



**THE DATASHEET OF
2SC2839-E**



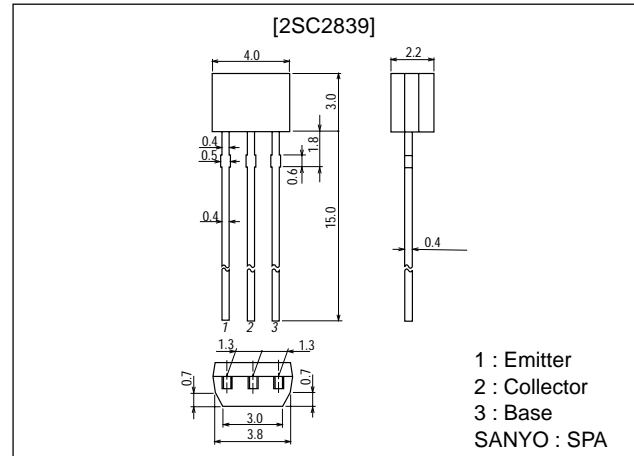
**2SC2839****HF Amplifier Applications****Features**

- Ultrasmall package enabling compactness and slimness of sets.
- High f_T and small c_{re} ($f_T=320\text{MHz}$ typ, $c_{re}=0.95\text{pF}$ typ).

Package Dimensions

unit:mm

2033A

**Specifications****Absolute Maximum Ratings** at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------|-------------|------------------|
| Collector-to-Base Voltage | V_{CBO} | | 30 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | 20 | V |
| Emitter-to-Base Voltage | V_{EBO} | | 5 | V |
| Collector Current | I_C | | 30 | mA |
| Collector Dissipation | P_C | | 150 | mW |
| Junction Temperature | T_J | | 125 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +125 | $^\circ\text{C}$ |

Electrical Characteristics at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---------------------------------|--------------|--|---------|------|------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=10\text{V}, I_E=0$ | | | 0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=4\text{V}, I_C=0$ | | | 0.1 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=6\text{V}, I_C=1\text{mA}$ | 60* | | 320* | |
| Gain-Bandwidth Product | f_T | $V_{CE}=6\text{V}, I_C=1\text{mA}$ | 200 | 320 | | MHz |
| Reverse Transfer Capacitance | C_{re} | $V_{CB}=6\text{V}, f=1\text{MHz}$ | 0.7 | 0.95 | 1.3 | pF |
| Base-to-Collector Time Constant | r_{bb}/C_C | $V_{CE}=6\text{V}, I_C=1\text{mA}, f=31.9\text{MHz}$ | | 12 | 20 | ps |
| Noise Figure | NF | $V_{CE}=6\text{V}, I_C=1\text{mA}, f=100\text{MHz}$ | | 3.0 | | dB |
| Power Gain | PG | $V_{CE}=6\text{V}, I_C=1\text{mA}, f=100\text{MHz}$ | | 25 | | dB |

* : The 2SC2839 are classified as follows by h_{FE} at 1mA :

| Rank | D | E | F |
|----------|-----------|------------|------------|
| h_{FE} | 60 to 120 | 100 to 200 | 160 to 320 |

