

**/ Descriptions**

Silicon NPN transistor in a SOT-89 Plastic Package.

**/ Features**

BR2SB1424Q

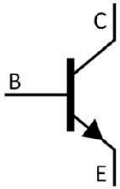
AEC-Q101

Low  $V_{CE(sat)}$ , excellent current gain characteristic, Complementary to BR2SB1424Q, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

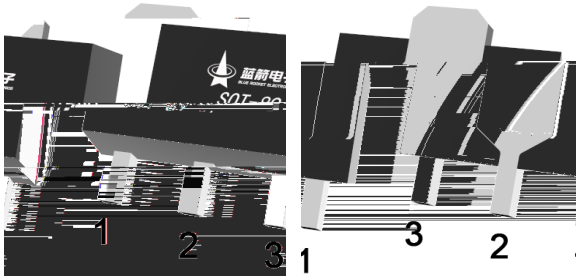
**/ Applications**

General purpose amplifier, Meet the stringent requirements of automotive applications.

**/ Equivalent Circuit**



**/ Pinning**



PIN1 Base      PIN 2 Collector      PIN 3 Emitter

**/ h<sub>FE</sub> Classifications & Marking**

h <sub>FE</sub> Classifications Symbol	Q	R	S	E
h <sub>FE</sub> Range	120 270	180 390	270 560	390 820
Marking	QCFQ	QCFR	QCFS	QCFE

## / Absolute Maximum Ratings(Ta=25 )

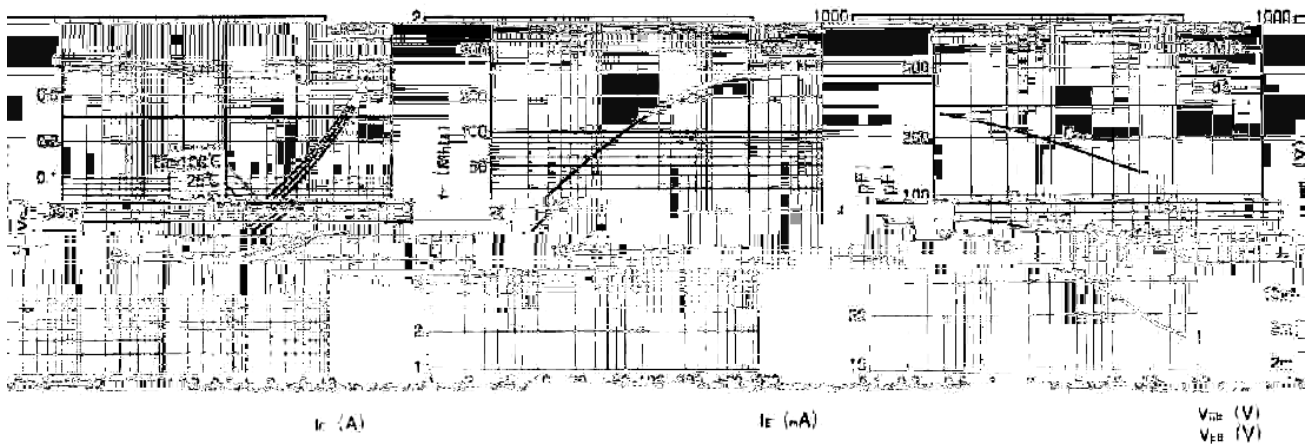
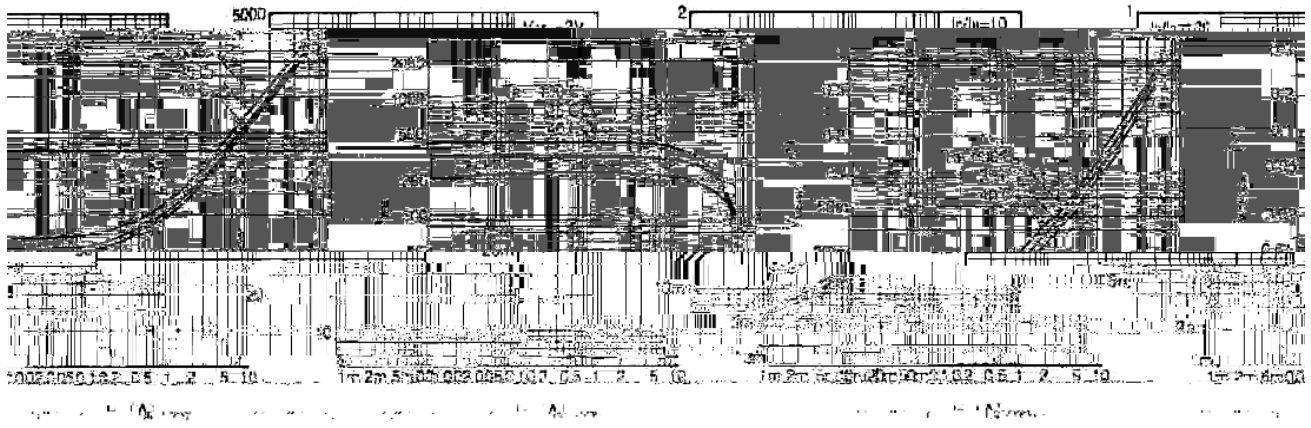
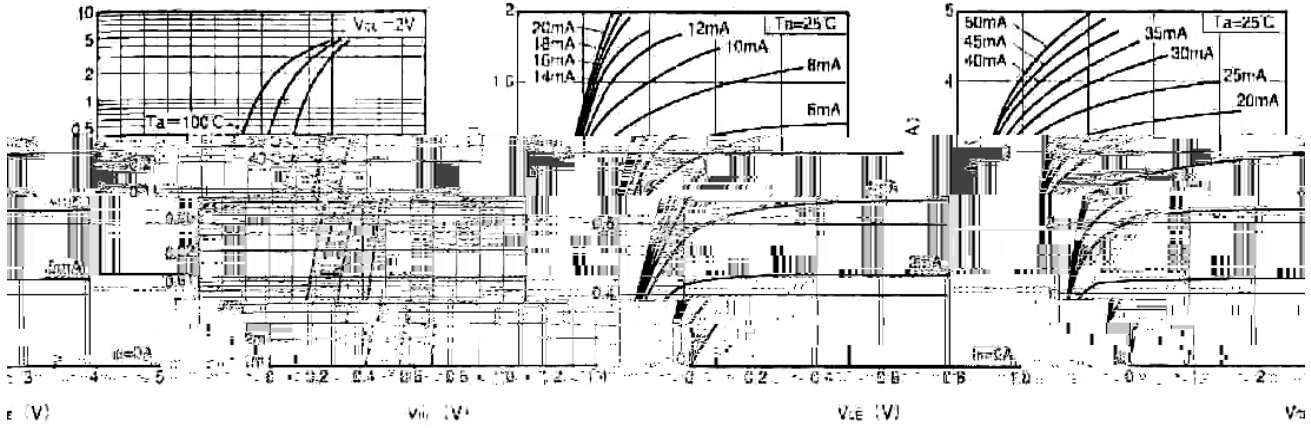
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V <sub>CB0</sub>	40	V
Collector to Emitter Voltage	V <sub>CEO</sub>	20	V
Emitter to Base Voltage	V <sub>EBO</sub>	6.0	V
Collector Current-Continuous	I <sub>C(DC)</sub>	3.0	A
Collector Base-Continuous(Pulse)*	I <sub>C(Pulse)*</sub>	5.0	A
Collector Power Dissipation	P <sub>C</sub>	500	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 150	°C

