/ Descriptions

Silicon NPN transistor in a SOT-89 Plastic Package.

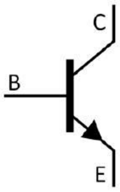
/ Features

High current, low voltage, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

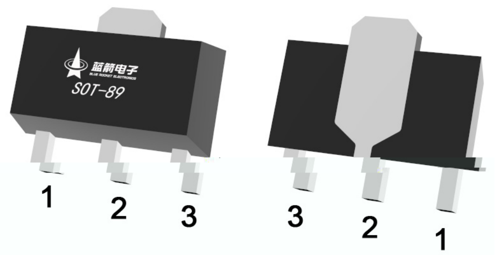
/ Applications

Driver stages of audio and video amplifiers applications, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ Marking

$h_{FE(1)}$ Classifications	10	16
$h_{FE(1)}$ Range	63 160	100 250
Marking	QBK ⁑	QBL ⁑

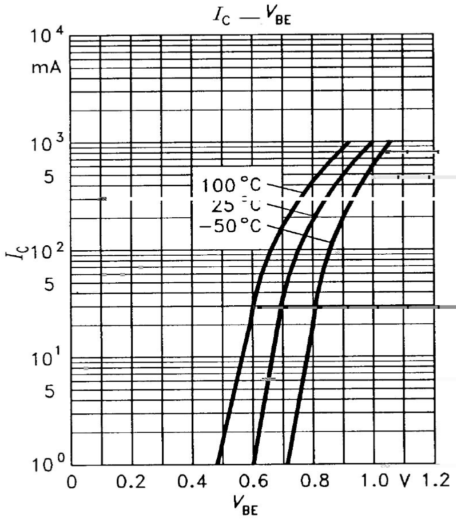
/ Absolute Maximum Ratings(Ta=25)

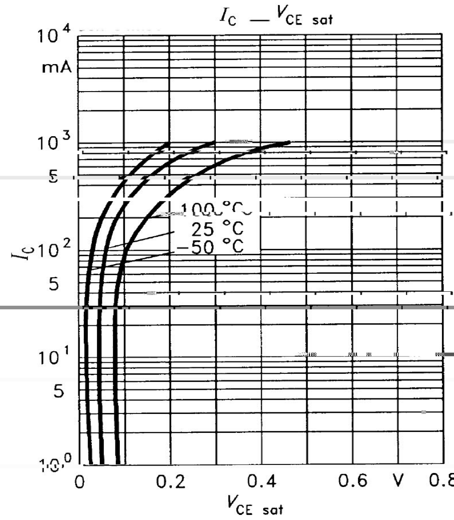
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	100	V
Collector to Emitter Voltage	V_{CEO}	80	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current-Continuous	I_C	1	A
Peak Collector Current	I_{CM}	1.5	A
Peak Base Current	I_{BM}	0.2	A
Collector Power Dissipation	$P_C(T_C=25\ )$	1.3	W
Storage Temperature Range	T_{stg}	-55 150	

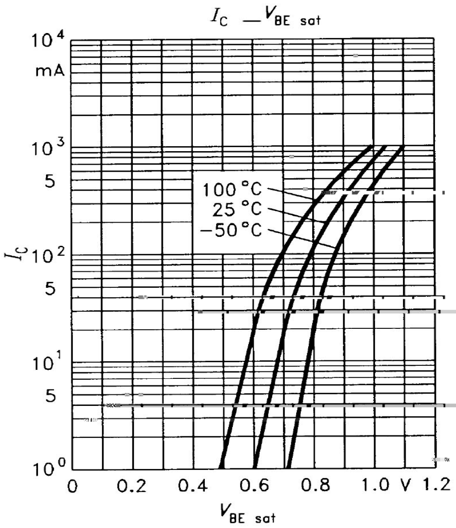
/ Electrical Characteristics(Ta=25)

