

# Power Transistor (400V, 0.5A)

## 2SD2568

### ●Features

1) High breakdown voltage.( $BV_{CEO}=400V$ )

### ●Absolute maximum ratings ( $T_a=25^{\circ}C$ )

| Parameter                   | Symbol    | Limits      | Unit                   |
|-----------------------------|-----------|-------------|------------------------|
| Collector-base voltage      | $V_{CBO}$ | 400         | V                      |
| Collector-emitter voltage   | $V_{CEO}$ | 400         | V                      |
| Emitter-base voltage        | $V_{EBO}$ | 7           | V                      |
| Collector current           | $I_C$     | 0.5         | A                      |
| Collector power dissipation | $P_C$     | 10          | W( $T_C=25^{\circ}C$ ) |
| Junction temperature        | $T_j$     | 150         | $^{\circ}C$            |
| Storage temperature         | $T_{stg}$ | -55 to +150 | $^{\circ}C$            |

### ●Packaging specifications and $h_{FE}$

|                              |         |
|------------------------------|---------|
| Type                         | 2SD2568 |
| Package                      | CPT3    |
| $h_{FE}$                     | PQ      |
| Code                         | TL      |
| Basic ordering unit (pieces) | 2500    |

### ●Electrical characteristics ( $T_a=25^{\circ}C$ )

| Parameter                            | Symbol        | Min. | Typ. | Max. | Unit    | Conditions                      |
|--------------------------------------|---------------|------|------|------|---------|---------------------------------|
| Collector-base breakdown voltage     | $BV_{CBO}$    | 400  | -    | -    | V       | $I_C=50\mu A$                   |
| Collector-emitter breakdown voltage  | $BV_{CEO}$    | 400  | -    | -    | V       | $I_C=1mA$                       |
| Emitter-base breakdown voltage       | $BV_{EBO}$    | 7    | -    | -    | V       | $I_E=50\mu A$                   |
| Collector cutoff current             | $I_{CBO}$     | -    | -    | 10   | $\mu A$ | $V_{CB}=400V$                   |
| Emitter cutoff current               | $I_{EBO}$     | -    | -    | 10   | $\mu A$ | $V_{EB}=6V$                     |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | -    | -    | 0.5  | V       | $I_C=100mA, I_B=10mA$           |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | -    | -    | 1.0  | V       | $I_C=100mA, I_B=10mA$           |
| DC current transfer ratio            | $h_{FE}$      | 82   | -    | 270  | -       | $V_{CE}/I_C=5V/50mA$            |
| Transition frequency                 | $f_T$         | -    | 13.5 | -    | MHz     | $V_{CE}=5V, I_E=-50mA, f=10MHz$ |
| Output capacitance                   | $C_{ob}$      | -    | 8    | -    | pF      | $V_{CB}=10V, I_E=0A, f=1MHz$    |

Transistors

●Electrical characteristics curves

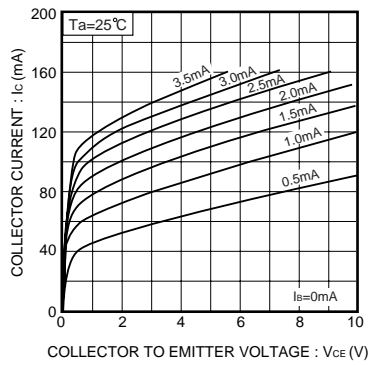


Fig.1 Grounded emitter output characteristics

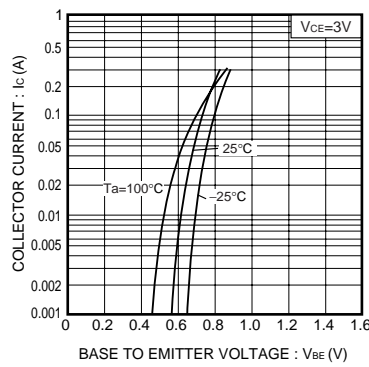


Fig.2 Grounded emitter propagation characteristics

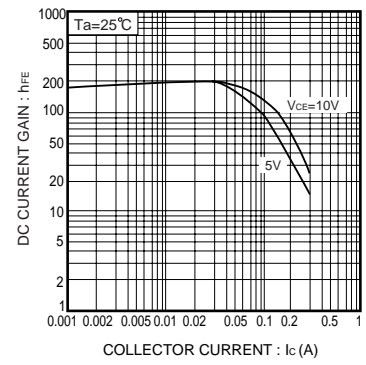


Fig.3 DC current gain vs. collector current ( I )

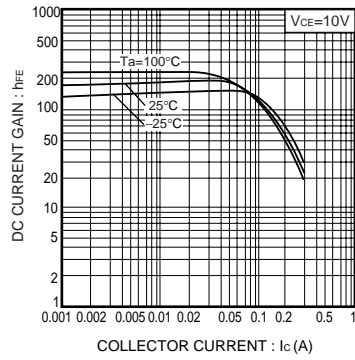


Fig.4 DC current gain vs. collector current ( II )

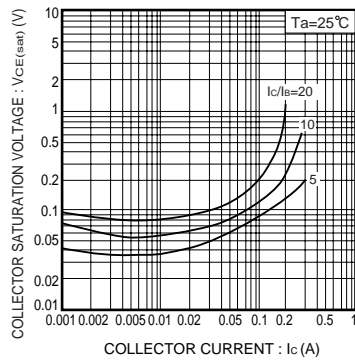


Fig.5 Collector-emitter saturation voltage vs. collector current ( I )

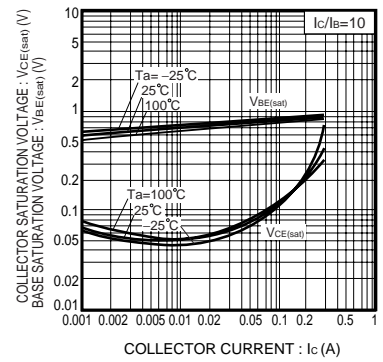


Fig.6 Collector-emitter saturation voltage vs. collector current ( II )  
Base-emitter saturation voltage vs. collector current

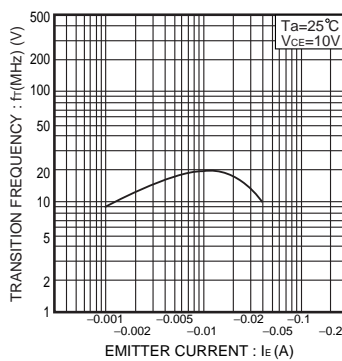


Fig.7 Gain bandwidth product vs. emitter current

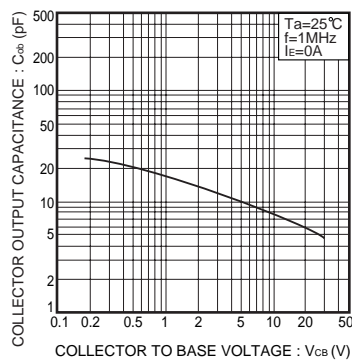


Fig.8 Collector output capacitance vs. collector-base voltage

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