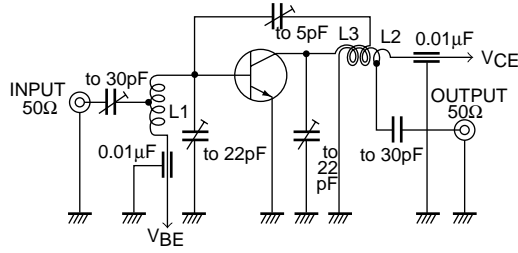
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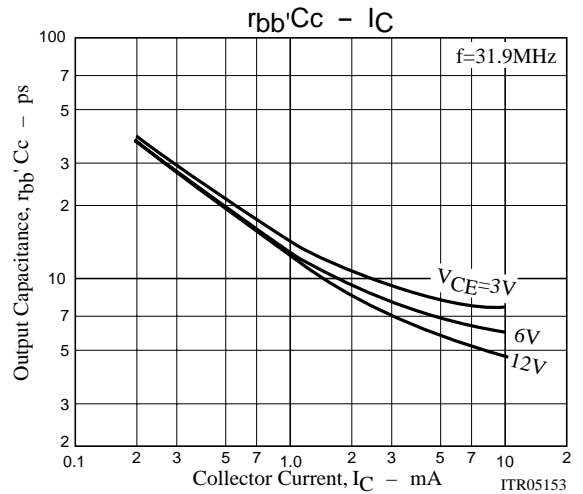
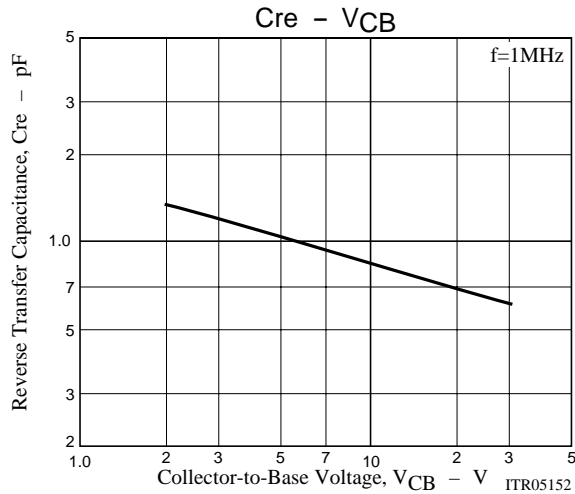
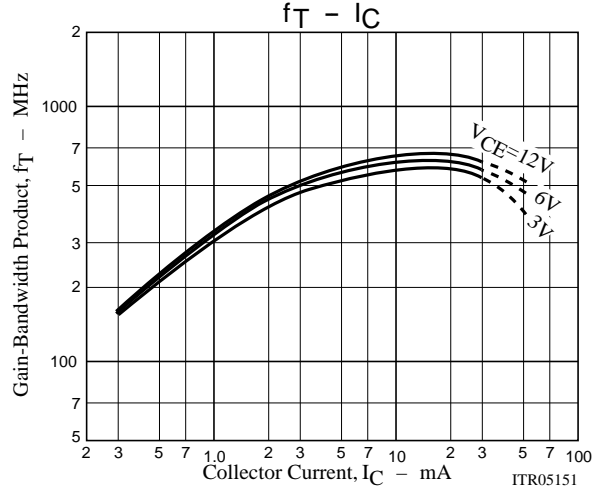
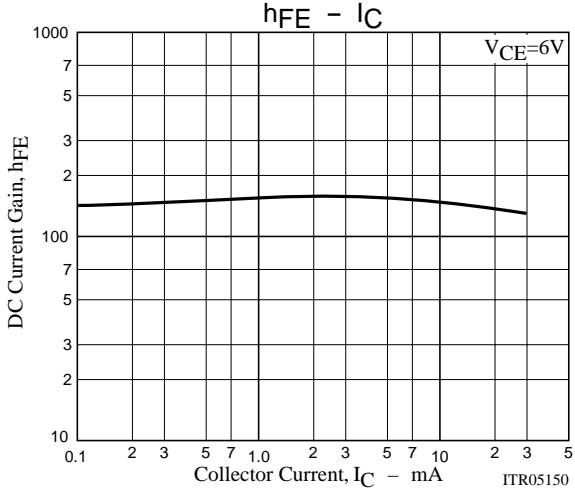
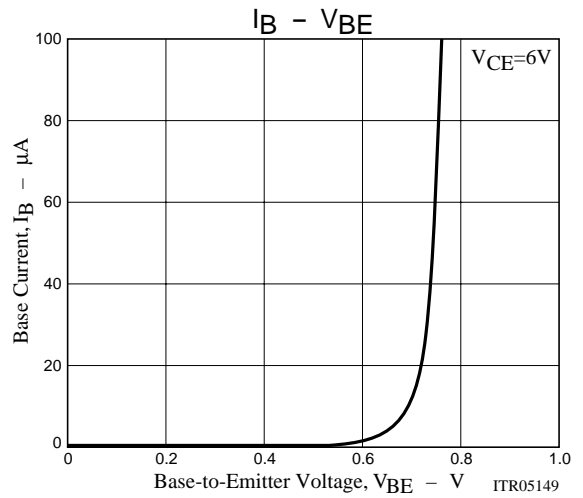
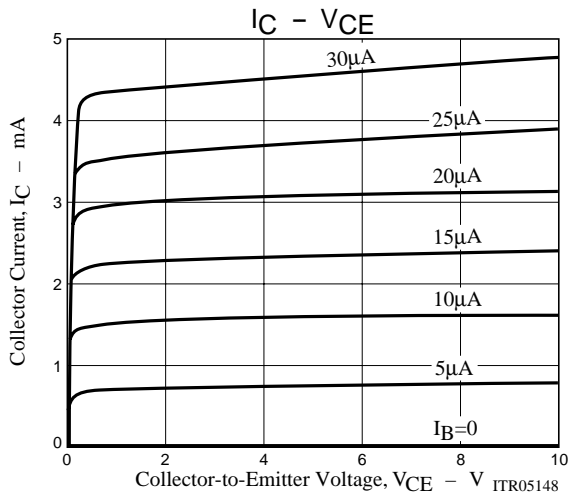
NF, PG Test Circuit



