

BFU580Q NPN TRANSISTOR MICROWAVE LOW NOISE AMPLIFIER NPN SILICON EPITAXIAL TRANSISTOR

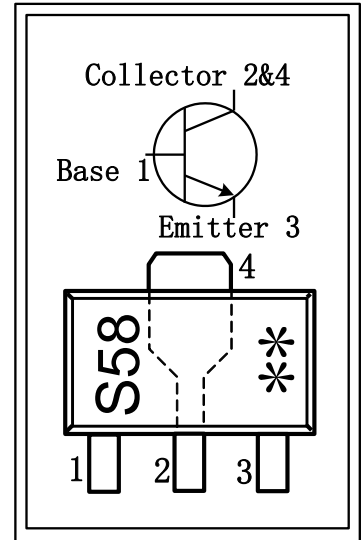
1. 简述:

本芯片采用硅外延工艺制造,具有大功率增益放大、宽带以及低噪声、低漏电流、小结电容特性,较大的动态范围,理想的电流线性;

主要应用于超高频微波、高频宽带低噪声放大器中,如 CATV 视频放大器、无线收发模块、各类远距离遥控器、安防报警器、模拟数字无绳电话等产品中,适合中功率高频信号放大;

集电极-发射极击穿电压: $BV_{CEO}=12V$, 最大集电极电流: $I_{CM}=100mA$, 集电极耗散功率: $P_C=1000mW$, 特征频率: $f_T=8.5GHz$;

封装形式: SOT89, 本体印字(Marking): S58.



2. 极限参数 ($T_{amb}=25^{\circ}C$):

| 参数名称 | 符号 | 额定值 | 单位 |
|-----------|-----------|------------|-------------|
| 集电极-基极电压 | V_{CBO} | 25 | V |
| 集电极-发射极电压 | V_{CEO} | 12 | V |
| 发射极-基极电压 | V_{EBO} | 3 | V |
| 集电极电流 | I_{CM} | 100 | mA |
| 耗散功率 | P_T | 1000 | mW |
| 最高结温 | T_J | -40 ~ 150 | $^{\circ}C$ |
| 储存温度 | T_{stg} | -65 ~ +150 | $^{\circ}C$ |

