

BR3CG5350TAQ

Rev.A Jan.-2023

/ Descriptions

SOT-89 PNP

Silicon PNP transistor in a SOT-89 Plastic Package.

/ Features

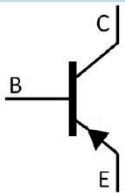
AEC-Q101

Low $V_{CE(sat)}$, high current, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

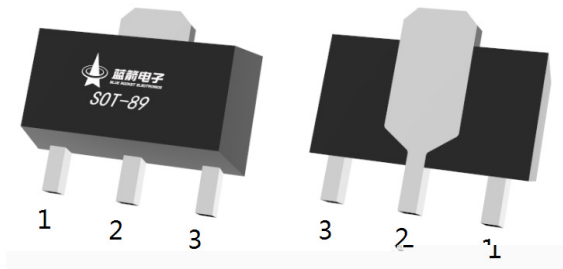
/ Applications

General purpose switching and muting, LCD back-lighting, supply line switching circuits, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ hFE Classifications & Marking

Marking	QS46 * *
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/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-50	V
Collector to Emitter Voltage	V_{CEO}	-50	V
Emitter to Base Voltage	V_{EBO}	-5	V
Collector Current - Continuous	I_C	-3	A
Peak collector current	I_{CM}	-5	A
Collector Base - Continuous	I_B	-0.5	A
Total power dissipation()	$P_{tot}()$	550	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-65 150	

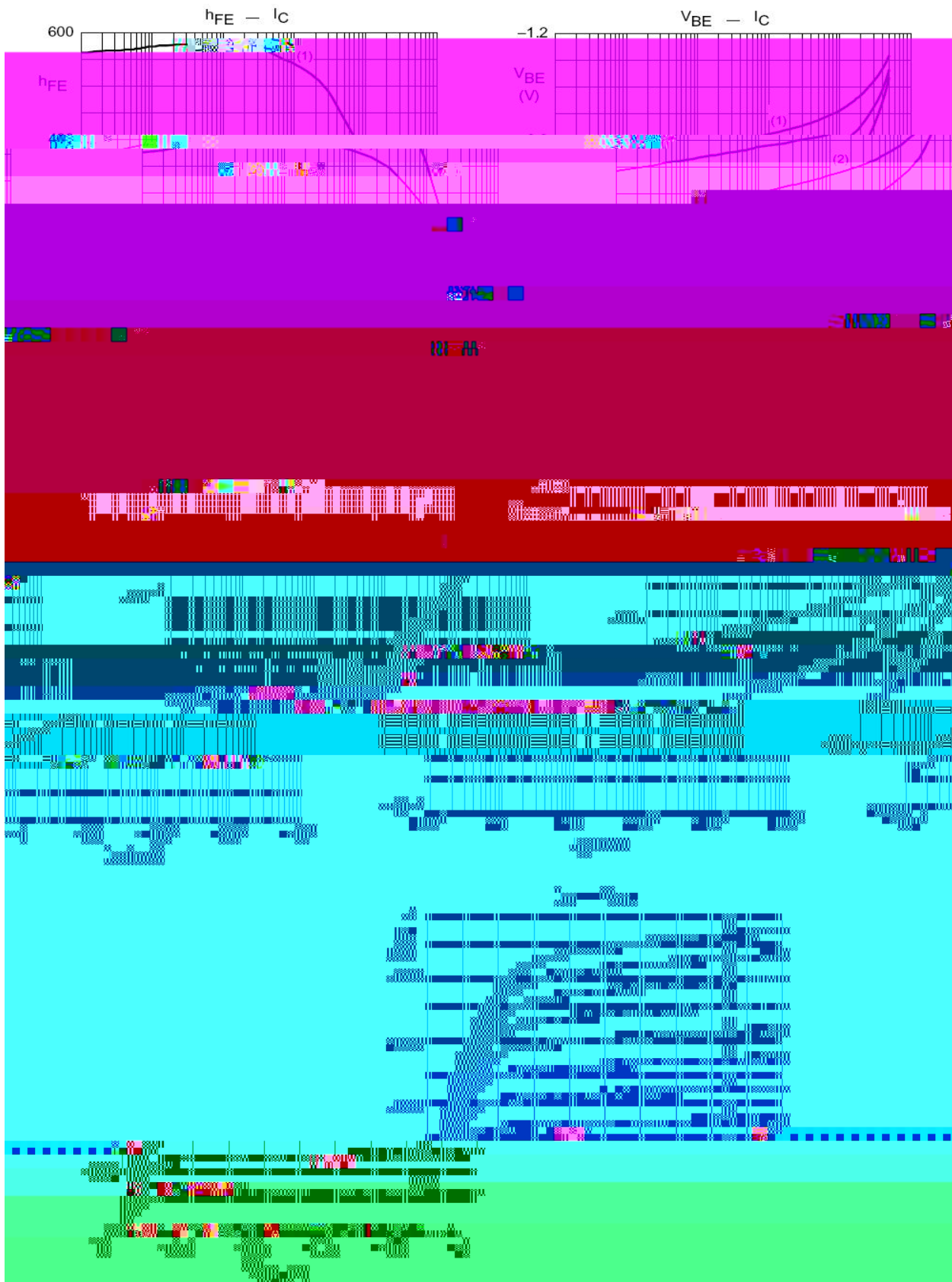
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-50V$ $I_E=0$			-100	nA
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-50V$ $I_E=0$ $T_j=150$			-50	μA
Collector cut-off current	I_{CES}	$V_{CE}=-50V$ $V_{BE}=0$			-100	nA
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=-5.0V$ $I_C=0$			-100	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-2.0V$ $I_C=-0.1A$	200			
	$h_{FE(2)}$	$V_{CE}=-2.0V$ $I_C=-0.5A$	200			
	$h_{FE(3)*}$	$V_{CE}=-2.0V$ $I_C=-1.0A$	200		450	
	$h_{FE(4)*}$	$V_{CE}=-2.0V$ $I_C=-2.0A$	130			
	$h_{FE(5)*}$	$V_{CE}=-2.0V$ $I_C=-3.0A$	80			
Collector to Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=-0.5A$ $I_B=-50mA$			-90	mV
	$V_{CE(sat)(2)}$	$I_C=-2.0A$ $I_B=-100mA$			-320	mV
Equivalent on-resistance	$R_{CE(sat)*}$	$I_C=-2.0A$ $I_B=-200mA$		90	135	m Ω
Base to Emitter Saturation Voltage	$V_{BE(sat)(1)}$	$I_C=-2.0A$ $I_B=-100mA$			-1.1	V
	$V_{BE(sat)(2)*}$	$I_C=-3.0A$ $I_B=-300mA$			-1.2	V
Base-emitter turn-on voltage	$V_{BE(ON)}$	$V_{CE}=-2.0V$ $I_C=-1.0A$			-1.1	V
Transition Frequency	f_T	$V_{CE}=-5.0V$ $I_C=100mA$ $f=100MHz$	100			MHz
Collector capacitance	C_C	$V_{CB}=-10V$ $I_E=0$ $f=1.0MHz$			35	pF

