

RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## FEATURE

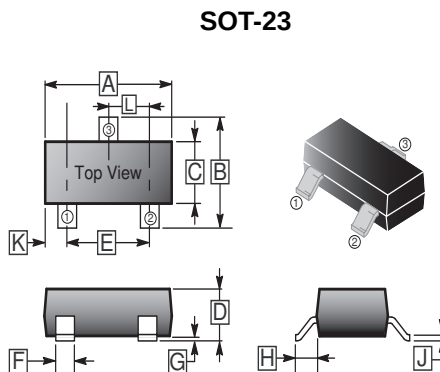
- RF amplifier
- High current transition frequency  $f_T=550\text{MHz(Typ.)}$ ,  
[ $V_{CE}=6\text{V}$ ,  $I_E=-1\text{mA}$ ]
- Low output capacitance :  $C_{ob}=1.4\text{pF(Typ.)}$  [ $V_{CB}=6\text{V}$ ,  $I_E=0$ ]
- Low base time constant and high gain
- Excellent noise response

## MARKING :

**5345**

## CLASSIFICATION OF $h_{FE}$

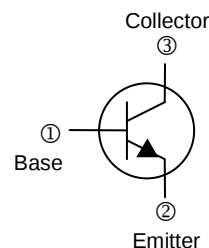
| Product-Rank | 2SC5345-R | 2SC5345-O | 2SC5345-Y |
|--------------|-----------|-----------|-----------|
| Range        | 40~80     | 70~140    | 120~240   |



| REF. | Millimeter |      | REF. | Millimeter |       |
|------|------------|------|------|------------|-------|
|      | Min.       | Max. |      | Min.       | Max.  |
| A    | 2.80       | 3.04 | G    | 0.09       | 0.18  |
| B    | 2.10       | 2.55 | H    | 0.45       | 0.60  |
| C    | 1.20       | 1.40 | J    | 0.08       | 0.177 |
| D    | 0.89       | 1.15 | K    | 0.6 REF.   |       |
| E    | 1.78       | 2.04 | L    | 0.89       | 1.02  |
| F    | 0.30       | 0.50 |      |            |       |

## PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---------|-----|-------------|
| SOT-23  | 3K  | 7 inch      |



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

| Parameter                      | Symbol         | Ratings      | Unit             |
|--------------------------------|----------------|--------------|------------------|
| Collector to Base Voltage      | $V_{CBO}$      | 30           | V                |
| Collector to Emitter Voltage   | $V_{CEO}$      | 20           | V                |
| Emitter to Base Voltage        | $V_{EBO}$      | 4            | V                |
| Collector Current - Continuous | $I_C$          | 20           | mA               |
| Collector Power Dissipation    | $P_C$          | 300          | mW               |
| Junction, Storage Temperature  | $T_J, T_{STG}$ | 150, -55~150 | $^\circ\text{C}$ |

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

| Parameter                               | Symbol        | Min. | Typ. | Max. | Unit          | Test Conditions                                |
|-----------------------------------------|---------------|------|------|------|---------------|------------------------------------------------|
| Collector to Base Breakdown Voltage     | $V_{(BR)CBO}$ | 30   | -    | -    | V             | $I_C=10\mu\text{A}$ , $I_E=0$                  |
| Collector to Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | 20   | -    | -    | V             | $I_C=5\text{mA}$ , $I_B=0$                     |
| Emitter to Base Breakdown Voltage       | $V_{(BR)EBO}$ | 4    | -    | -    | V             | $I_E=10\mu\text{A}$ , $I_C=0$                  |
| Collector Cut-Off Current               | $I_{CBO}$     | -    | -    | 0.5  | $\mu\text{A}$ | $V_{CB}=30\text{V}$ , $I_E=0$                  |
| Emitter Cut-Off Current                 | $I_{EBO}$     | -    | -    | 0.5  | $\mu\text{A}$ | $V_{EB}=4\text{V}$ , $I_C=0$                   |
| DC Current Gain                         | $h_{FE}$      | 40   | -    | 240  |               | $V_{CE}=6\text{V}$ , $I_C=1\text{mA}$          |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ | -    | -    | 0.3  | V             | $I_C=10\text{mA}$ , $I_B=1\text{mA}$           |
| Transition Frequency                    | $f_T$         | -    | 550  | -    | MHz           | $V_{CE}=6\text{V}$ , $I_C=1\text{mA}$          |
| Collector output capacitance            | $C_{ob}$      | -    | 1.4  | -    | pF            | $V_{CB}=6\text{V}$ , $I_E=0$ , $f=1\text{MHz}$ |

