

Power Transistor (–50V, –2A)

2SB1443

●Features

- 1) Low saturation voltage. $V_{CE(sat)} = -0.35V$ (Max.) at $I_C / I_B = -1A / -50mA$.
- 2) Excellent DC current gain characteristics.

●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|-----------------------------|-----------|----------|--------------|
| Collector-base voltage | V_{CBO} | –50 | V |
| Collector-emitter voltage | V_{CEO} | –50 | V |
| Emitter-base voltage | V_{EBO} | –6 | V |
| Collector current | I_C | –2 | A (DC) |
| | | –5 | A (Pulse) *1 |
| Collector power dissipation | P_C | 1 | W *2 |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | –55~+150 | °C |

*1 Single pulse, $P_w=10ms$

*2 Printed circuit board 1.7mm thick, collector plating $1cm^2$ or larger.

●Packaging specifications and hFE

| | |
|------------------------------|---------|
| Type | 2SB1443 |
| Package | ATV |
| hFE | Q |
| Marking | – |
| Code | TV2 |
| Basic ordering unit (pieces) | 2500 |

*Denotes hFE

●Electrical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|---------------|------|-------|-------|---------|----------------------------------|
| Collector-base breakdown voltage | BV_{CBO} | –50 | – | – | V | $I_C=-50\mu A$ |
| Collector-emitter breakdown voltage | BV_{CEO} | –50 | – | – | V | $I_C=-1mA$ |
| Emitter-base breakdown voltage | BV_{EBO} | –6 | – | – | V | $I_E=-50\mu A$ |
| Collector cutoff current | I_{CBO} | – | – | –0.1 | μA | $V_{CB}=-50V$ |
| Emitter cutoff current | I_{EBO} | – | – | –0.1 | μA | $V_{EB}=-5V$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | – | –0.15 | –0.35 | V | $I_C/I_B=-1A/-50mA$ * |
| DC current transfer ratio | hFE | 120 | – | 270 | – | $V_{CE}/I_C=-2V/-0.5A$ |
| Transition frequency | f_T | – | 200 | – | MHz | $V_{CE}=-2V, I_E=0.5A, f=100MHz$ |
| Output capacitance | C_{ob} | – | 36 | – | pF | $V_{CB}=-10V, I_E=0A, f=1MHz$ * |

* Measured using pulse current

Transistors

●電気的特性曲線

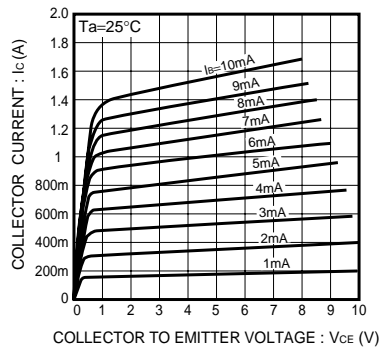


Fig.1 Grounded emitter output characteristics

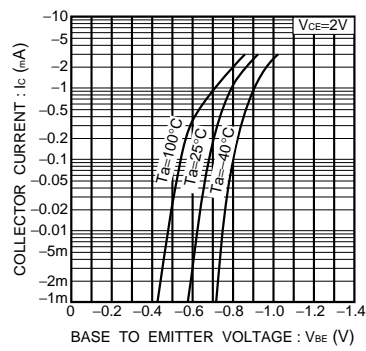


Fig.2 Grounded emitter propagation characteristics

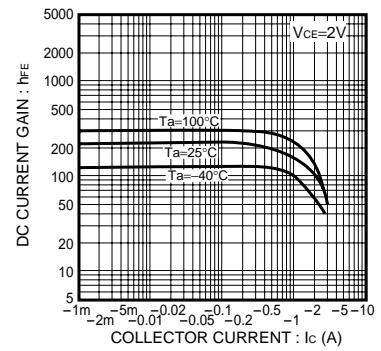


Fig.3 DC current gain vs. collector current

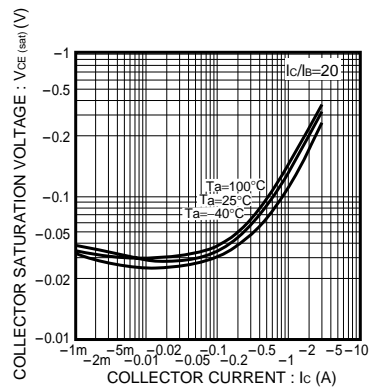


Fig.4 Collector-emitter saturation voltage vs. collector current

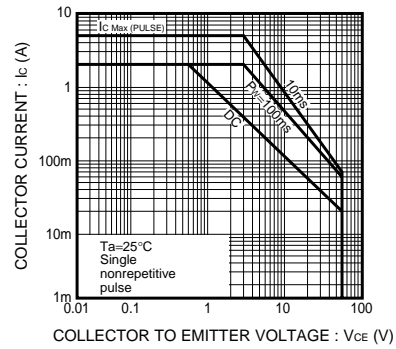


Fig.5 Safe operating area

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