/ Descriptions

Silicon NPN transistor in a SOT-89 Plastic Package.

/ Features

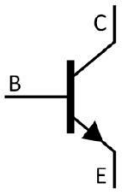
BR2SB1424Q AEC-Q101

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

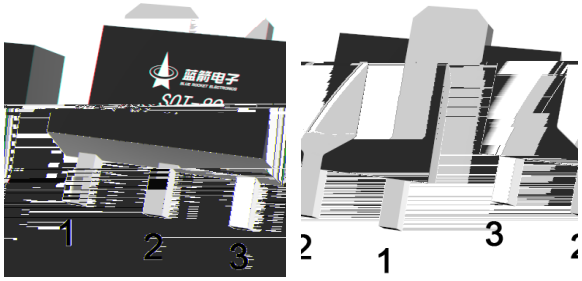
/ Applications

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

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	Q	R	S	E
h_{FE} Range	120 270	180 390	270 560	390 820
Marking	QCFQ**	QCFR**	QCFS**	QCFE**

/ Absolute Maximum Ratings(Ta=25)

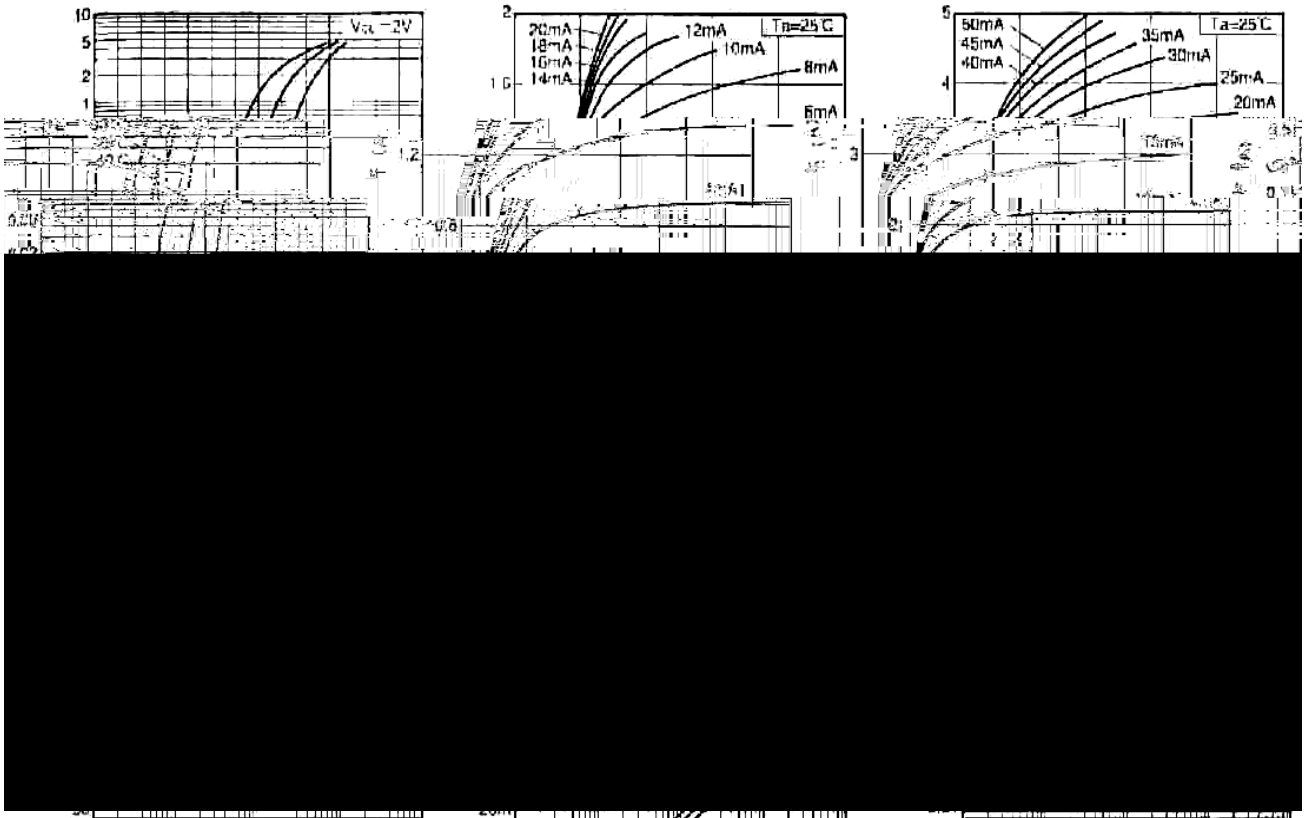
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	40	V
Collector to Emitter Voltage	V_{CEO}	20	V
Emitter to Base Voltage	V_{EBO}	6.0	V
Collector Current-Continuous	$I_{C(DC)}$	3.0	A
Collector Base-Continuous(Pulse)*	$I_{C(Pulse)*}$	5.0	A
Collector Power Dissipation	P_C	500	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

*:Single pulse P_W=10ms

/ Electrical Characteristics(Ta=25)