## CHARACTERISTIC CURVES

Fig. 1  $P_C - T_a$

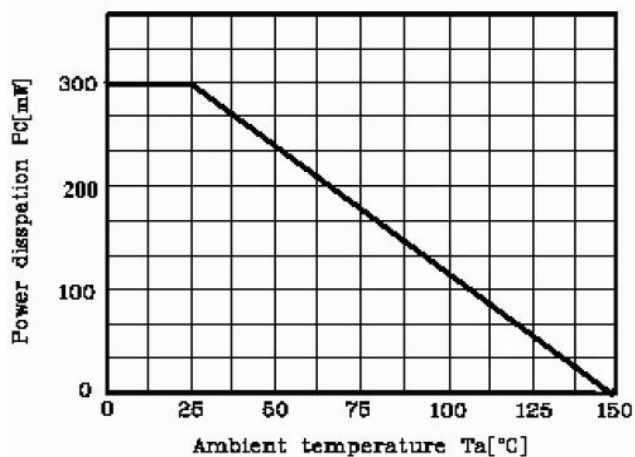


Fig. 2  $I_C - V_{CE}$

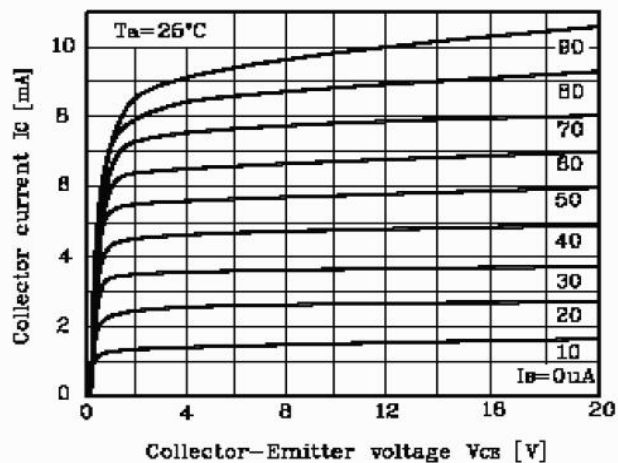


Fig. 3  $h_{FE} - I_C$

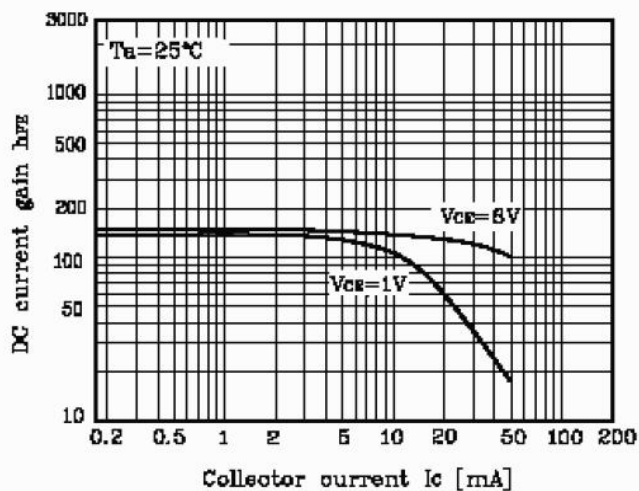


Fig. 4  $f_T - I_E$

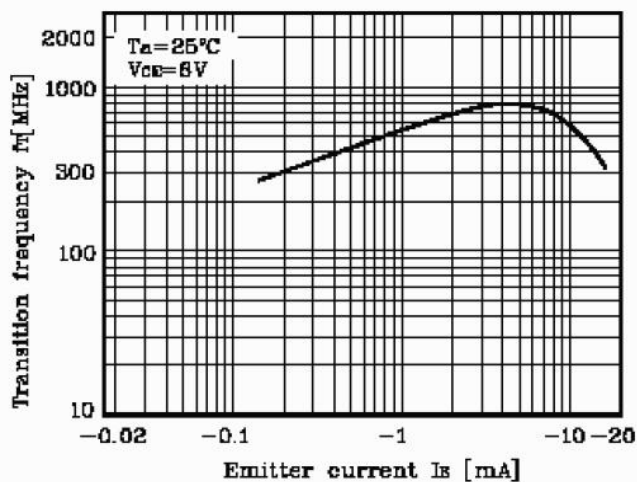


Fig. 5  $C_{ob} - V_{CB}$ ,  $C_{ib} - V_{EB}$

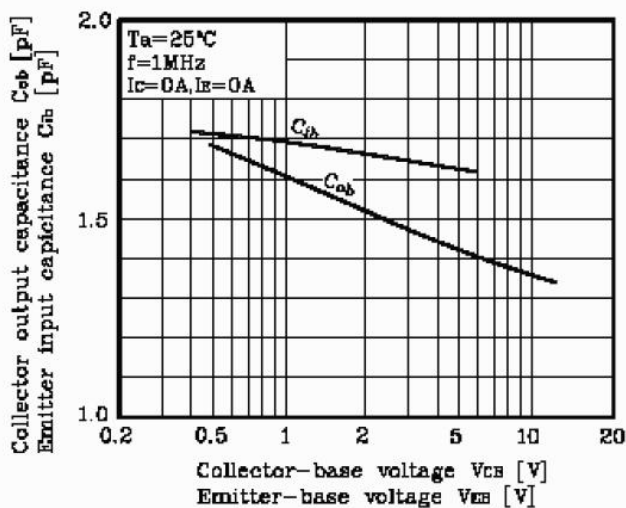


Fig. 6  $Y_{ie} - I_C$