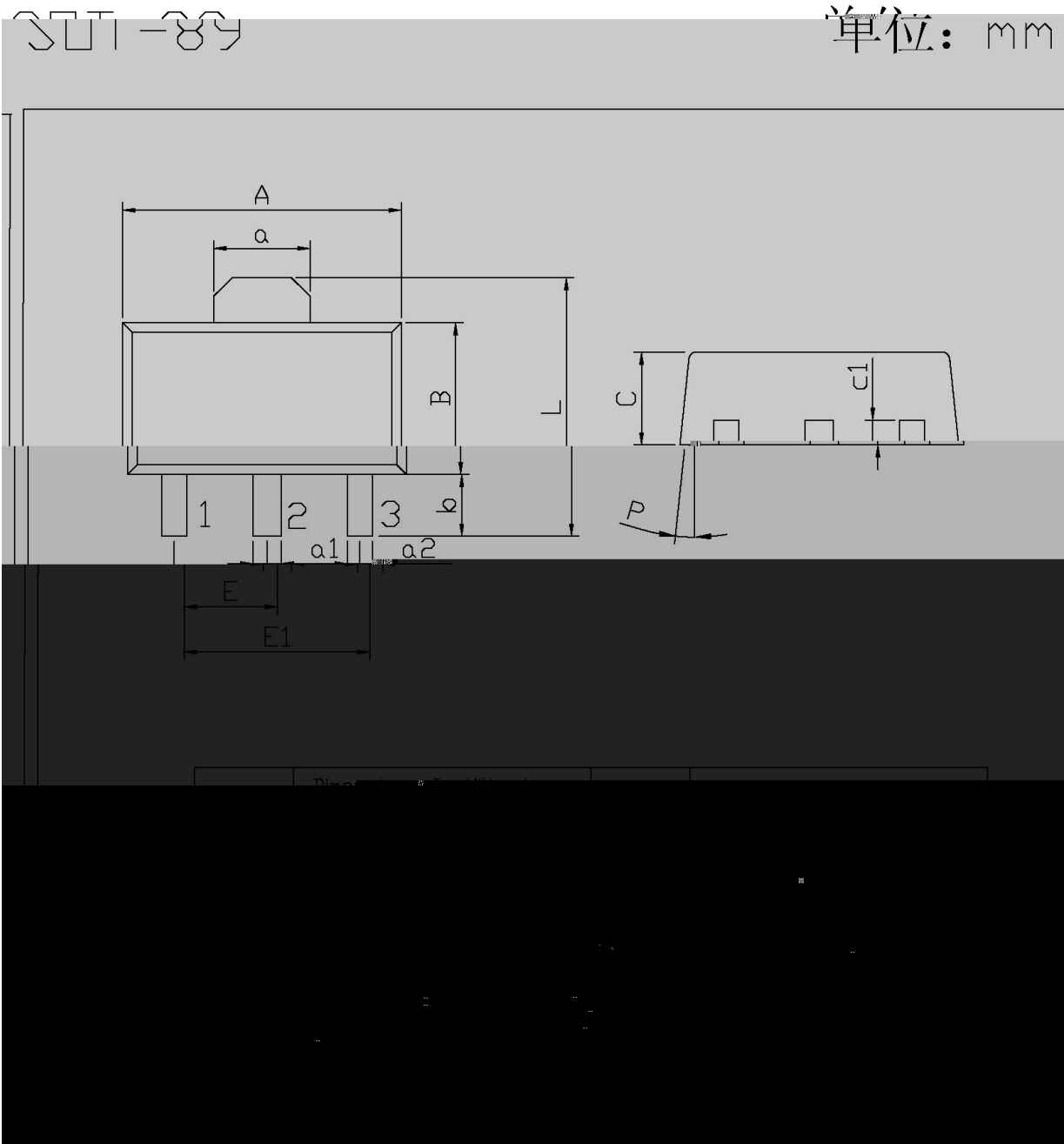
* $\leq 300\mu s, \delta \leq 2.0\%$ *pulse test: pulse width $\leq 300\mu s, \delta \leq 2.0\%$.



