

/ Descriptions

Silicon NPN transistor in a SOT-89 Plastic Package.

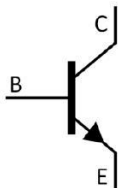
/ Features

Adoption of MBIT processes, low collector-to-emitter saturation voltage, fast Switching Speed, Large current capacity and wide ASO, Complementary to BRKTB1124Q, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

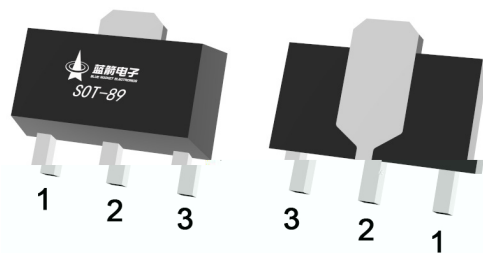
/ Applications

Voltage regulators ,relay drivers lamp drivers, electrical equipment, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ hFE Classifications & Marking

hFE Classifications Symbol	A	B	C
hFE Range	100~200	140~280	200~400
Marking	YQA * 	YQB * 	YQC *

/ Absolute Maximum Ratings(Ta=25)

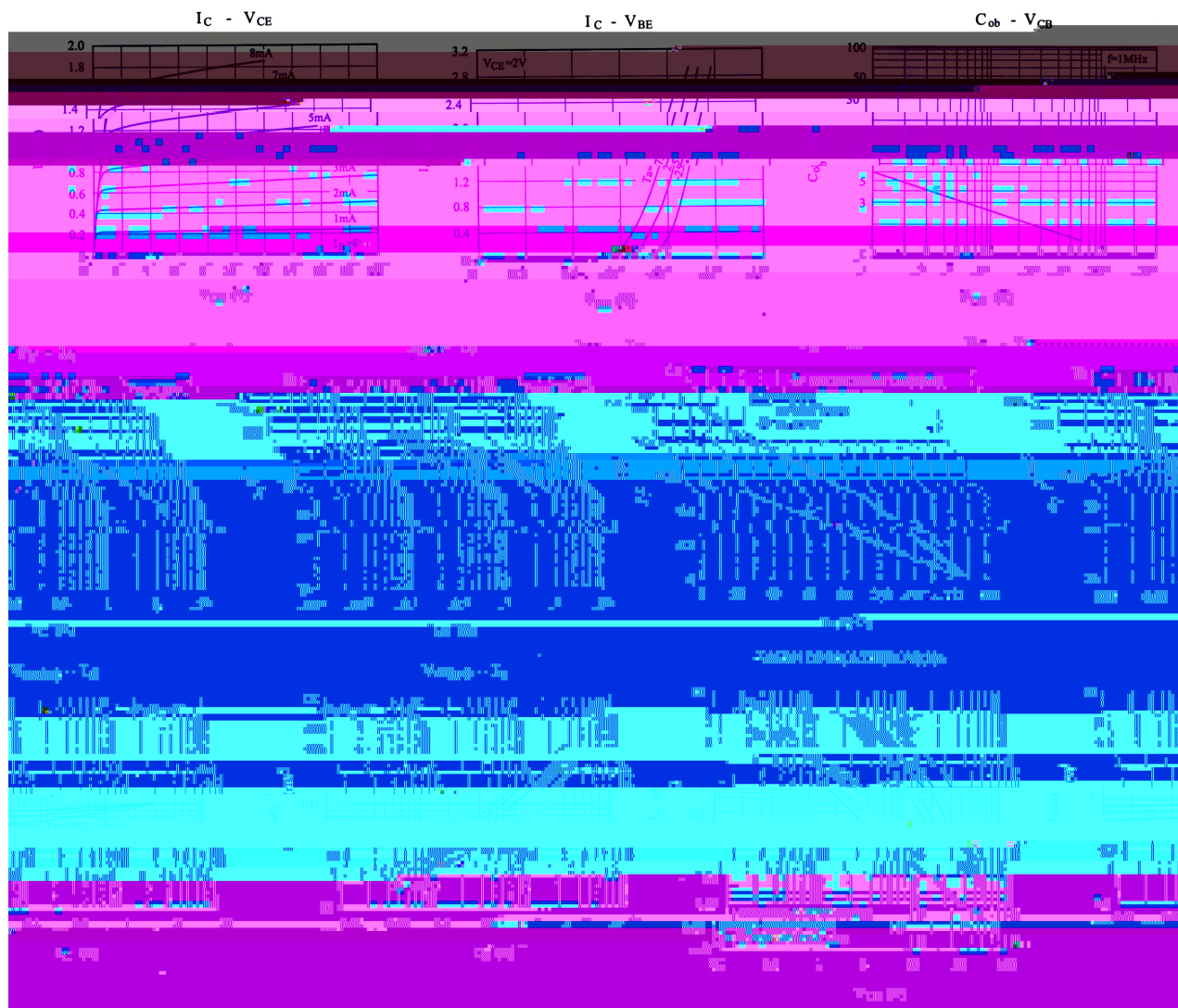
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V _{CBO}	60	V
Collector to Emitter Voltage	V _{CEO}	50	V
Emitter to Base Voltage	V _{EBO}	6.0	V
Collector Current - Continuous	I _C	3.0	A
Collector Current – Continuous (Pulse)	I _{CP}	6.0	A
Collector Power Dissipation	P _C	500	mW
Collector Power Dissipation*	*P _C	1.0	W
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	-55~150	°C