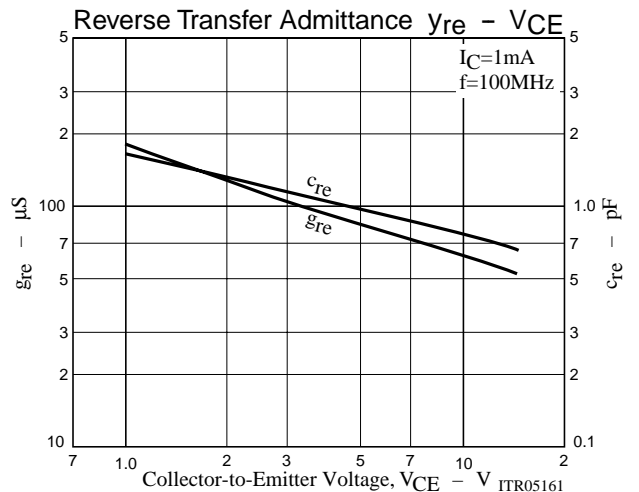
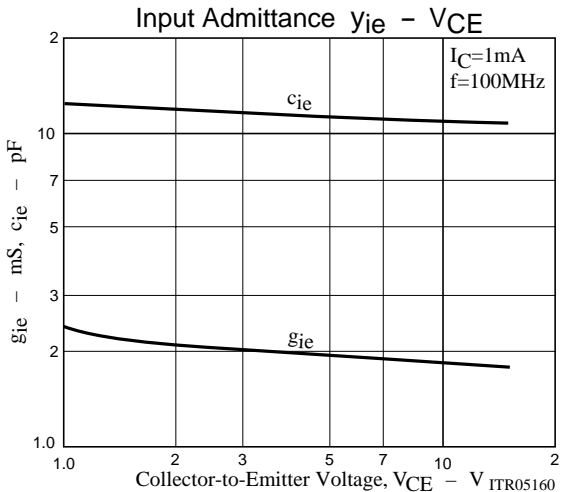
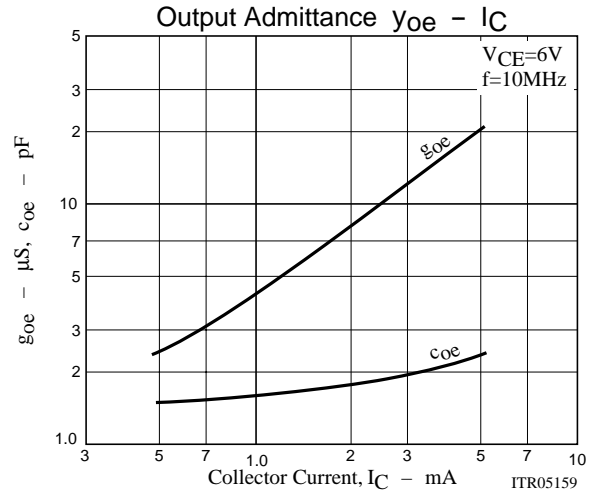
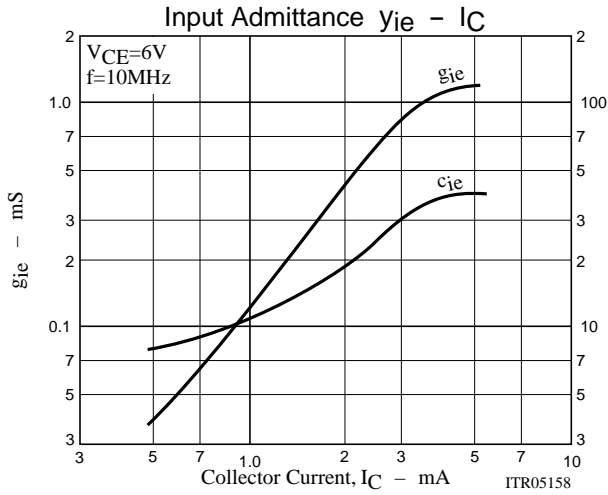
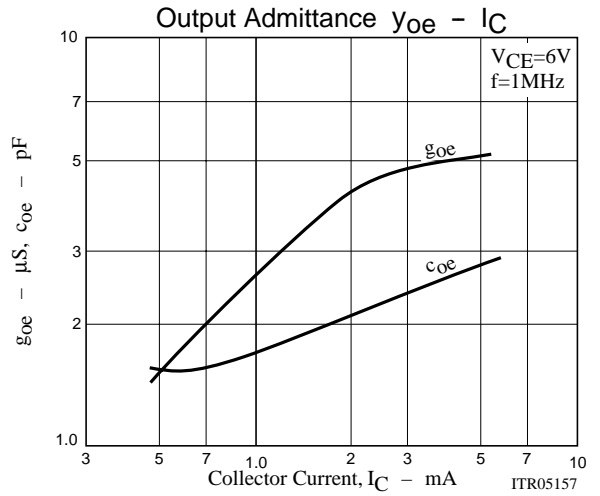
