

### FEATURES

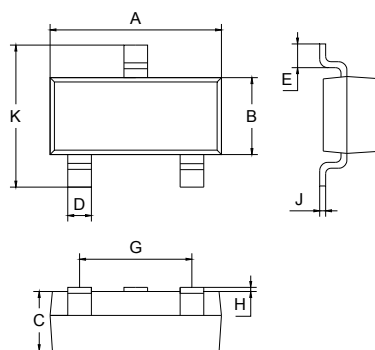
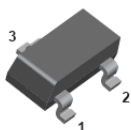
- Low  $C_{ob}$ ,  $C_{ob}=2.0pF$
- Complementary to 2SA1037

### APPLICATIONS

- NPN Silicon Epitaxial Planar Transistor

### ORDERING INFORMATION

| Type No. | Marking  | Package Code |
|----------|----------|--------------|
| 2SC2412  | BQ/BR/BS | SOT-23       |



| SOT-23               |             |      |
|----------------------|-------------|------|
| Dim                  | Min         | Max  |
| A                    | 2.70        | 3.10 |
| B                    | 1.10        | 1.50 |
| C                    | 1.0 Typical |      |
| D                    | 0.4 Typical |      |
| E                    | 0.35        | 0.48 |
| G                    | 1.80        | 2.00 |
| H                    | 0.02        | 0.1  |
| J                    | 0.1 Typical |      |
| K                    | 2.20        | 2.60 |
| All Dimensions in mm |             |      |

### MAXIMUM RATING @ $T_a=25^{\circ}C$ unless otherwise specified

| Symbol         | Parameter                        | Value       | Units       |
|----------------|----------------------------------|-------------|-------------|
| $V_{CBO}$      | Collector-Base Voltage           | 60          | V           |
| $V_{CEO}$      | Collector-Emitter Voltage        | 50          | V           |
| $V_{EBO}$      | Emitter-Base Voltage             | 7           | V           |
| $I_C$          | Collector Current -Continuous    | 150         | mA          |
| $P_C$          | Collector Dissipation            | 200         | mW          |
| $T_j, T_{stg}$ | Junction and Storage Temperature | -55 to +150 | $^{\circ}C$ |

