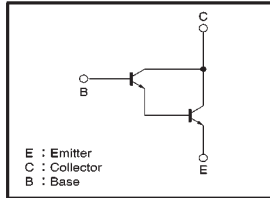


High-gain Amplifier Transistor (32V, 0.3A)

2SD2142K / 2SC2062S

●Features

- 1) Darlington connection for a high h_{FE} .
(DC current gain=5000 (Min.) at $V_{CE}=3V$, $I_C=0.1A$)
- 2) High input impedance.

●Circuit diagram**●Absolute maximum ratings (Ta=25°C)**

| Parameter | Symbol | Limits | Unit |
|-----------------------------|-----------|----------|------|
| Collector-base voltage | V_{CBO} | 40 | V |
| Collector-emitter voltage | V_{CEO} | 32 | V |
| Emitter-base voltage | V_{EBO} | 12 | V |
| Collector current | I_C | 0.3 | A |
| Collector power dissipation | P_C | 0.2 | W |
| | | 0.3 | |
| Junction temperature | T_J | 150 | °C |
| Storage temperature | T_{stg} | -55~+150 | °C |

●Packaging specifications and h_{FE}

| Type | 2SD2142K | 2SC2062S |
|------------------------------|----------|----------|
| Package | SMT3 | SPT |
| h_{FE} | 5k~ | C |
| Code | T146 | TP |
| Basic ordering unit (pieces) | 3000 | 5000 |

●Electrical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|---------------|-------|------|------|---------|--|
| Collector-base breakdown voltage | BV_{CBO} | 40 | — | — | V | $I_C=100\mu A$ |
| Collector-emitter breakdown voltage | BV_{CEO} | 32 | — | — | V | $I_C=10mA$ |
| Emitter-base breakdown voltage | BV_{EBO} | 12 | — | — | V | $I_E=100\mu A$ |
| Collector cutoff current | I_{CBO} | — | — | 0.1 | μA | $V_{CB}=30V$ |
| Emitter cutoff current | I_{EBO} | — | — | 0.1 | μA | $V_{EB}=12V$ |
| DC current transfer ratio | h_{FE} | 5000 | — | — | — | $V_{CE}/I_C=3V/0.1A$ |
| | | 10000 | — | — | — | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | — | — | 1.4 | V | $I_C/I_B=200mA/0.2mA$ |
| Transition frequency | f_T | — | 200 | — | MHz | $V_{CE}=5V$, $I_E=-10mA$, $f=100MHz$ * |
| Output capacitance | C_{ob} | — | 2.5 | — | pF | $V_{CB}=10V$, $I_E=0A$, $f=1MHz$ |

* Transition frequency of the device.

(94L-570-D25)

Low $V_{CE(sat)}$ Transistor (Strobes and DC/DC converters) (10V, 5A)

2SD2470

●Features

- 1) Low saturation voltage, typically $V_{CE(sat)}=0.25V$ at $I_C/I_B=3A/0.1A$.
- 2) Collector current of 5A is possible.

●Packaging specifications and h_{FE}

| Type | 2SD2470 |
|------------------------------|---------|
| Package | SPT |
| h_{FE} | 270~820 |
| Code | TP |
| Basic ordering unit (pieces) | 5000 |

●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|-----------------------------|-----------|----------|-------------|
| Collector-base voltage | V_{CBO} | 15 | V |
| Collector-emitter voltage | V_{CEO} | 10 | V |
| Emitter-base voltage | V_{EBO} | 10 | V |
| Collector current | I_C | 5 | A (DC) |
| | | 8 | A (Pulse) * |
| Collector power dissipation | P_C | 0.4 | W |
| Junction temperature | T_J | 150 | °C |
| Storage temperature | T_{stg} | -55~+150 | °C |

* Single pulse=10ms

●Electrical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|---------------|------|------|------|---------|--|
| Collector-base breakdown voltage | BV_{CBO} | 10 | — | — | V | $I_C=1mA$ |
| Collector-emitter breakdown voltage | BV_{CEO} | 15 | — | — | V | $I_C=50\mu A$ |
| Emitter-base breakdown voltage | BV_{EBO} | 10 | — | — | V | $I_E=50\mu A$ |
| Collector cutoff current | I_{CBO} | — | — | 0.1 | μA | $V_{CB}=10V$ |
| Emitter cutoff current | I_{EBO} | — | — | 0.5 | μA | $V_{EB}=8V$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | — | 0.25 | 0.5 | V | $I_C/I_B=3/0.1A$ |
| DC current transfer ratio | h_{FE} | 270 | — | 820 | — | $V_{CE}=2V$, $I_C=2A$ |
| Transition frequency | f_T | — | 170 | — | MHz | $V_{CE}=6V$, $I_E=0.05A$, $f=100MHz$ |
| Output capacitance | C_{ob} | — | 30 | — | pF | $V_{CB}=10V$, $I_E=0A$, $f=1MHz$ |

(SPEC-D230)

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