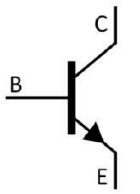
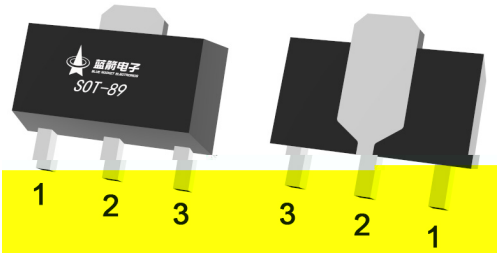
SOT-89 NPN Silicon NPN transistor in a SOT-89 Plastic Package.

MBIT - ,
BRKTB1124Q AEC-Q101
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.

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





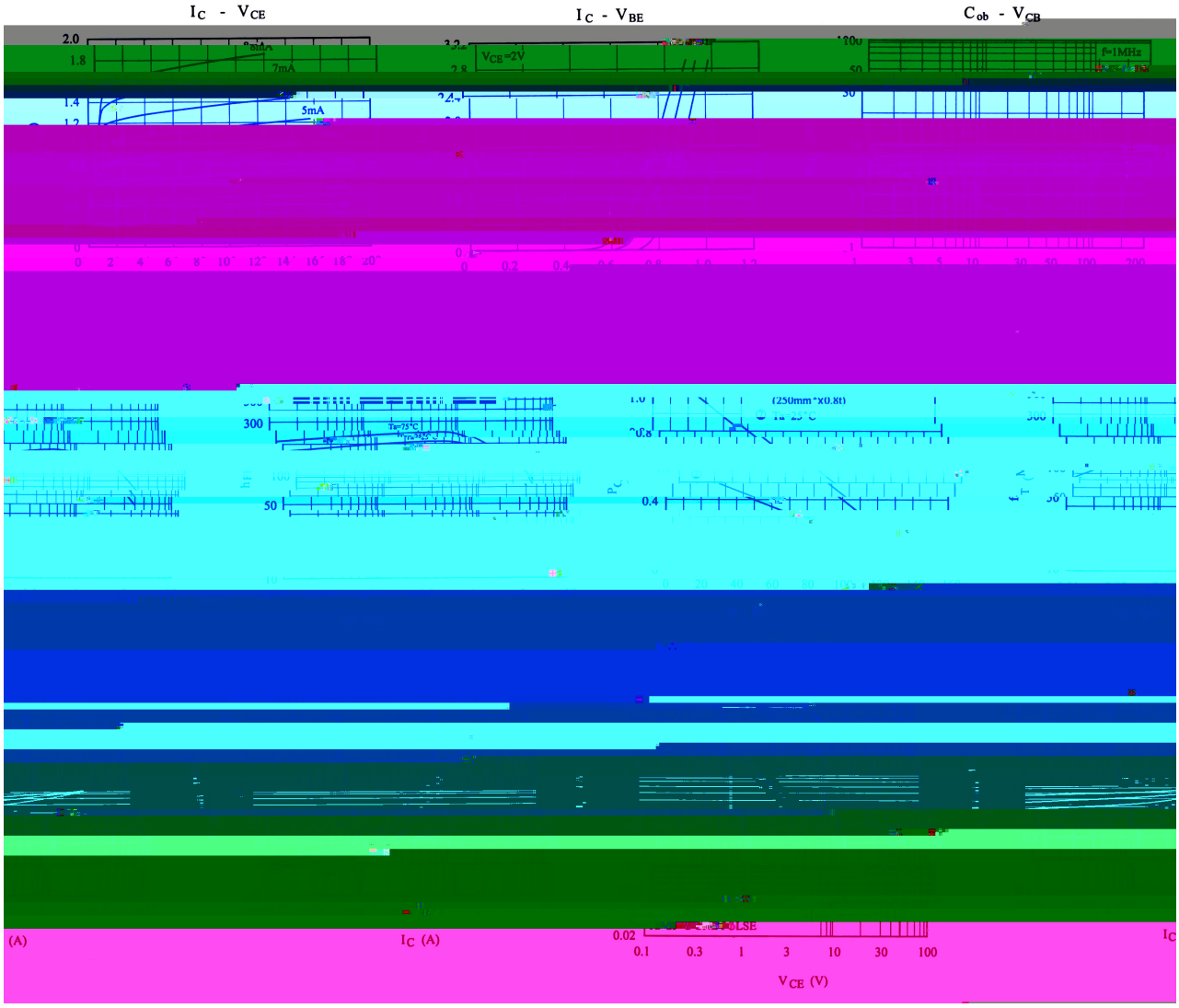
PIN1 Base PIN 2 Collector PIN 3 Emitter

h_{FE} Classifications Symbol	A	B	C
h_{FE} Range	100～200	140～280	200～400
Marking	YQA **	YQB **	YQC **

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	℃

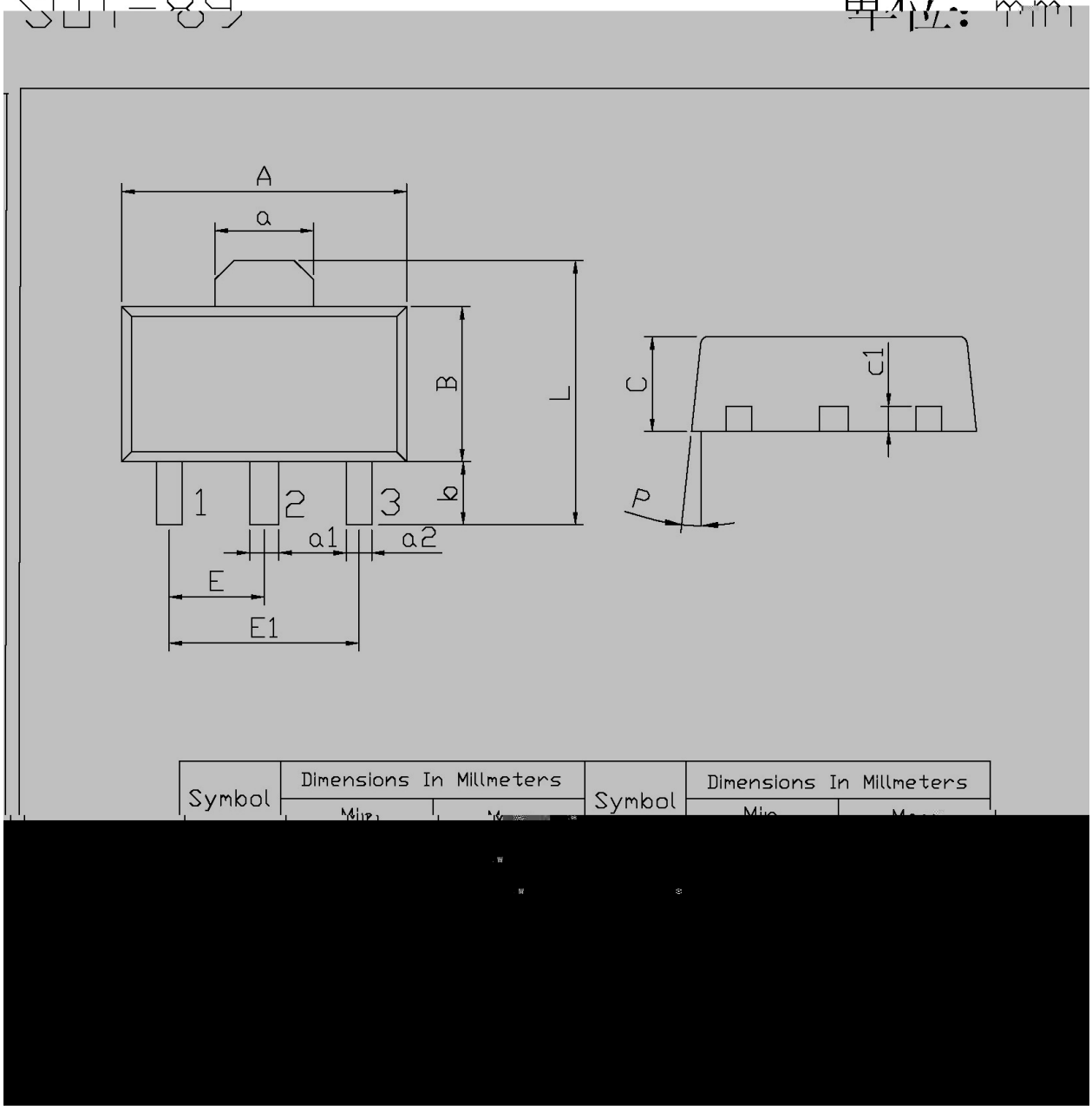
*:Package mounted on ceramic substrate(250mm^2×0.8t)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=10μA 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=10μA I_C=0	6.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=40V I_E=0			1.0	μA
Emitter Base Cut-Off Current	I_{EBO}	V_{EB}=4.0V I_C=0			1.0	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=2.0V I_C=100mA	100		400	
	$h_{FE(2)}$	V_{CE}=2.0V I_C=3.0A	35			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=2.0A I_B=100mA		0.19	0.5	V
Base to Emitter Voltage	V_{BE}	I_C=2.0A I_B=100mA		0.94	1.2	V
Transition Frequency	f_T	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}	101_{B1}=-101_{B2}=I_C=1.0A		70		nS
Storage Time	t_{stg}			650		nS
Fall Time	t_f			35		nS