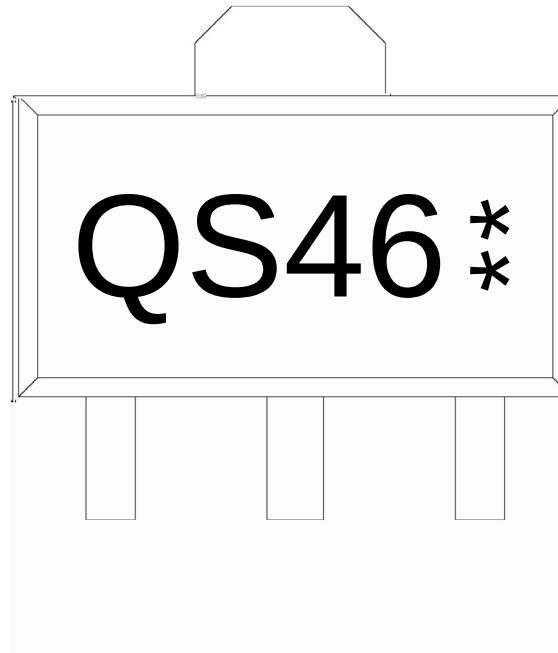
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



Q

S46

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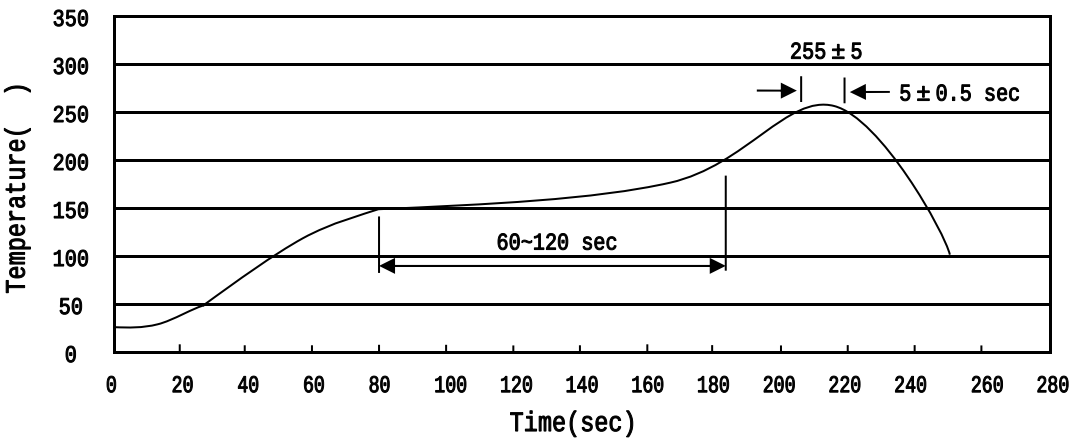
Note:

Q: Automobile halogen-free product Code

S46: Product Type

**: 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	Units					Dimension (unit mm ³)		
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
SOT-89	1,000	7	7,000	6	42,000	7 ×12	180×120×180	390×385×205

/ Notices