Elektronische Bauelemente

# 2SC4617

**0.15A , 60V**

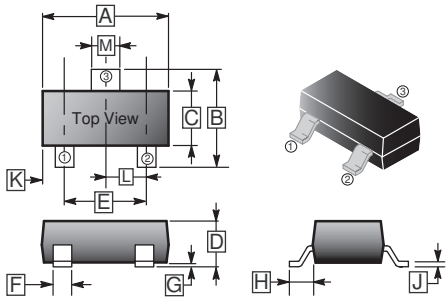
**NPN Silicon General Purpose Transistor**

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

## FEATURES

- Low $C_{ob}$. $C_{ob}$=2.0pF
- Complement of 2SA1774

**SOT-523**



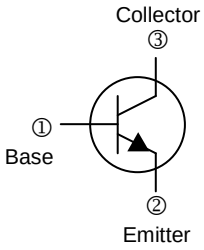

| REF. | Millimeter | | REF. | Millimeter | |
|---|---|---|---|---|---|
| | Min. | Max. | | Min. | Max. |
| A | 1.5 | 1.7 | G | - | 0.1 |
| B | 1.45 | 1.75 | H | 0.55 REF. | |
| C | 0.75 | 0.85 | J | 0.1 | 0.2 |
| D | 0.7 | 0.9 | K | - | |
| E | 0.9 | 1.1 | L | 0.5 TYP. | |
| F | 0.15 | 0.25 | M | 0.25 | 0.325 |

## CLASSIFICATION OF $h_{FE}$

| Product-Rank | 2SC4617-Q | 2SC4617-R | 2SC4617-S |
|---|---|---|---|
| Range | 120~270 | 180~390 | 270~560 |
| Marking | BQ | BR | BS |

## PACKAGE INFORMATION

| Package | MPQ | LeaderSize |
|---|---|---|
| SOT-523 | 3K | 7' inch |




## ABSOLUTE MAXIMUM RATINGS ($T_A$ = 25℃ unless otherwise specified)

| Parameter | Symbol | Ratings | Unit |
|---|---|---|---|
| Collector to Base Voltage | $V_{CBO}$ | 60 | V |
| Collector to Emitter Voltage | $V_{CEO}$ | 50 | V |
| Emitter to Base Voltage | $V_{EBO}$ | 7 | V |
| Collector Currrent | $I_C$ | 150 | mA |
| Collector Power Dissipation | $P_C$ | 150 | mW |
| Junction & Storage Temperature | $T_J$, $T_{STG}$ | 150, -55 ~ 150 | ℃ |

## ELECTRICAL CHARACTERISTICS ($T_A$ = 25℃ unless otherwise specified)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|---|---|---|---|---|---|---|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | 60 | - | - | V | $I_C$=50μA, $I_E$=0 |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | 50 | - | - | V | $I_C$=1mA, $I_B$=0 |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | 7 | - | - | V | $I_E$=50μA, $I_C$=0 |
| Collector cut-off current | $I_{CBO}$ | - | - | 0.1 | μA | $V_{CB}$=60V, $I_E$=0 |
| Emitter cut-off current | $I_{EBO}$ | - | - | 0.1 | μA | $V_{EB}$= 7V, $I_C$=0 |
| Collector-emitter saturation voltage * | $V_{CE(sat)}$ | - | - | 0.4 | V | $I_C$=50mA, $I_B$=5mA |
| DC current gain | $h_{FE}$ | 120 | - | 560 | | $V_{CE}$=6V, $I_C$=1mA |
| Transition frequency | $f_T$ | - | 180 | - | MHz | $V_{CE}$=12V, $I_E$=2mA, f=100MHz |
| Collector output capacitance | $C_{ob}$ | - | - | 3.5 | pF | $V_{CB}$=12V, $I_E$=0, f=1MHz |