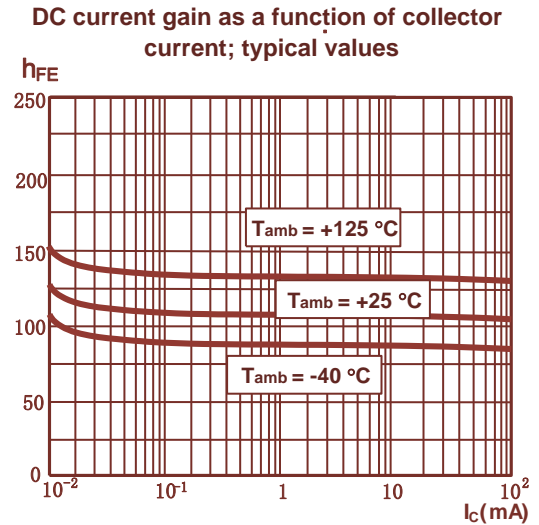
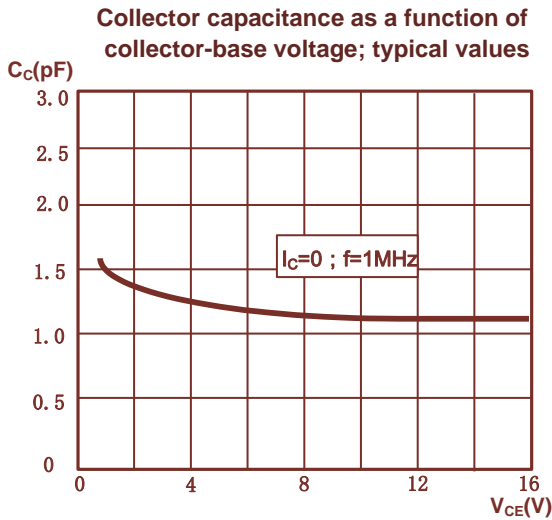
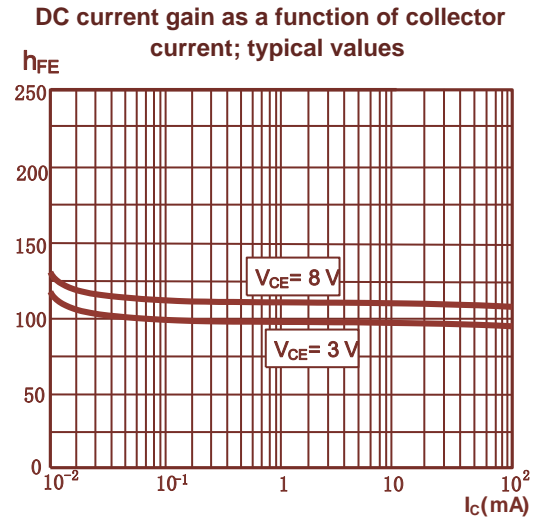
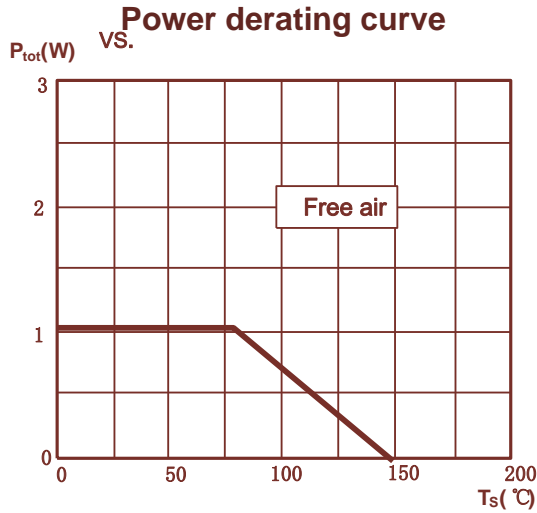
3. 电参数及规格 ($T_{amb}=25^{\circ}C$):

| 参数名称 | 符号 | 测试条件 | 最小值 | 典型值 | 最大值 | 单位 |
|-------------|--------------|----------------------------------|------|------|------|---------|
| 集电极-基极击穿电压 | BV_{CBO} | open emitter | 25 | | | V |
| 集电极-发射极击穿电压 | BV_{CEO} | open base | 12 | | | V |
| 发射极-基极击穿电压 | BV_{EBO} | open collector | 3 | | | V |
| 集电极电流 | I_C | | | 100 | | mA |
| 集电极截止电流 | I_{CBO} | $V_{CB}=6V, I_E=0$ | - | - | 0.05 | μA |
| 直流电流放大系数 | h_{FE} | $V_{CE}=8V, I_C=30mA$ | 60 | 95 | 130 | |
| 特征频率 | f_T | $V_{CE}=8V, I_C=30mA, f=900MHz$ | 10.0 | 10.5 | - | GHz |
| 反馈电容 | C_{re} | $I_C=I_C=0, V_{CB}=8V, f=1MHz$ | - | 1.2 | - | pF |
| 集电极电容 | C_C | $I_E=I_E=0, V_{CB}=8V, f=1MHz$ | - | 1.8 | - | pF |
| 发射极电容 | C_e | $I_C=I_C=0, V_{EB}=0.5V, f=1MHz$ | - | 3.0 | - | pF |
| 插入功率增益 | $ S_{21} ^2$ | $I_C=30mA, V_{CE}=8V, f=433MHz$ | 18.0 | 18.5 | - | dB |
| | | $I_C=30mA, V_{CE}=8V, f=900MHz$ | 13.5 | 14 | - | |
| | | $I_C=30mA, V_{CE}=8V, f=1800MHz$ | 8.0 | 8.5 | - | |
| 最大单边功率增益 | G_{UM} | $I_C=30mA, V_{CE}=8V, f=433MHz$ | 19.5 | 20 | - | dB |
| | | $I_C=30mA, V_{CE}=8V, f=900MHz$ | 13.5 | 14 | - | |
| | | $I_C=30mA, V_{CE}=8V, f=1.8GHz$ | 8.0 | 8.5 | - | |

