text{A}$	35			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2.0\text{A}$ $I_B=100\text{mA}$		0.19	0.5	V
Base to Emitter Voltage	V_{BE}	$I_C=2.0\text{A}$ $I_B=100\text{mA}$		0.94	1.2	V
Transition Frequency	f_T	$V_{CE}=10\text{V}$ $I_C=50\text{mA}$		150		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10\text{V}$ $I_E=0$ $f=1\text{MHz}$		25		pF
Turn-On Time	t_{on}	$10I_{B1}=-10I_{B2}=I_C=1.0\text{A}$		70		nS
Storage Time	t_{stg}			650		nS
Fall Time	t_f			35		nS

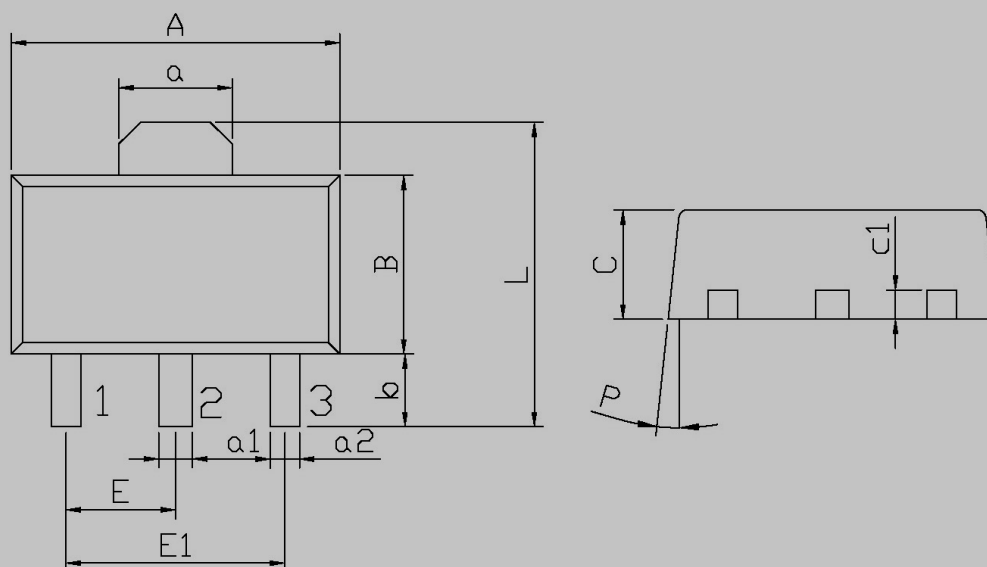
/ Electrical Characteristic Curve



/ Package Dimensions

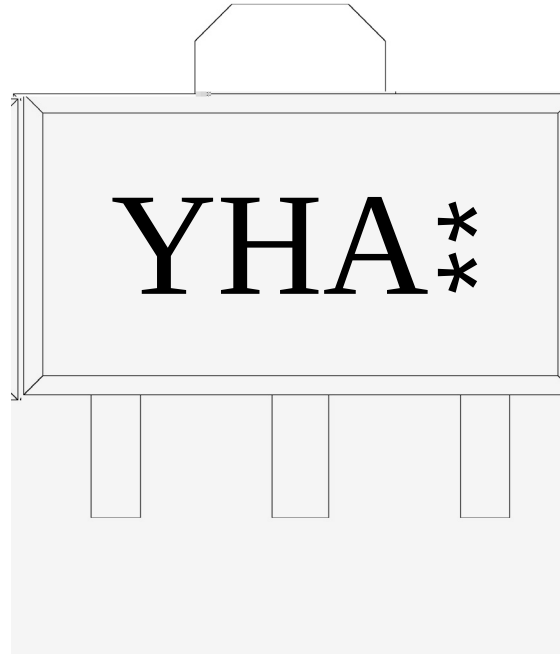
SOT-89

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.4	4.7	a1	0.36	0.56
B	2.35	2.65	a2	0.30	0.50
L	3.80	4.40	c1	0.35	0.50
a	1.45	1.65	P	6°	
E	1.40	1.60			
E1	2.80	3.20			
b	0.80	1.20			

/ Marking Instructions



Y

H

A h_{FE}

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Note:

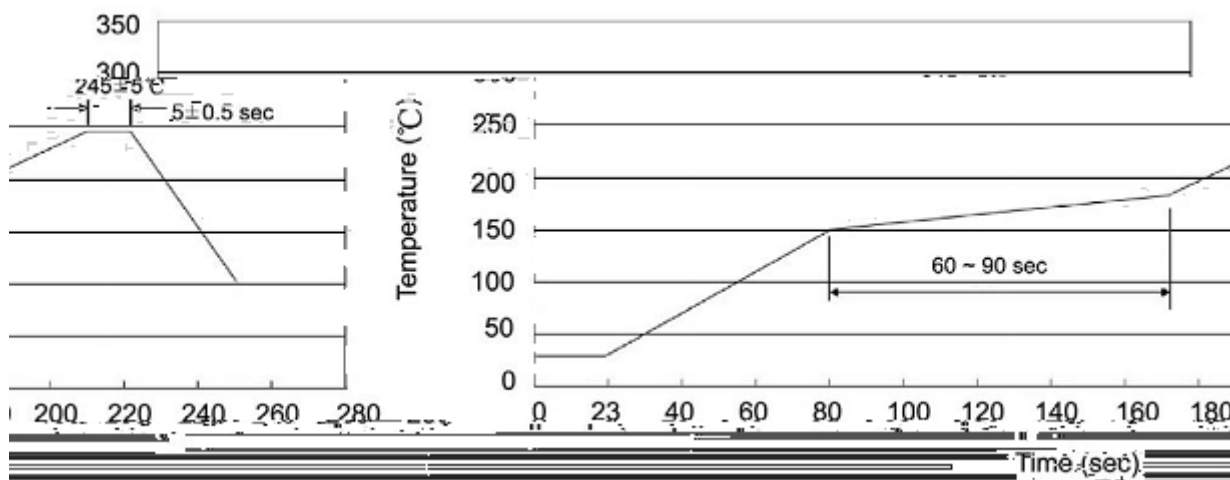
Y: Product Type.

H: Company Code.

A h_{FE} Classifications Symbol

**: Lot No. Code, code change with Lot No.

() / 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 ³)		
	只 卷盘	卷盘 盒	只 盒	盒 箱	只 箱		盒	箱

/ Notices