

Power Transistor (−160V, −1.5A)

2SB1275 / 2SB1236A

●Features

- 1) High breakdown voltage.($V_{CE0} = -160V$)
- 2) Low collector output capacitance.
(Typ. 30pF at $V_{CB} = 10V$)
- 3) High transition frequency.($f_T = 50MHz$)
- 4) Complements the 2SD1918 / 2SD1857A.

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

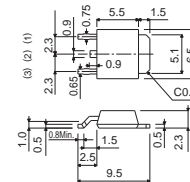
| Parameter | Symbol | Limits | Unit |
|-----------------------------|-----------|-------------|------------------------|
| Collector-base voltage | V_{CBO} | -160 | V |
| Collector-emitter voltage | V_{CEO} | -160 | V |
| Emitter-base voltage | V_{EBO} | -5 | V |
| Collector current | I_c | -1.5 | A(DC) |
| | | -3 | A(Pulse) *1 |
| Collector power dissipation | P_c | 1 | W($T_c=25^{\circ}C$) |
| | | 10 | |
| | | 1 | W *2 |
| Junction temperature | T_j | 150 | $^{\circ}C$ |
| Storage temperature | T_{stg} | -55 to +150 | $^{\circ}C$ |

* 1 Single pulse $P_w=100ms$

* 2 Printed circuit board 1.7mm thick, collector plating 1cm² or larger.

●Dimensions (Unit : mm)

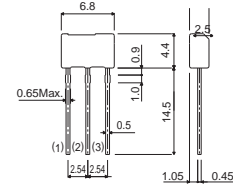
2SB1275



ROHM : CPT3
EIAJ : SC-63

(1) Base(Gate)
(2) Collector(Drain)
(3) Emitter(Source)

2SB1236A



ROHM : ATV

Taping specifications

(1) Emitter
(2) Collector
(3) Base

●Packaging specifications and h_{FE}

| Type | 2SB1275 | 2SB1236A |
|------------------------------|---------|----------|
| Package | CPT3 | ATV |
| h_{FE} | P | D |
| Code | TL | TV2 |
| Basic ordering unit (pieces) | 2500 | 2500 |

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

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|---------------|------|------|------|---------|---------------------------------------|
| Collector-base breakdown voltage | BV_{CBO} | -160 | - | - | V | $I_c = -50\mu A$ |
| Collector-emitter breakdown voltage | BV_{CEO} | -160 | - | - | V | $I_c = -1mA$ |
| Emitter-base breakdown voltage | BV_{EBO} | -5 | - | - | V | $I_E = -50\mu A$ |
| Collector cutoff current | I_{CBO} | - | - | -1 | μA | $V_{CB} = -120V$ |
| Emitter cutoff current | I_{EBO} | - | - | -1 | μA | $V_{EB} = -4V$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | - | - | -2 | V | $I_c/I_B = -1A/-0.1A$ * |
| DC current transfer ratio | 2SB1275 | 82 | - | 180 | - | $V_{CE} = -5V, I_c = -0.1A$ |
| | 2SB1236A | 100 | - | 200 | - | |
| Transition frequency | f_T | - | 50 | - | MHz | $V_{CE} = -5V, I_E = 0.1A, f = 30MHz$ |
| Output capacitance | C_{ob} | - | 30 | - | pF | $V_{CB} = -10V, I_E = 0A, f = 1MHz$ |

*Measured using pulse current.

●Electrical characteristics curves

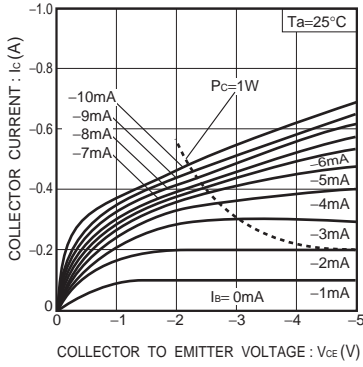


Fig.1 Ground emitter output characteristics

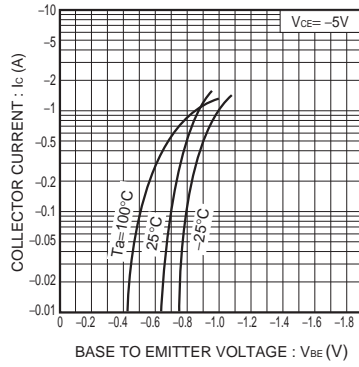


Fig.2 Ground emitter propagation characteristics

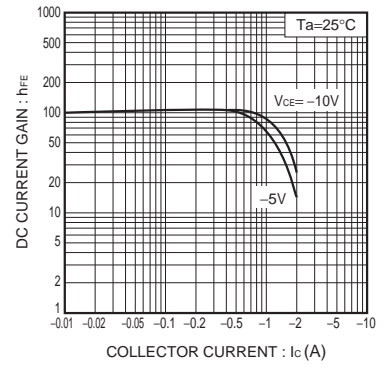


Fig.3 DC current gain vs. collector current (I)