***** Pulse Test :Pulse Width ≤300us,D.C ≤ 2%

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## CHARACTERISTIC CURVES

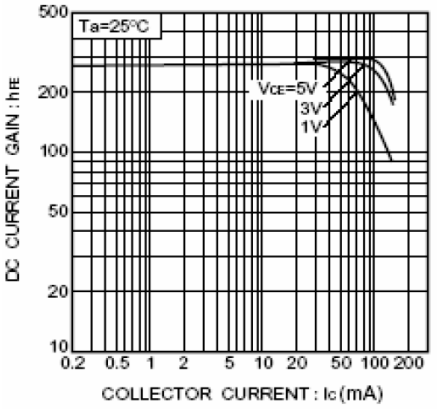


Fig.1 DC current gain vs. collector current

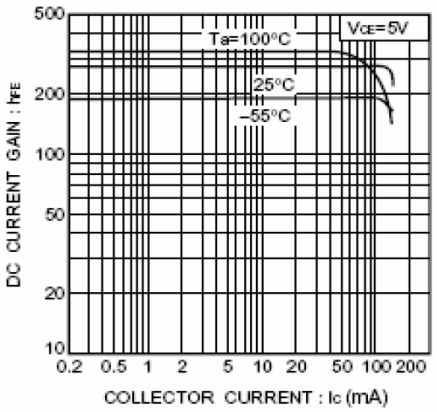


Fig.2 DC current gain vs. collector current

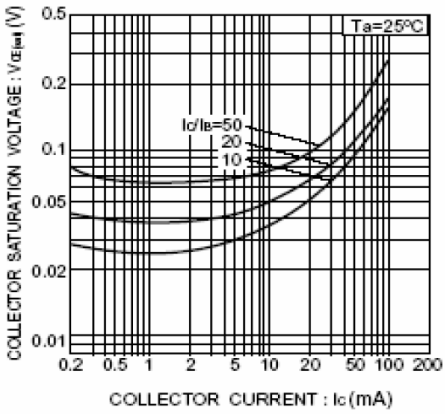


Fig. 3 Collector-emitter saturation voltage vs. collector current

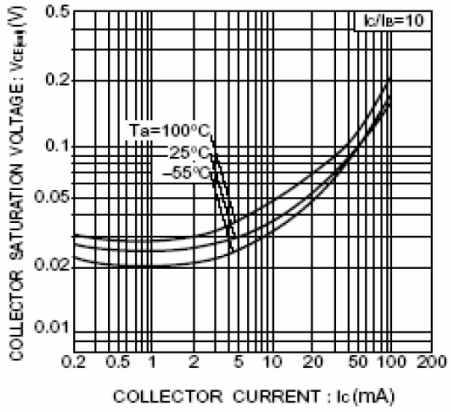


Fig.4 Collector-emitter saturation voltage vs. collector current

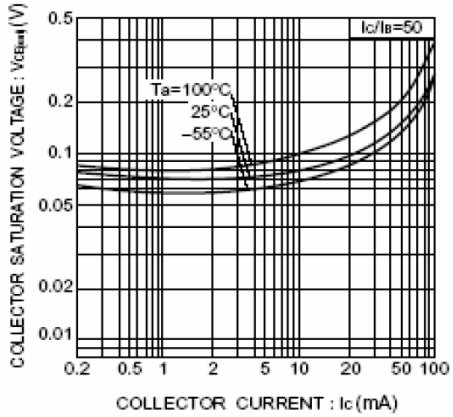


Fig.5 Collector-emitter saturation voltage vs. collector current

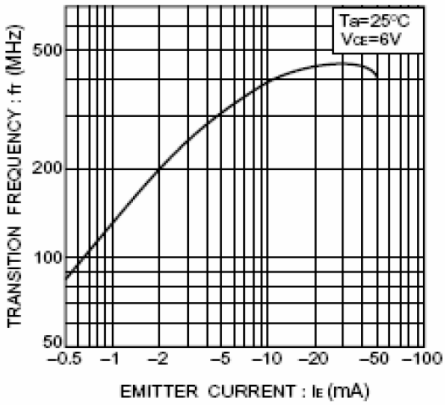


Fig.6 Gain bandwidth product vs. emitter current

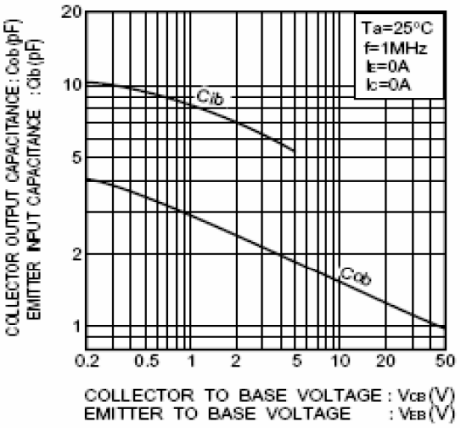


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

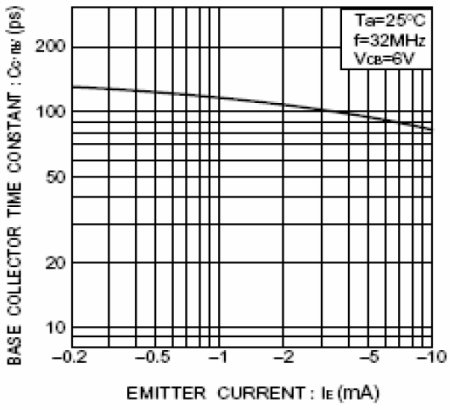


Fig.8 Base-collector time constant vs. emitter current