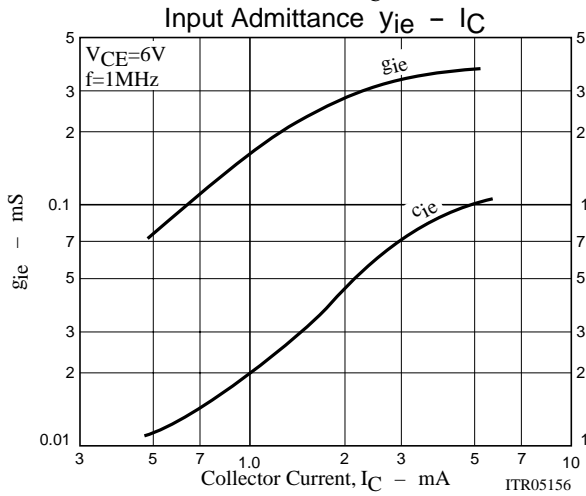
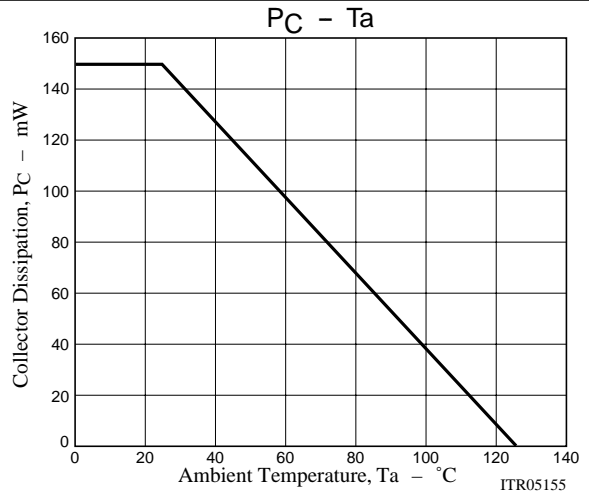
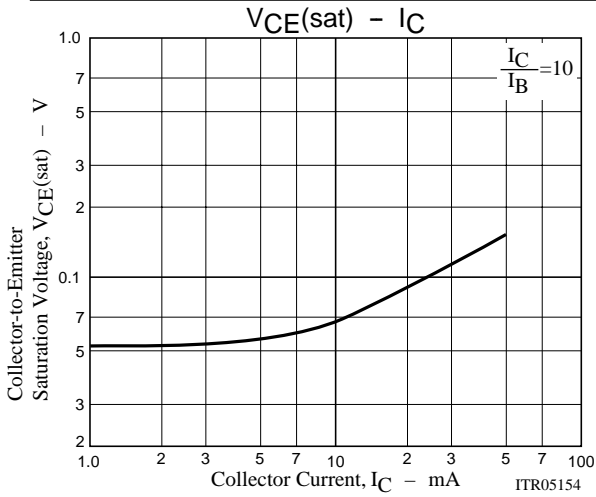
L1 : 1mmø plated wire, 10mmø 5T tap, 2T from V_{BE} side.