*: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 A I _E =0	60			V
Collector to Emitter Breakdown Voltage	V _{CEO}	I _C =1.0mA I _B =0	50			V
Emitter to Base Breakdown Voltage	V _{EBO}	I _E =10 A I _C =0	6.0			V
Collector Cut-Off Current		V _{CB} =40V I _E =0			1.0	A
Emitter Base Cut-Off Current		V _{EB} =4.0V I _C =0			1.0	A
DC Current Gain		V _{CE} =2.0V I _C =100mA	100		400	
		V _{CE} =2.0V I _C =3.0A	35			
Collector to Emitter Saturation Voltage		I _C =2.0A I _B =100mA		0.19	0.5	V
Base to Emitter Voltage		I _C =2.0A I _B =100mA		0.94	1.2	V
Transition Frequency		V _{CE} =10V I _C =50mA		150		MHz
Collector Output Capacitance	C _{ob}	V _{CB} =10V I _E =0 f=1MHz		25		pF
Turn-On Time	t _{on}	10I _{B1} =-10I _{B2} =I _C =1.0A		70		nS
Storage Time	t _{stg}			650		nS
Fall Time	t _f			35		nS

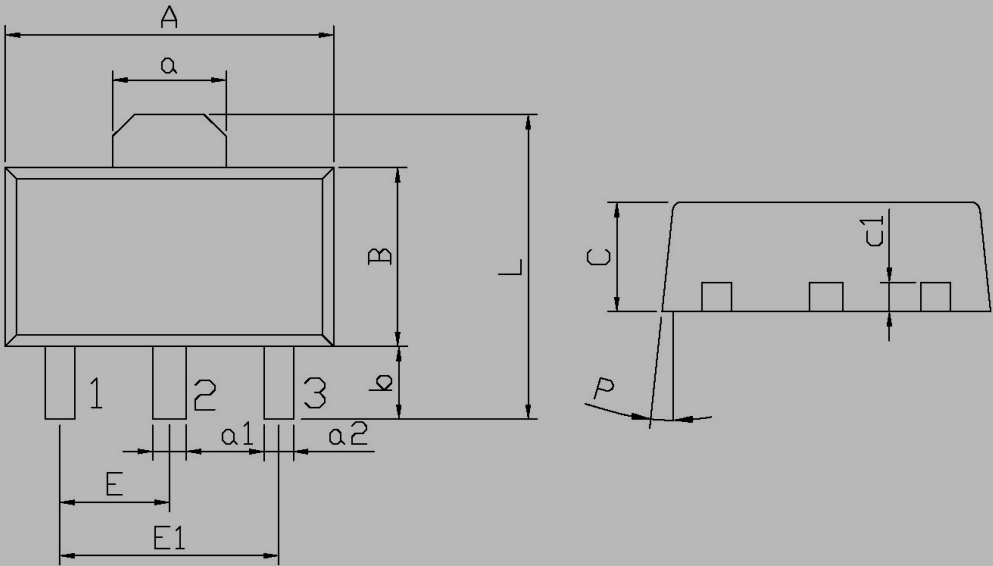
/ Electrical Characteristic Curve



/ Package Dimensions

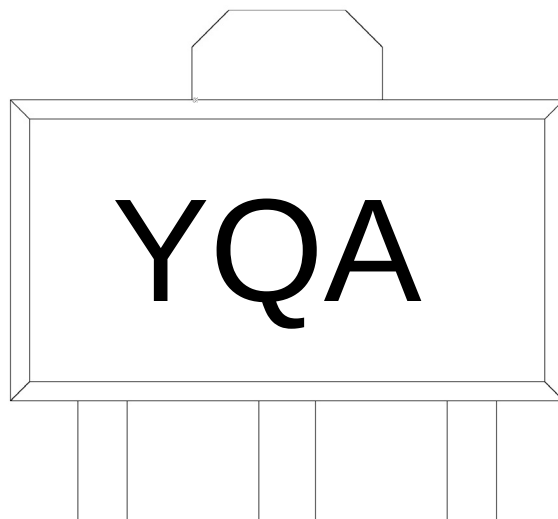
SOT-89

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
R_L	0.35	0.65	a2	0.30	0.50

/ Marking Instructions



Y

A h_{FE}

Note:

Y: Product Type.

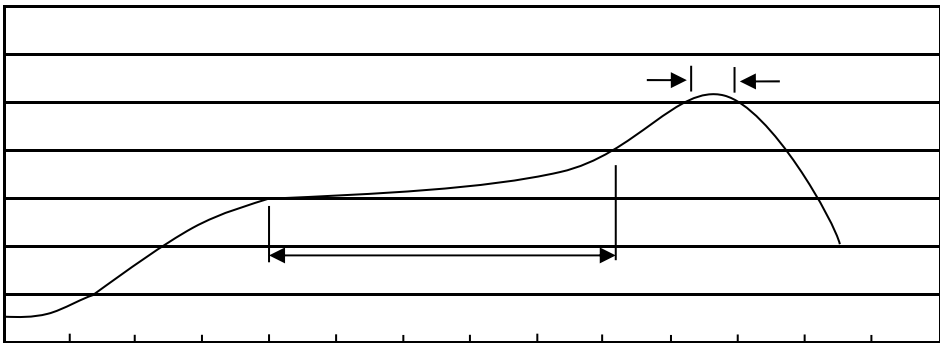
Q: Automobile halogen-free product Code

A h_{FE} Classifications Symbol

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Lot No. Code, code change with Lot No

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1

150 200

60 120sec;

1.Preheating:150~200 , Time:60~120sec.
- 2

255 5

5 0.5sec;

2.Peak Temp.:255 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: mm³)		
	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-89	1,000	7	7,000	6	42,000	7" ×12	180×120×180	390×385×205

/ Notices