

/ Descriptions

Silicon NPN transistor in a SOT-89 Plastic Package.

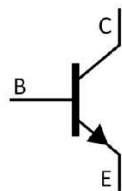
/ Features

Low saturation voltage, excellent h_{FE} linearity and high h_{FE} , Qualified to AEC-Q101 Standards for High Reliability, HF Product.

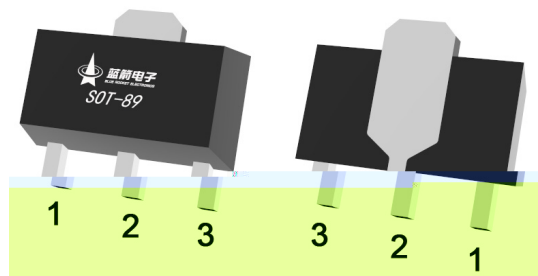
/ Applications

Output stage of 3 watts audio amplifier, voltage regulator, DC-DC converter and relay driver, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

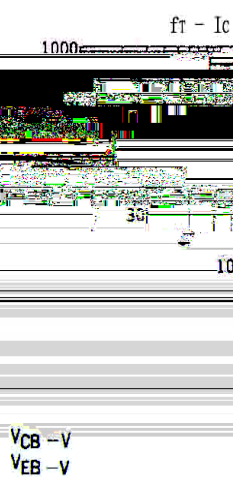
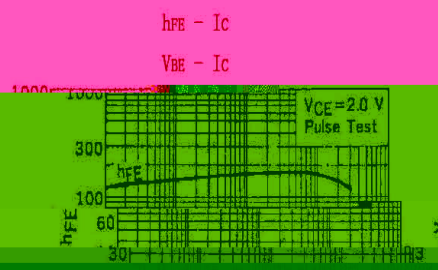
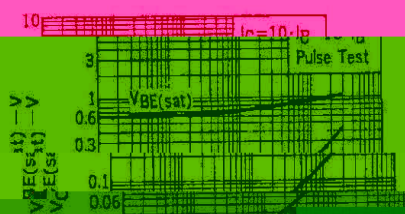
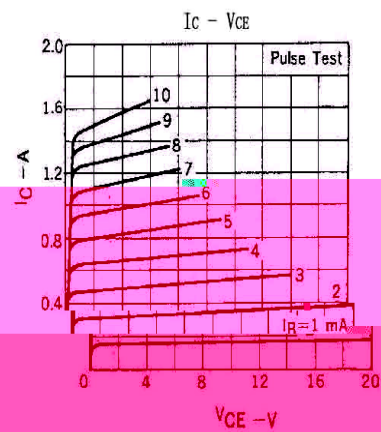
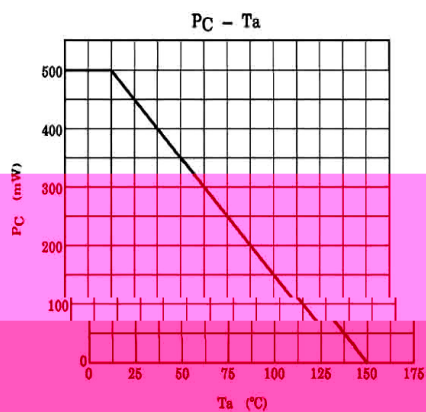
/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	R	Q	P	E
h_{FE} Range	60 120	100 200	160 320	200 400
Marking	Q82R * *	Q82Q * *	Q82P * *	Q82E * *

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	40	V
Collector to Emitter Voltage	V_{CEO}	30	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current-Continuous	I_C	3.0	A
Collector Power Dissipation	P_C	500	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=30V$ $I_E=0$			1.0	μA
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=3.0V$ $I_C=0$			1.0	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2.0V$ $I_C=1.0A$	60	160	400	
	$h_{FE(2)}$	$V_{CE}=2.0V$ $I_C=20mA$	30	150		
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2.0A$ $I_B=0.2A$		0.3	0.5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=2.0A$ $I_B=0.2A$		1.0	2.0	V
Transition Frequency	f_T	$V_{CE}=5.0V$ $I_C=0.1A$		90		MHz
		$V_{CB}=10V$ $I_E=0$		45		pF

/ Electrical Characteristic Curve

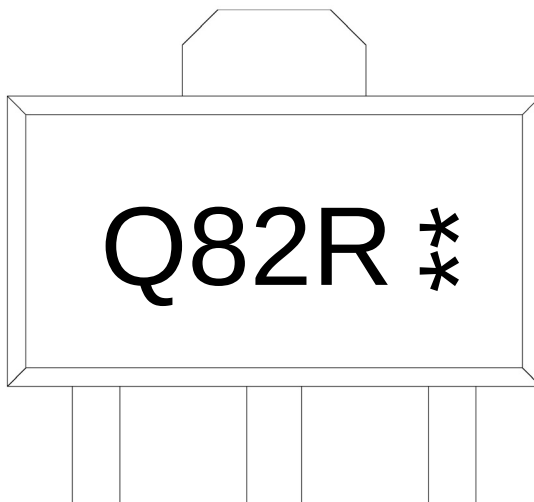


$C_{ib} - V_{CB}$
 $C_{ob} - V_{EB}$

單位: mm



/ Marking Instructions



Q

Note:

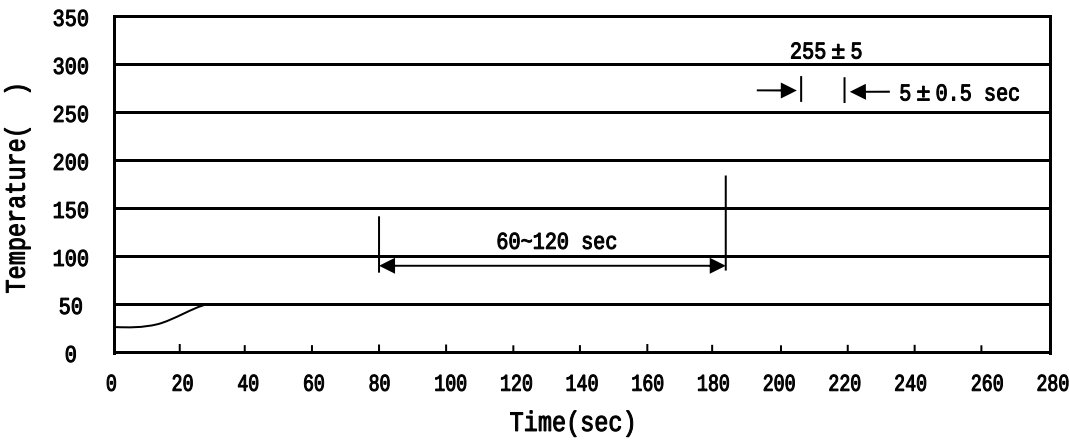
Q: Automobile halogen-free product Code

82: Product Type

R 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 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	10	10,000	4	40,000	7 ×12	210×205×205	445×435×230

/ Notices