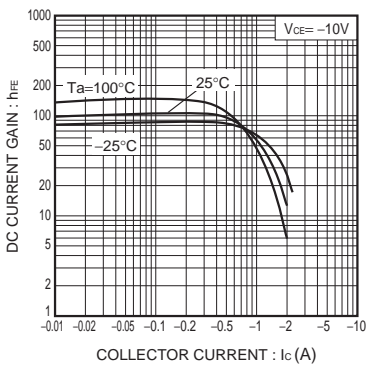


Fig.4 DC current gain vs. collector current (II)

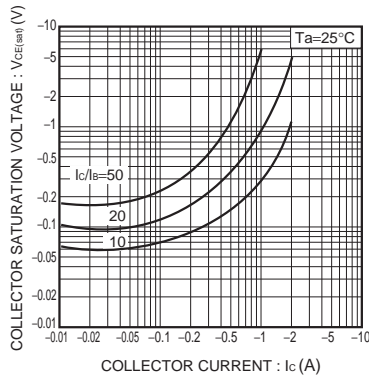


Fig.5 Collector-emitter saturation voltage vs. collector current

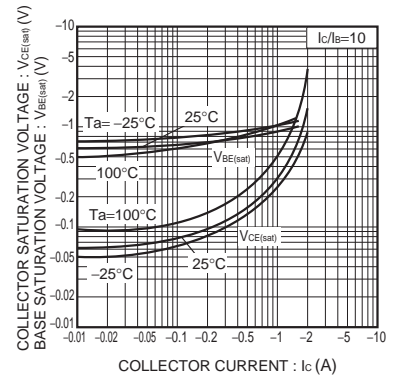


Fig.6 Collector-emitter saturation voltage vs. collector current
Base-emitter saturation voltage

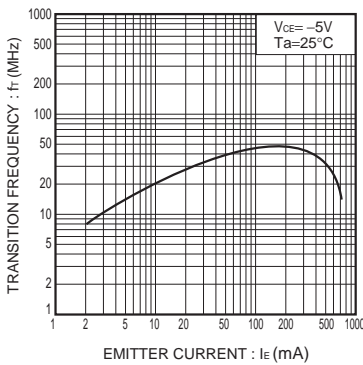


Fig.7 Resistance ratio vs. emitter current

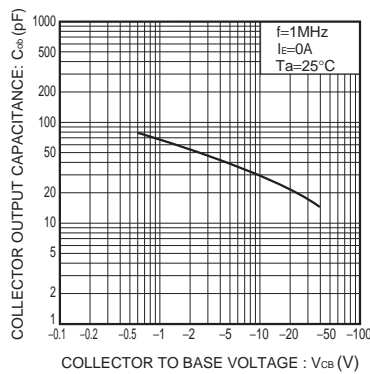


Fig.8 Collector output capacitance vs. collector-base voltage

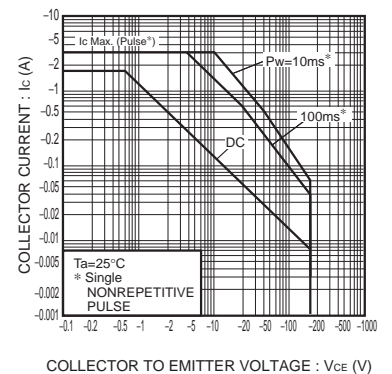
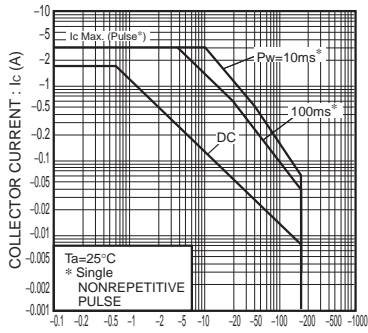


Fig.9 Safe operating area (2SB1236A)



COLLECTOR TO EMITTER VOLTAGE : V_{ce} (V)

Fig.10 Safe operating area (2SB1275)

Notes

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