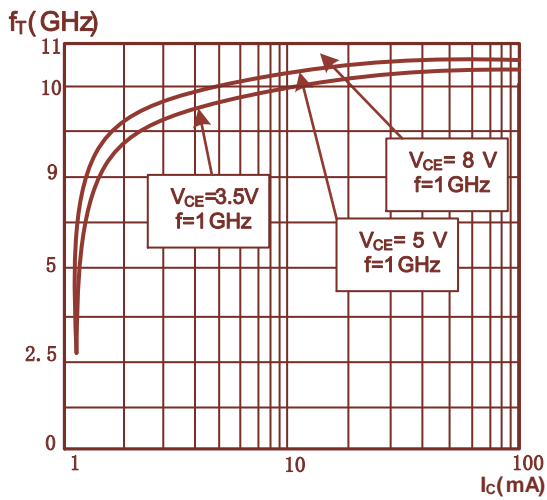
$$\text{其中: } G_{UM} = 10 \log \frac{|S_{21}|^2}{(1 - S_{11})^2 (1 - S_{22})^2} \text{ dB}$$

4. 典型特征曲线:

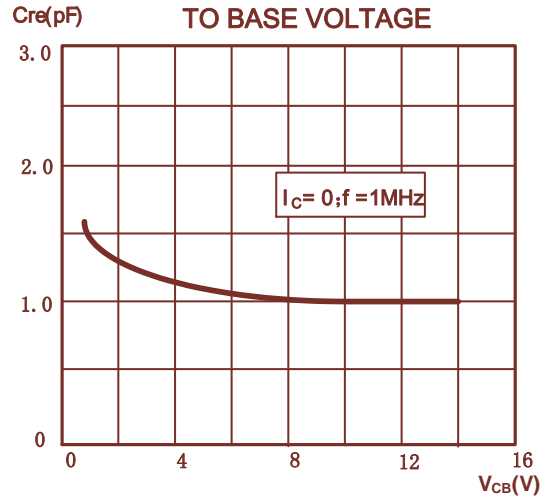
TYPICAL CHARACTERISTICS
($T_A=25^\circ\text{C}$, unless otherwise specified)



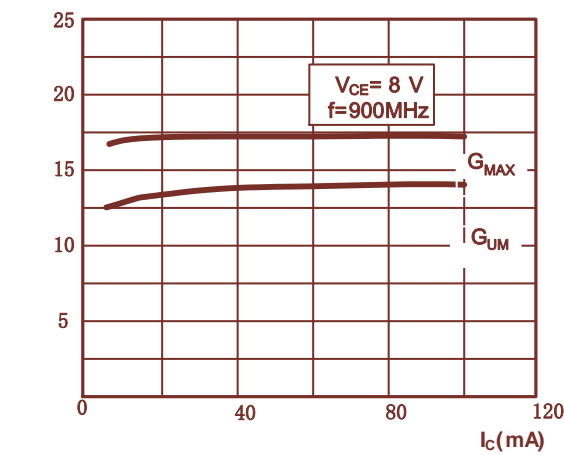
Frequency collector vs.current



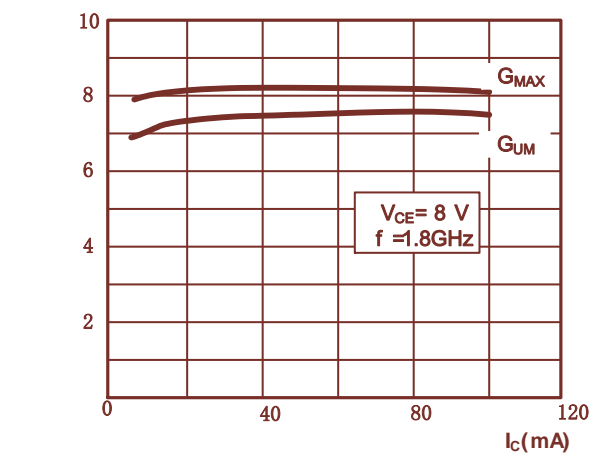
REVERSE TRANSFER CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