L2 : 1mmø plated wire, 10mmø 7T tap, 1T from V_{CE} side.

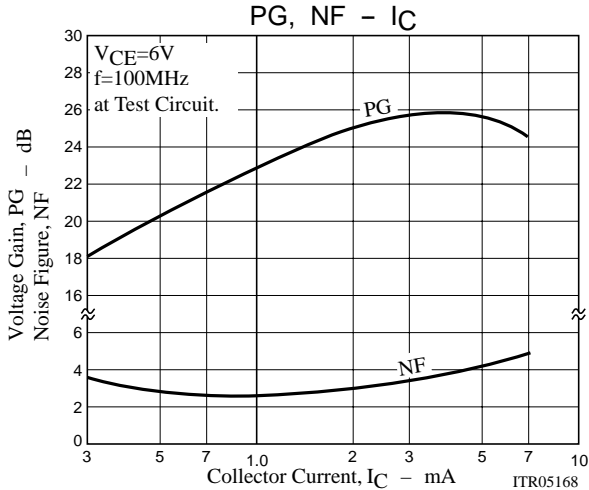
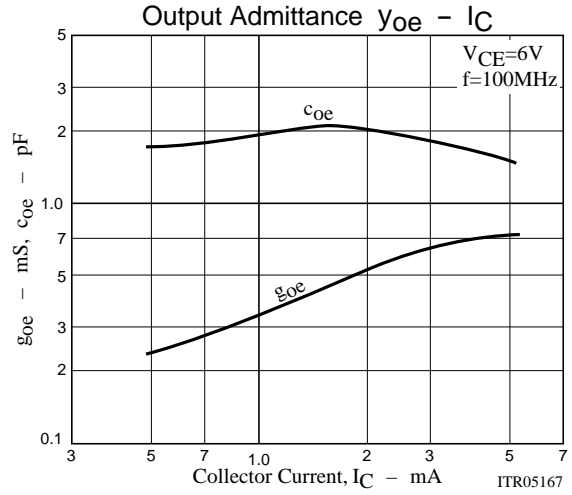
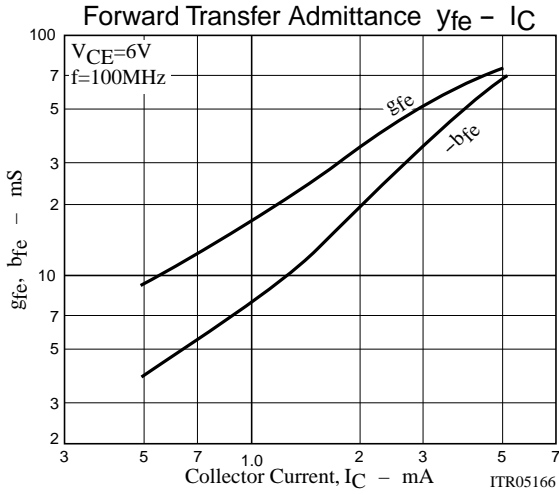
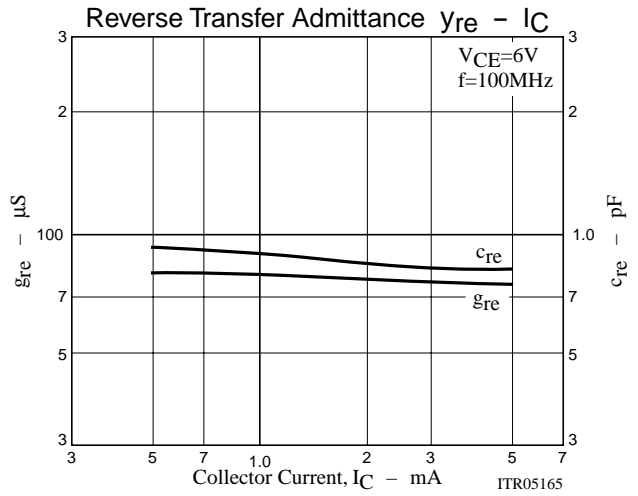