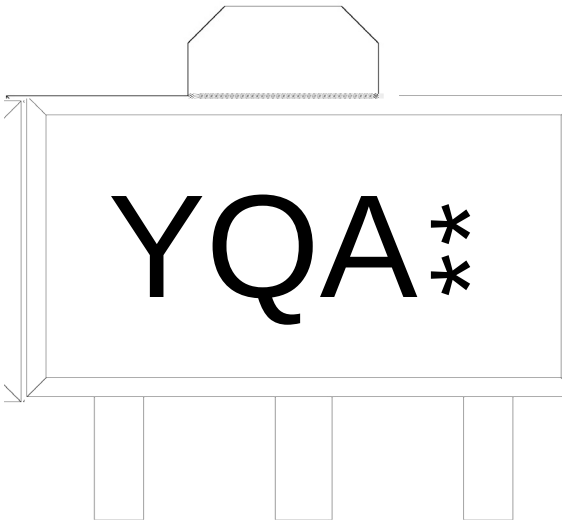

I C - V CE
I C - V BE
C ob - V CB
2.0
1.8
1.4
7mA
5mA
VCE=2V
f=1MHz
0 2 4 6 8 10 12 14 16 18 20
0 0.2 0.4
1 3 5 10 30 50 100 200
300
50
(250mm*x0.8t)
0.8
0.4
(A)
I C (A)
0.02
0.1 0.3 1 3 10 30 100
V CE (V)
I C

SOT-89

单位：mm



Symbol	Dimensions In Millmeters		Symbol	Dimensions In Millmeters	
	Min	Max		Min	Max



Y

Q

A h_{FE}

**

Note:

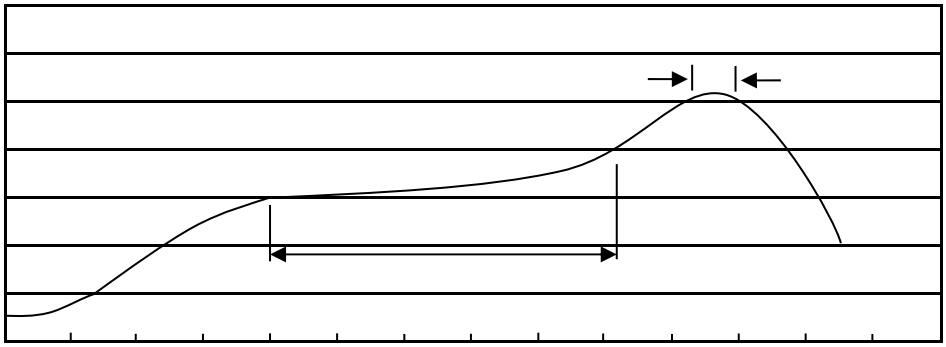
Y: Product Type.

Q: Automobile halogen-free product Code

A h_{FE} Classifications Symbol

**: 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.	

260±5	10±1 sec.	Temp.:260±5℃	Time:10±1 sec

/ 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