

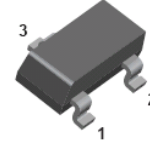
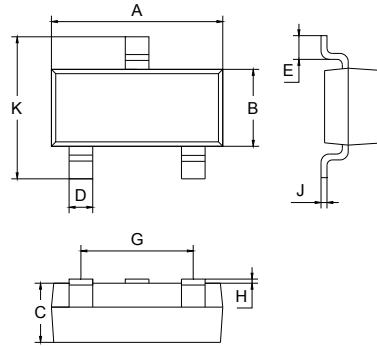


### FEATURES

- Darlington connection for a high  $h_{FE}$
- High input impedance

### APPLICATIONS

- General purpose amplifiers.



### ORDERING INFORMATION

| Type No. | Marking | Package Code |
|----------|---------|--------------|
| 2SD2142  | R1M     | SOT-23       |

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

| Symbol         | Parameter                        | Value       | Units            |
|----------------|----------------------------------|-------------|------------------|
| $V_{CBO}$      | Collector-Base Voltage           | 40          | V                |
| $V_{CEO}$      | Collector-Emitter Voltage        | 32          | V                |
| $V_{EBO}$      | Emitter-Base Voltage             | 12          | V                |
| $I_C$          | Collector Current -Continuous    | 300         | mA               |
| $P_C$          | Collector Dissipation            | 200         | mW               |
| $T_j, T_{stg}$ | Junction and Storage Temperature | -55 to +150 | $^\circ\text{C}$ |

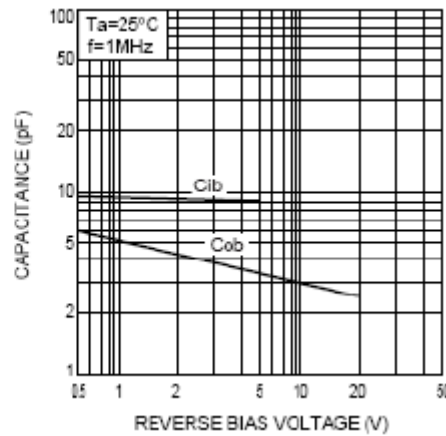
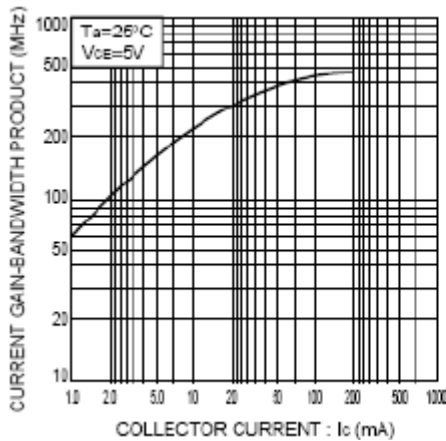
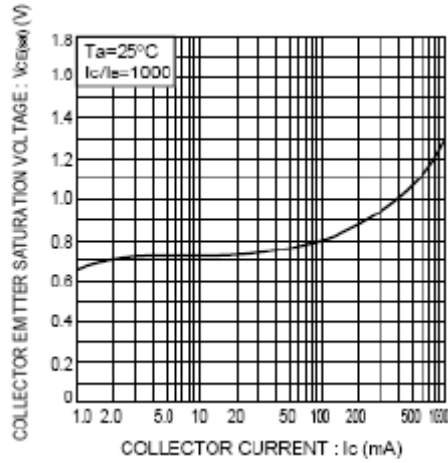
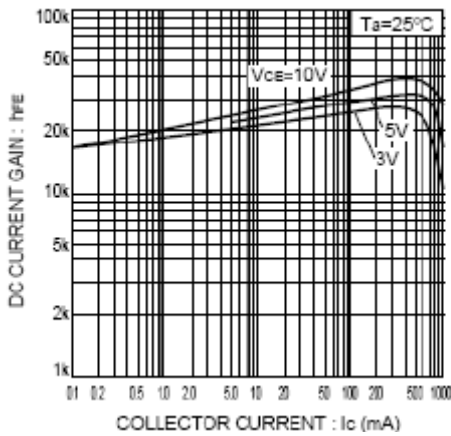
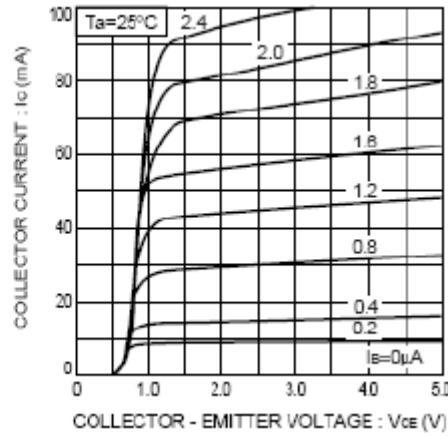
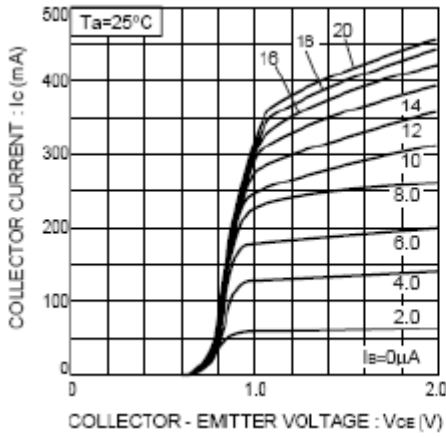
| SOT-23               |             |      |
|----------------------|-------------|------|
| Dim                  | Min         | Max  |
| A                    | 2.70        | 3.10 |
| B                    | 1.10        | 1.50 |
| C                    | 1.0 Typical |      |
| D                    | 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 |             |      |

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

| Parameter                            | Symbol        | Test conditions  | MIN  | TYP | MAX | UNIT          |
|--------------------------------------|---------------|--|------|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=100\mu\text{A}, I_E=0$                              | 40   | -   | -   | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=10\text{mA}, I_B=0$                                 | 32   | -   | -   | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=100\mu\text{A}, I_C=0$                              | 12   | -   | -   | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=30\text{V}, I_E=0$                               | -    | -   | 0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=12\text{V}, I_C=0$                               | -    | -   | 0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE}$      | $V_{CE}=3\text{V}, I_C=100\text{mA}$                     | 5000 | -   | -   | -             |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=200\text{mA}, I_B=0.2\text{mA}$                     | -    | -   | 1.4 | V             |
| Output capacitance                   | $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$                | -    | 2.5 | -   | pF            |
| Transition frequency                 | $f_T$         | $V_{CE}=5\text{V}, I_C=10\text{mA}$<br>$f=100\text{MHz}$ | -    | 200 | -   | MHz           |



### TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



| Package | Reel    | Reel Size | Box       | Box Size(mm) | Carton     | Carton Size(mm) |
|---------|---------|-----------|-----------|--------------|------------|-----------------|
| SOT-23  | 3000pcs | 7inch     | 45,000pcs | 203×203×195  | 180,000pcs | 438×438×220     |