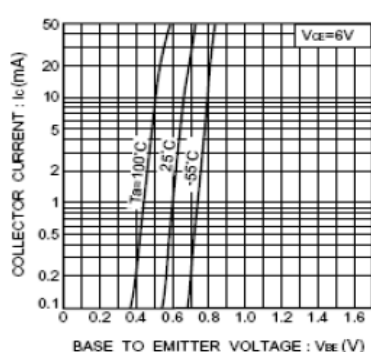
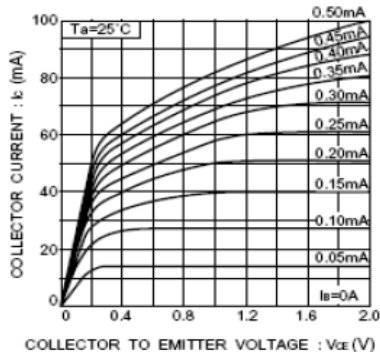
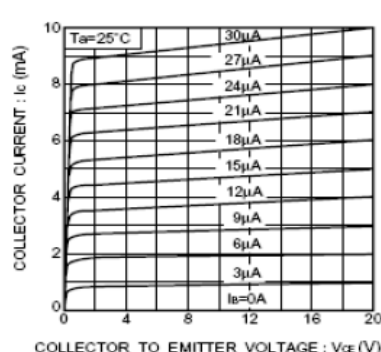
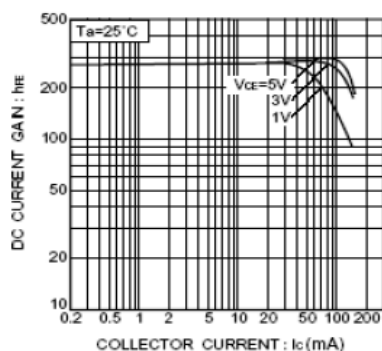
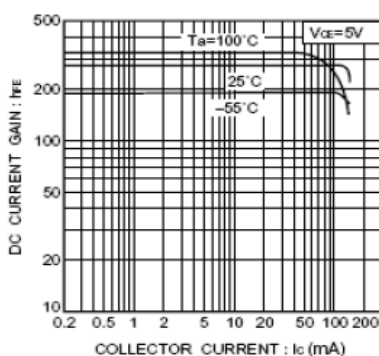
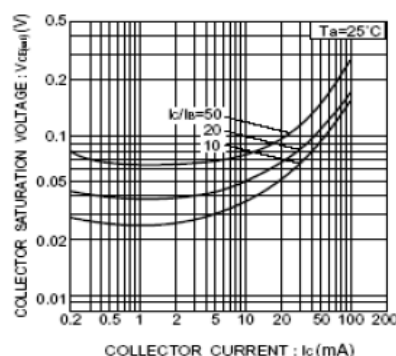
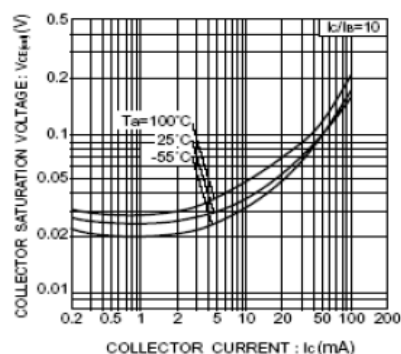
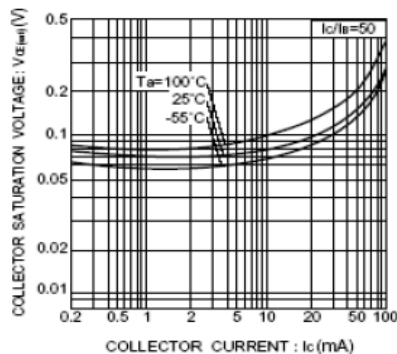
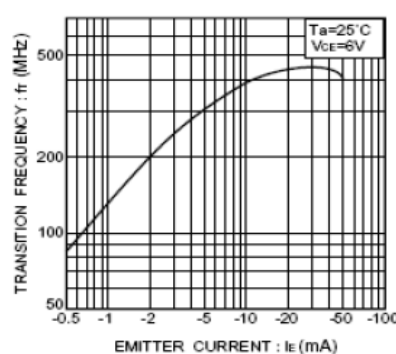
SOT-23

### ELECTRICAL CHARACTERISTICS @ $T_a=25^{\circ}C$ unless otherwise specified

| Parameter                            | Symbol        | Test conditions                  | MIN | TYP | MAX | UNIT    |
|--------------------------------------|---------------|----------------------------------|-----|-----|-----|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=50\mu A, I_E=0$             | 60  |     |     | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1mA, I_B=0$                 | 50  |     |     | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=50\mu A, I_C=0$             | 7   |     |     | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=60V, I_E=0$              |     |     | 0.1 | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=7V, I_C=0$               |     |     | 0.1 | $\mu A$ |
| DC current gain                      | $h_{FE}$      | $V_{CE}=6V, I_C=1mA$             | 120 |     | 560 |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=50mA, I_B=5mA$              |     |     | 0.4 | V       |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=12V, I_E=0A, f=1MHz$     |     | 2.0 | 3.5 | pF      |
| Transition frequency                 | $f_T$         | $V_{CE}=12V, I_E=-2mA, f=100MHz$ |     | 180 |     | MHz     |

### CLASSIFICATION OF $h_{FE(1)}$

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

**TYPICAL CHARACTERISTICS @  $T_a=25^\circ\text{C}$  unless otherwise specified**

**Fig.1** Grounded emitter propagation characteristics

**Fig.2** Grounded emitter output characteristics ( I )

**Fig.3** Grounded emitter output characteristics ( II )

**Fig.4** DC current gain vs. collector current ( I )

**Fig.5** DC current gain vs. collector current ( II )

**Fig.6** Collector-emitter saturation voltage vs. collector current

**Fig.7** Collector-emitter saturation voltage vs. collector current ( I )

**Fig.8** Collector-emitter saturation voltage vs. collector current ( II )

**Fig.9** Gain bandwidth product vs. emitter current

| Device  | Package | Shipping       |
|---------|---------|----------------|
| 2SC2412 | SOT-23  | 3000/Tape&Reel |