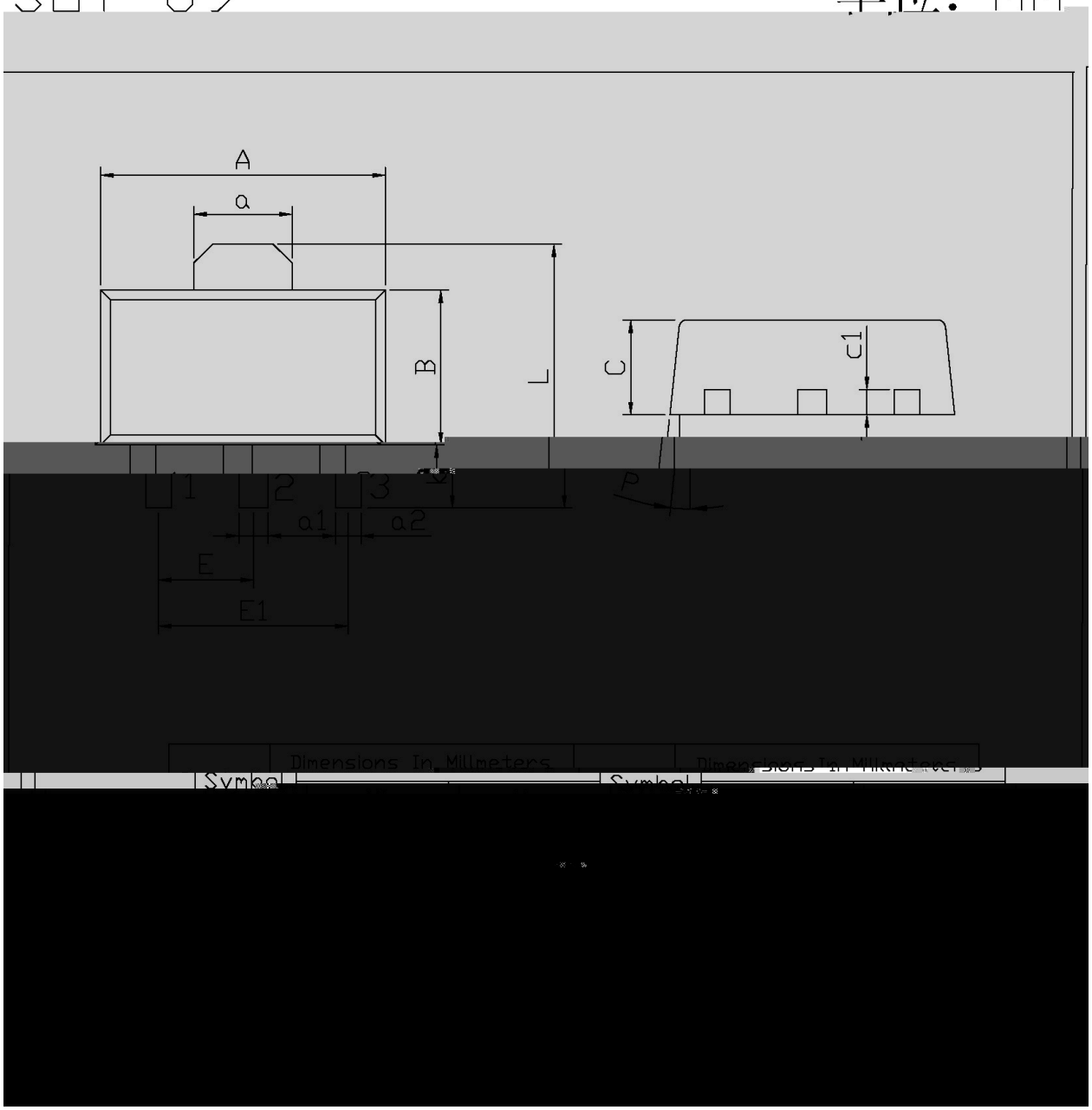
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=50μA	40			V
Collector to Emitter Breakdown Voltage	V_{CEO}	I_C=1.0mA	20			V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E=50μA	6.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=30V			0.1	μA
Emitter Base Cut-Off Current	I_{EBO}	V_{EB}=5.0V			0.1	μA
DC Current Gain	h_{FE}	V_{CE}=2.0V I_C=100mA	180		560	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=2.0A I_B=100mA		0.2	0.5	V
Transition Frequency	f_T	V_{CE}=2.0V I_C=0.5A f=100MHz		290		MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V I_E=0 f=1.0MHz		25		pF

/ Electrical Characteristic Curve

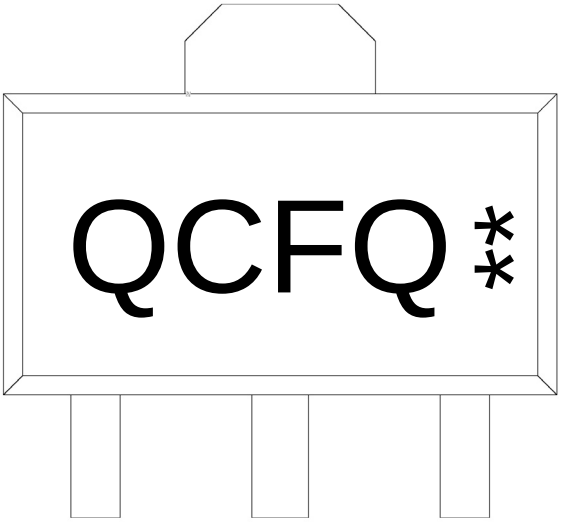


/ Package Dimensions

SOT-89 单位：mm



/ 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 mm³)
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box