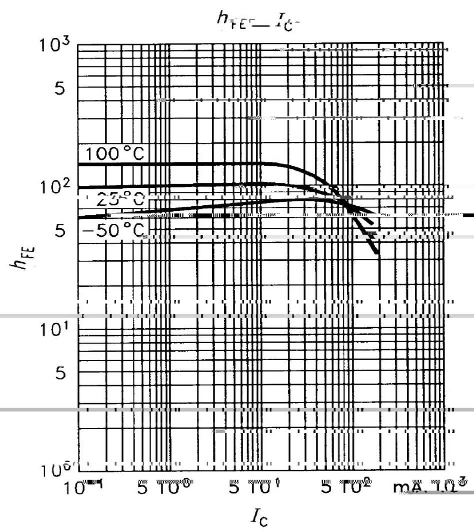
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=100 A I_E=0	100			V
Collector to Emitter Breakdown Voltage	V_{CEO}	I_C=500 A I_B=0	80			V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E=100 A I_C=0	5.0			V
Collector Cut-Off Current	$I_{CBO(1)}$	V_{CB}=30V I_E=0			0.1	μA
	$I_{CBO(2)}$	V_{CB}=30V I_E=0 T_j=125			10	μA
Emitter Base Cut-Off Current	I_{EBO}	V_{EB}=5V I_C=0			0.1	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=2V I_C=150mA	63		250	
	$h_{FE(2)}$	V_{CE}=2V I_C=5mA	40			
	$h_{FE(3)}$	V_{CE}=2V I_C=500mA	25			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=500mA I_B=50mA			0.5	V
Base to Emitter Voltage	V_{BE}	I_C=500mA V_{CE}=2V			1	V
Transition Frequency	f_T	I_C=10mA V_{CE}=5V f=100MHz		130		MHz
DC Current Gain Ratio Of The Complementary Pairs	$\frac{h_{FE1}}{h_{FE2}}$	$\lvert I_C\rvert$=150mA $\lvert V_{CE}\rvert$=2V		1.3	1.6	