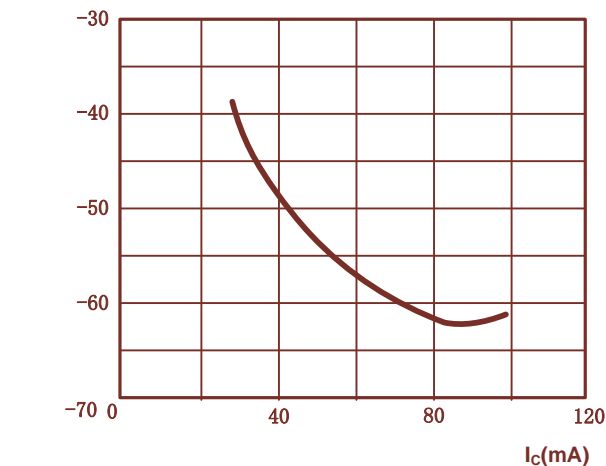
GAIN vs. FUNCTION of COLLECTOR CURRENT



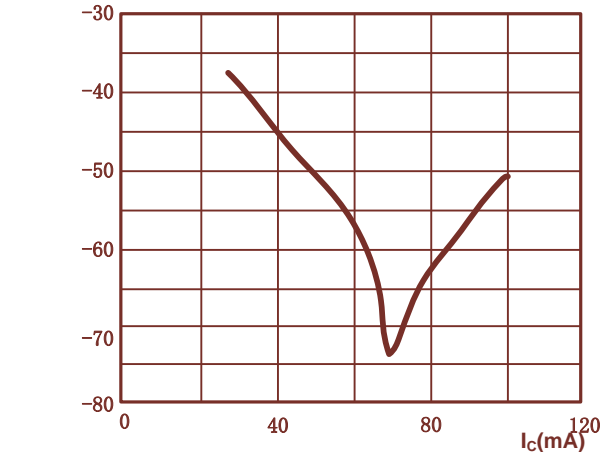
GAIN vs. FUNCTION of COLLECTOR CURRENT



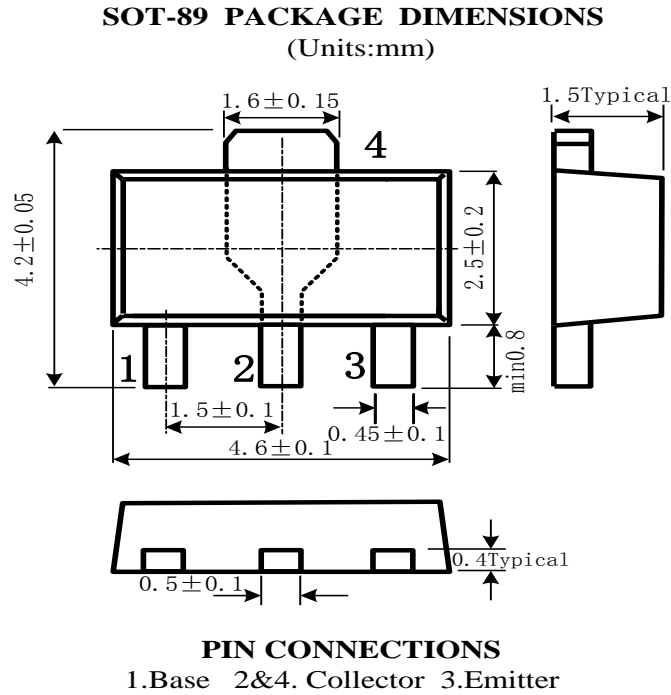
INTERMODULATION DISTORTION vs. FUNCTION of COLLECTOR CURRENT



SECOND ORDER INTERMODULATION DISTORTION vs. FUNCTION of COLLECTOR CURRENT



5. 封装尺寸示意图:



6. 包装信息:

PACKAGE INFORMATION

| 封装形式 Package | 数量/盘 Shipping | 盘/中盒 Inner Box | 中盒/箱 Carton |
|--------------|-------------------|----------------|-------------|
| SOT-89 | 1000pcs/Tape&Reel | 4 Tape&Reel | 8 Inner Box |