

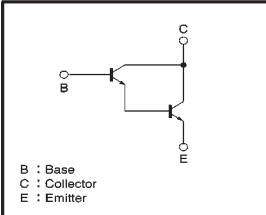
# Medium Power Transistor (60V, 1A)

## 2SD1834

### ●Features

- 1) Darlingtion connection for high DC current gain.  
(typically, DC current gain=15000 at  $V_{CE}=3V$ ,  $I_C=0.5A$ )
- 2) High input impedance.

### ●Circuit diagram



### ●Absolute maximum ratings (Ta=25°C)

| Parameter                   | Symbol    | Limits   | Unit         |
|-----------------------------|-----------|----------|--------------|
| Collector-base voltage      | $V_{CBO}$ | 60       | V            |
| Collector-emitter voltage   | $V_{CES}$ | 60       | V *2         |
| Emitter-base voltage        | $V_{EB0}$ | 7        | V            |
| Collector current           | $I_C$     | 1        | A (DC)       |
|                             |           | 2        | A (Pulse) *1 |
| Collector power dissipation | $P_C$     | 0.5      | W            |
| Junction temperature        | $T_J$     | 150      | °C           |
| Storage temperature         | $T_{stg}$ | -55~+150 | °C           |

\*1 Single pulse  $P_w=100ms$   
\*2  $R_{\theta JE}=0\Omega$

### ●Packaging specifications and hFE

| Type                         | 2SD1834 |
|------------------------------|---------|
| Package                      | MPT3    |
| hFE                          | 2k~     |
| Marking                      | DE*     |
| Code                         | T100    |
| Basic ordering unit (pieces) | 1000    |

\* Denotes hFE

### ●Electrical characteristics (Ta=25°C)

| Parameter                            | Symbol        | Min. | Typ. | Max. | Unit    | Conditions                               |
|--------------------------------------|---------------|------|------|------|---------|------------------------------------------|
| Collector-base breakdown voltage     | $BV_{CBO}$    | 60   | —    | —    | V       | $I_C=50\mu A$                            |
| Collector-emitter breakdown voltage  | $BV_{CEO}$    | 60   | —    | —    | V       | $I_C=100\mu A$ , $R_{\theta JE}=0\Omega$ |
| Emitter-base breakdown voltage       | $BV_{EB0}$    | 7    | —    | —    | V       | $I_E=50\mu A$                            |
| Collector cutoff current             | $I_{CBO}$     | —    | —    | 1    | $\mu A$ | $V_{CB}=60V$                             |
| Emitter cutoff current               | $I_{EBO}$     | —    | —    | 1    | $\mu A$ | $V_{EB}=6V$                              |
| DC current transfer ratio            | hFE           | 2000 | —    | —    | —       | $V_{CE}/I_C=3V/500mA$ *                  |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | —    | 0.9  | 1.5  | V       | $I_C/I_E=500mA/500\mu A$                 |
| Output capacitance                   | $C_{ob}$      | —    | 7    | —    | pF      | $V_{CB}=10V$ , $I_E=0A$ , $f=1MHz$       |

\* Measured using pulse current.

(94S-340-D64)

# Muting Transistor (15V, 1A)

## 2SD1468S / 2SD1865

### ●Features

- 1) Low saturation voltage, typically  $V_{CE(sat)}=0.006V$  at  $I_C/I_E=1mA/0.1mA$ .
- 2) Ideal for low voltage, high current drives.
- 3) High DC current gain and high current.

### ●Packaging specifications and hFE

| Type                         | 2SD1468S | 2SD1865 |
|------------------------------|----------|---------|
| Package                      | SPT      | ATV     |
| hFE                          | QRS      | QR      |
| Code                         | TP       | TV2     |
| Basic ordering unit (pieces) | 5000     | 2500    |

### ●Absolute maximum ratings (Ta=25°C)

| Parameter                   | Symbol    | Limits   | Unit |
|-----------------------------|-----------|----------|------|
| Collector-base voltage      | $V_{CBO}$ | 30       | V    |
| Collector-emitter voltage   | $V_{CEO}$ | 15       | V    |
| Emitter-base voltage        | $V_{EB0}$ | 5        | V    |
| Collector current           | $I_C$     | 1        | A    |
| Collector power dissipation | 2SD1468S  | 0.3      | W    |
|                             | 2SD1865   | 0.6      |      |
| Junction temperature        | $T_J$     | 150      | °C   |
| Storage temperature         | $T_{stg}$ | -55~+150 | °C   |

### ●Electrical characteristics (Ta=25°C)

| Parameter                            | Symbol        | Min. | Typ. | Max. | Unit    | Conditions                             |
|--------------------------------------|---------------|------|------|------|---------|----------------------------------------|
| Collector-base breakdown voltage     | $BV_{CBO}$    | 30   | —    | —    | V       | $I_C=50\mu A$                          |
| Collector-emitter breakdown voltage  | $BV_{CEO}$    | 15   | —    | —    | V       | $I_C=1mA$                              |
| Emitter-base breakdown voltage       | $BV_{EB0}$    | 5    | —    | —    | V       | $I_E=50\mu A$                          |
| Collector cutoff current             | $I_{CBO}$     | —    | —    | 0.5  | $\mu A$ | $V_{CB}=20V$                           |
| Emitter cutoff current               | $I_{EBO}$     | —    | —    | 0.5  | $\mu A$ | $V_{EB}=4V$                            |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | —    | 0.08 | 0.4  | V       | $I_C/I_E=0.5A/50mA$                    |
| DC current transfer ratio            | 2SD1468S      | 120  | —    | 560  | —       | $V_{CE}/I_C=3V/0.1A$                   |
|                                      | 2SD1865       | 120  | —    | 390  | —       |                                        |
| Transition frequency                 | $f_T$         | 50   | 150  | —    | MHz     | $V_{CE}=5V$ , $I_E=-50mA$ , $f=100MHz$ |
| Output capacitance                   | $C_{ob}$      | —    | 15   | 30   | pF      | $V_{CB}=10V$ , $I_E=0A$ , $f=1MHz$     |

(94L-767-D65)