\*:Single pulse P<sub>w</sub>=10ms

## / Electrical Characteristics(Ta=25 )

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V <sub>CB0</sub>	I <sub>C</sub> =50μA	40			V
Collector to Emitter Breakdown Voltage	V <sub>CEO</sub>	I <sub>C</sub> =1.0mA	20			V
Emitter to Base Breakdown Voltage	V <sub>EBO</sub>	I <sub>E</sub> =50μA	6.0			V
Collector Cut-Off Current	I <sub>CB0</sub>	V <sub>CB</sub> =30V			0.1	μA
Emitter Base Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =5.0V			0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =2.0V I <sub>C</sub> =100mA	180		560	
Collector to Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =2.0A I <sub>B</sub> =100mA		0.2	0.5	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =2.0V I <sub>C</sub> =0.5A f=100MHz		290		MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V I <sub>E</sub> =0 f=1.0MHz		25		pF

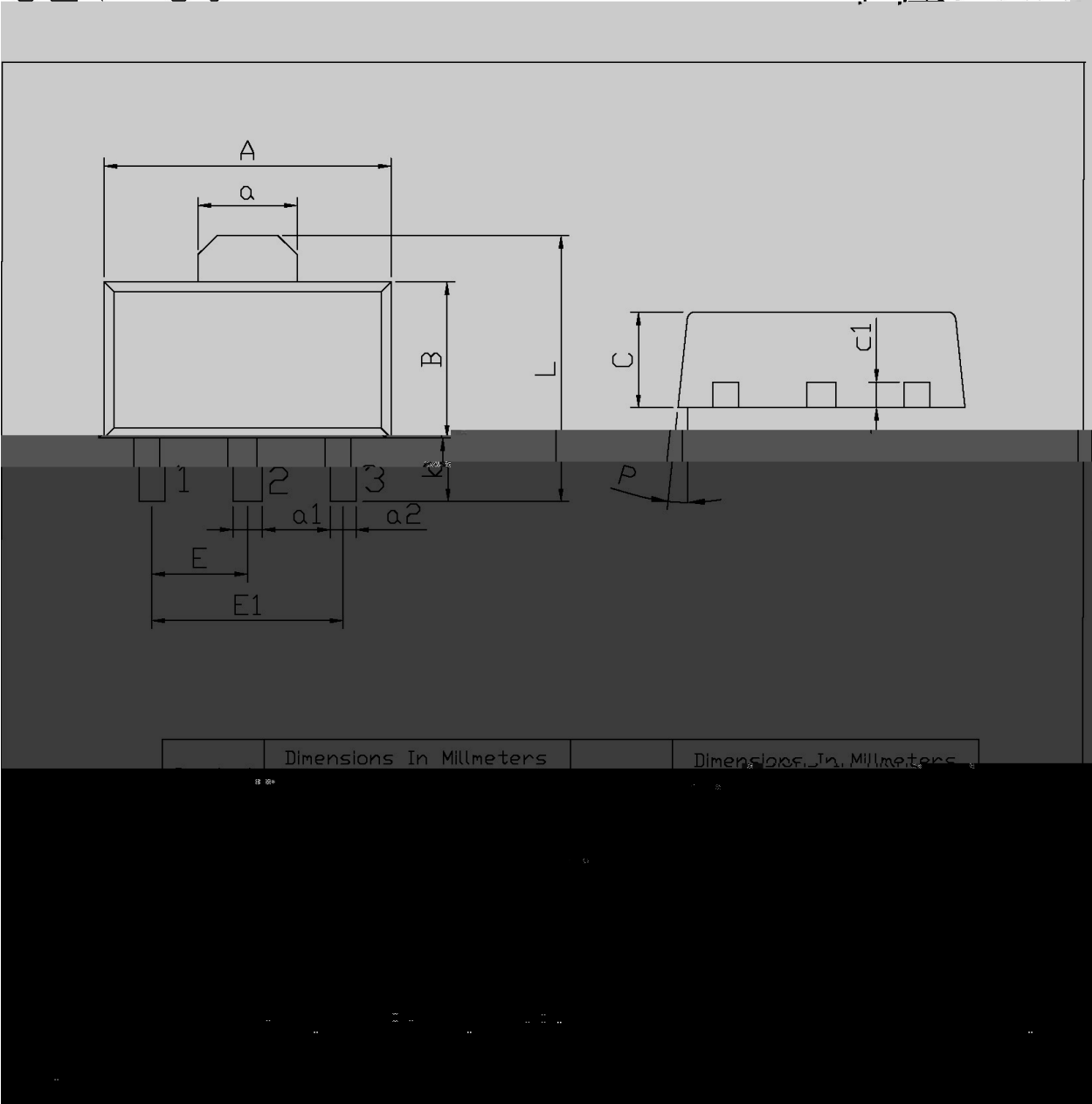
**/ Electrical Characteristic Curve**



**/ Package Dimensions**

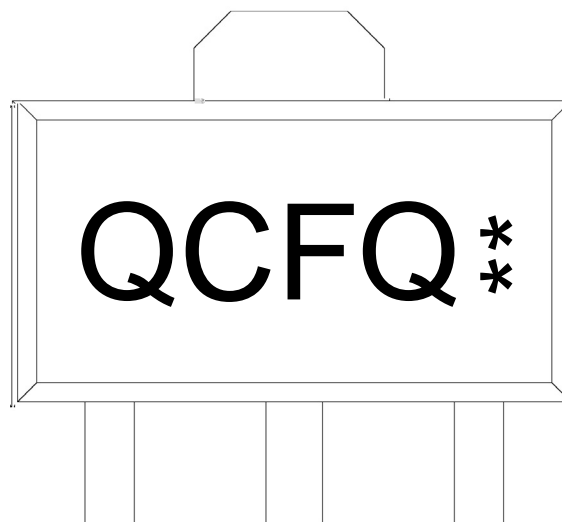
SOT-89

单位: mm



Dimensions In Millimeters	Dimensions In Millimeters
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/ Marking Instructions



Q

CF

Q:  $h_{FE}$

Note:

Q: Automobile halogen-free product Code

CF: Product Type

Q  $h_{FE}$  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.

**/ 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 <sup>3</sup> )		
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box