

**SOT-23 Plastic-Encapsulate Transistors****2SC5345** TRANSISTOR (NPN)**FEATURES**

- RF amplifier
- High current transition frequency $f_T=550\text{MHz}$ (Typ.),
[$V_{CE}=6\text{V}$, $I_E=-1\text{mA}$]
- Low output capacitance :
 $C_{ob}=1.4\text{pF}$ (Typ.) [$V_{CB}=6\text{V}$, $I_E=0$]
- Low base time constant and high gain
- Excellent noise response

SOT-23

1. BASE
2. EMITTER
3. COLLECTOR



Marking: 5345

MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise noted)

| Symbol | Parameter | Value | Units |
|-----------|-----------------------------|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 30 | V |
| V_{CEO} | Collector-Emitter Voltage | 20 | V |
| V_{EBO} | Emitter-Base Voltage | 4 | V |
| I_C | Collector Current | 20 | mA |
| P_C | Collector Power dissipation | 300 | mW |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | -55-150 | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|--|-----|-----|-----|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=10\mu\text{A}$, $I_E=0$ | 30 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=5\text{mA}$, $I_B=0$ | 20 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=10\mu\text{A}$, $I_C=0$ | 4 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=30\text{V}$, $I_E=0$ | | | 0.5 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=4\text{V}$, $I_C=0$ | | | 0.5 | μA |
| DC current gain | h_{FE} | $V_{CE}=6\text{V}$, $I_C=1\text{mA}$ | 40 | | 240 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=10\text{mA}$, $I_B=1\text{mA}$ | | | 0.3 | V |
| Transition frequency | f_T | $V_{CE}=6\text{V}$, $I_C=1\text{mA}$ | | 550 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB}=6\text{V}$, $I_E=0$, $f=1\text{MHz}$ | | 1.4 | | pF |

CLASSIFICATION OF h_{FE}

| Rank | R | O | Y |
|-------|-------|--------|---------|
| Range | 40-80 | 70-140 | 120-240 |

Typical characteristics

2SC5345

Fig. 1 $P_C - T_a$

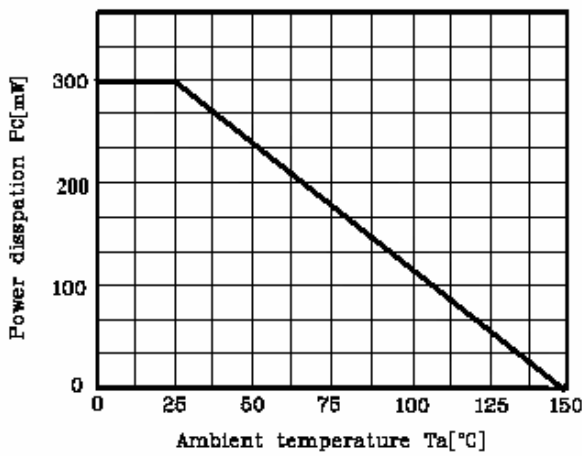


Fig. 2 $I_C - V_{CE}$

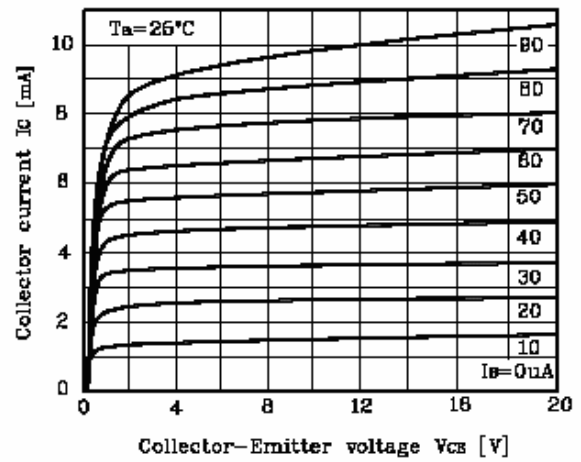


Fig. 3 $h_{FE} - I_C$

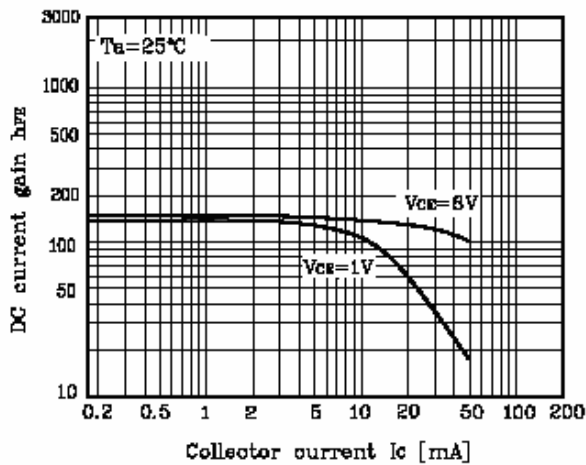


Fig. 4 $f_T - I_E$

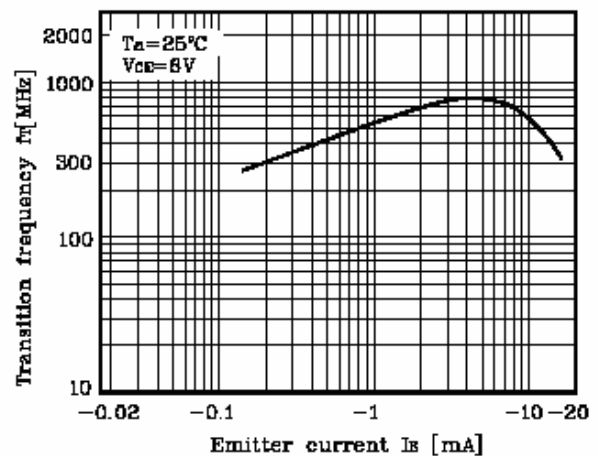


Fig. 5 $C_{ob} - V_{CB}, C_{ib} - V_{EB}$

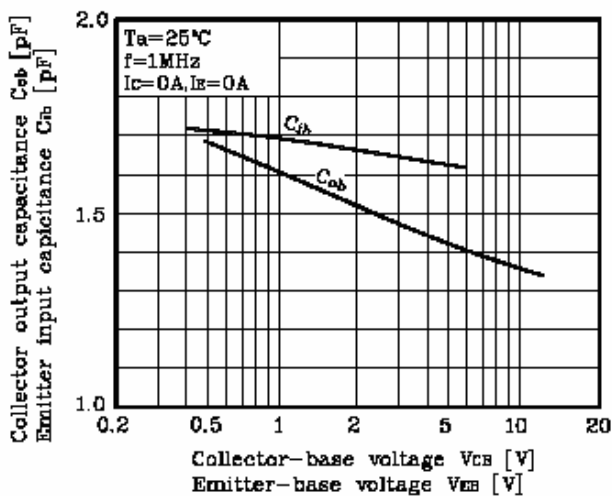


Fig. 6 $Y_{ie} - I_C$