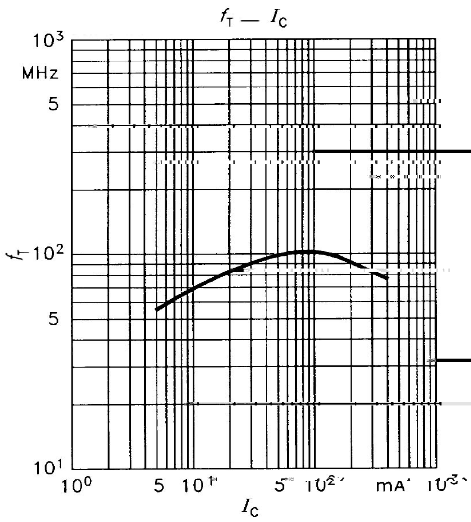
/ Electrical Characteristic Curve





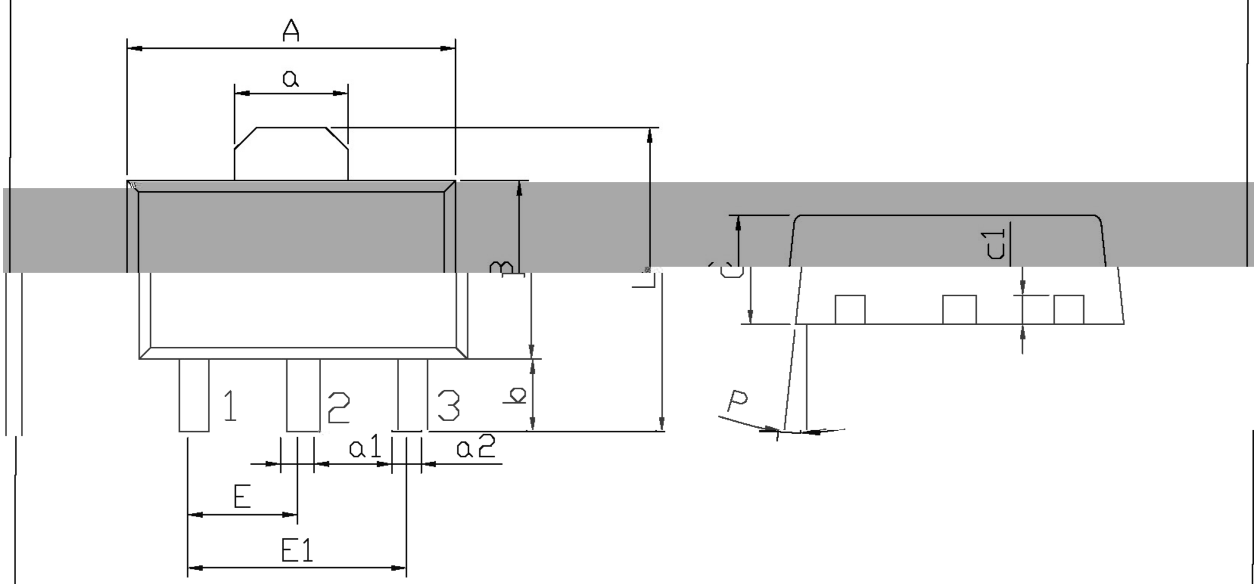






/ Package Dimensions

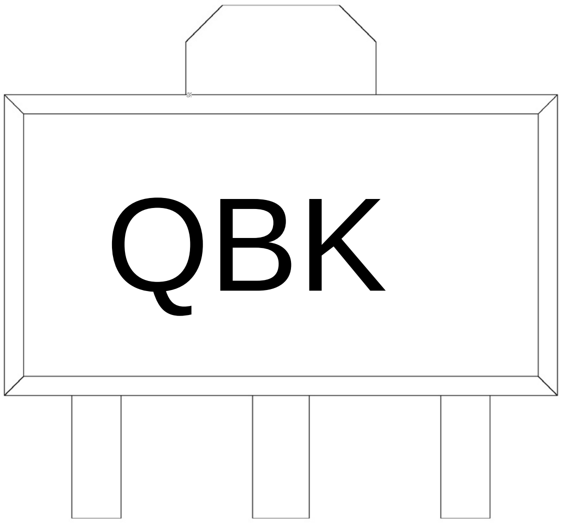
SOT-89 单位：mm



Symbol	Dimensions In Millmeters		Symbol	Dimensions In Millmeters	
	Min	Max		Min	Max
A	4.4	4.7	a1	0.36	0.56
B	2.35	2.65	a2	0.30	0.50
L	3.878	4.478	C	1.40	1.70
a	1.45	1.65	c1	0.35	0.50

[redacted]

/ Marking Instructions

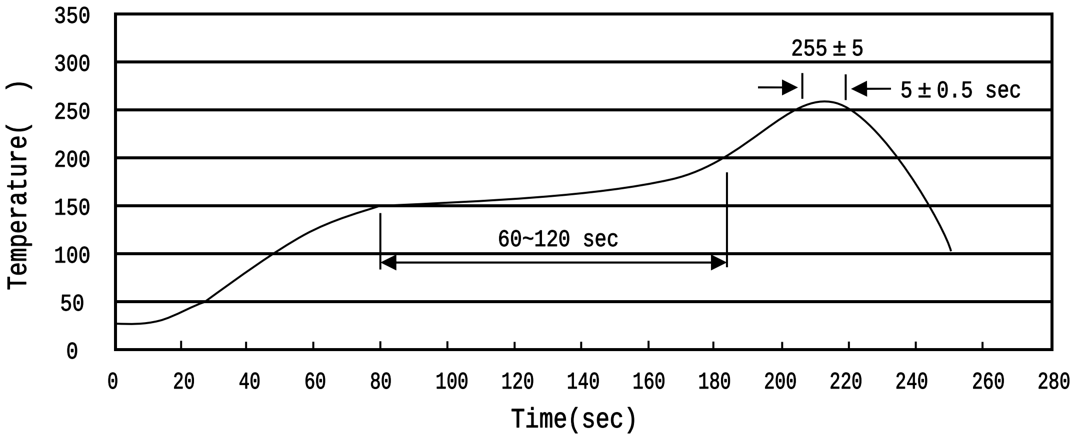


BK

Note:

Q:	Automobile halogen-free product Code
BK:	Product Type
**:	Lot No. Code, code change with Lot No

( ) /



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
SOT-89	1,000	7	7,000	6	42,000	7 ×12	180×120×180	390×385×205

/ Notices