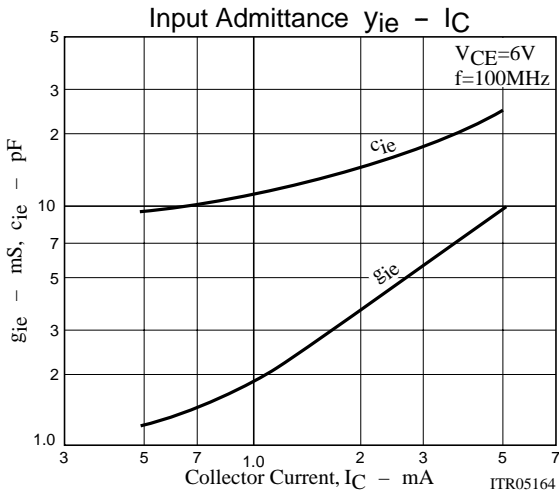
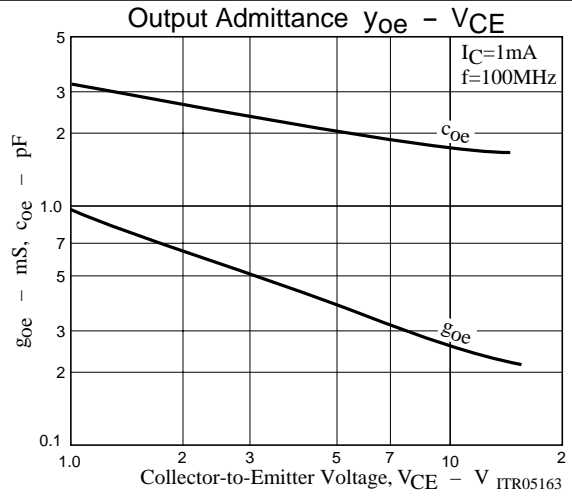
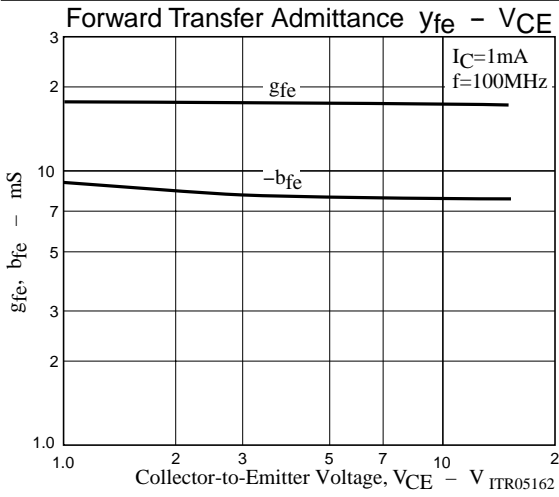
L3 : 1mmø enameled wire, 10mmø 3T .



2SC2839



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