

SILICON POWER TRANSISTOR 2SB548, 549/2SD414, 415

PNP/NPN SILICON EPITAXIAL TRANSISTOR FOR LOW-FREQUENCY POWER AMPLIFIERS

FEATURES

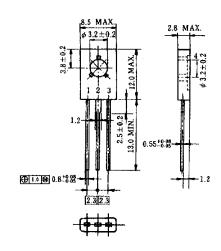
- Ideal for audio amplifier drivers with 30 W to 50 W output
- High voltage
- · Available for small mount spaces due to small and thin package
- · Easy to be attached to radiators

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

| Parameter | Symbol | 2SB548/ | 2SB549/ | Unit |
|------------------------------|------------------|-----------------|---------|------|
| | | 2SD414 | 2SD415 | |
| Collector to base voltage | VcBO | -100/120 | | ٧ |
| Collector to emitter voltage | Vceo | -80/80 -100/100 | | ٧ |
| Emitter to base voltage | VEBO | -5.0/5.0 | | ٧ |
| Collector current | Ic(DC) | -0.8/0.8 | | Α |
| Collector current | Ic(pulse)* | -1.5/1.5 | | Α |
| Total power dissipation | P⊤ (Ta = 25°C) | 1.0 | | W |
| Total power dissipation | P⊤ (Tc = 25°C) | 10 | | W |
| Junction temperature | Tj | 150 | | ç |
| Storage temperature | T _{stg} | -55 to +150 | | °C |

^{*} PW \leq 10 ms, duty cycle \leq 50%

PACKAGE DRAWING (UNIT: mm)



Electrode Connection

- 1. Emitter
- 2. Collector connected to mounting plane
- 3. Base
- 4. Fin (Collector)

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|------------------------------|----------------------|--|------|----------|----------|------|
| Collector cutoff current | Ісво | $V_{CB} = -80/80 \text{ V}, I_E = 0$ | | | -1.0/1.0 | μΑ |
| Emitter cutoff current | ІЕВО | $V_{EB} = -3.0/3.0 \text{ V, Ic} = 0$ | | | -1.0/1.0 | μΑ |
| DC current gain | h _{FE1} | $V_{CE} = -5.0/5.0 \text{ V}, \text{ Ic} = -2.0/2.0 \text{ mA*}$ | 20 | | | |
| DC current gain | hFE2 | $V_{CE} = -5.0/5.0 \text{ V}, \text{ Ic} = -200/200 \text{ mA*}$ | 40 | 90 | 320 | |
| Collector saturation voltage | V _{CE(sat)} | $I_{C} = -500/500 \text{ mA}, I_{B} = -50/50 \text{ mA}^{*}$ | | -0.4/0.3 | -2.0/2.0 | ٧ |
| Base saturation voltage | V _{BE(sat)} | $Ic = -500/500 \text{ mA}, IB = -50/50 \text{ mA}^*$ | | -0.9/0.9 | -1.5/1.5 | V |
| Gain bandwidth product | f⊤ | $V_{CE} = -5.0/5.0 \text{ V}, \text{ Ic} = -100/100 \text{ mA}$ | | 70/45 | | MHz |
| Collector capacitance | Cob | $V_{CB} = -10/10 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$ | | 25/15 | | pF |

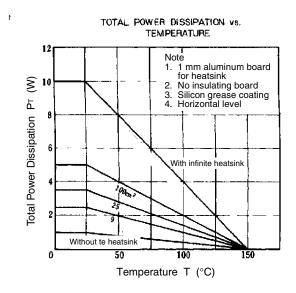
Pulse test PW \leq 350 μ s, duty cycle \leq 2%

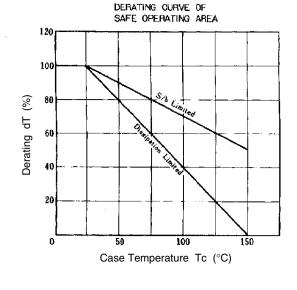
hfe2 CLASSIFICATION

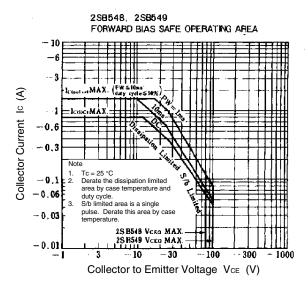
| Marking | S | R | Q | Р |
|------------------|----------|-----------|------------|------------|
| h _{FE2} | 40 to 80 | 60 to 120 | 100 to 200 | 160 to 320 |

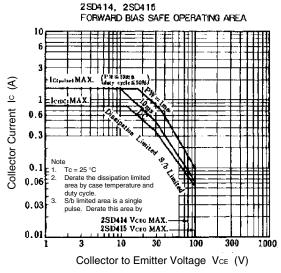
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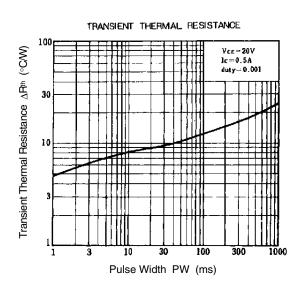
TYPICAL CHARACTERISTICS (Ta = 25°C)

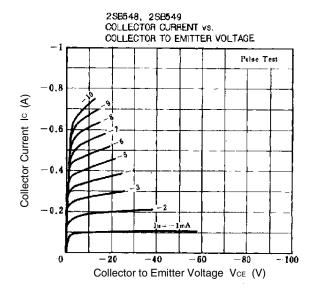


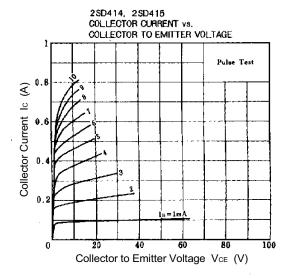


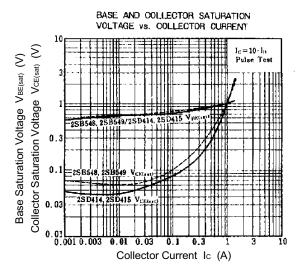


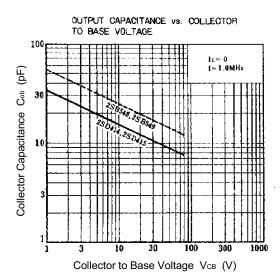


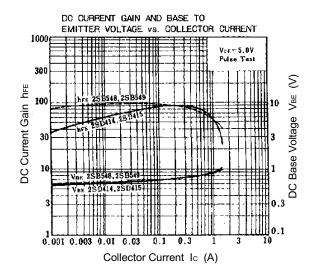


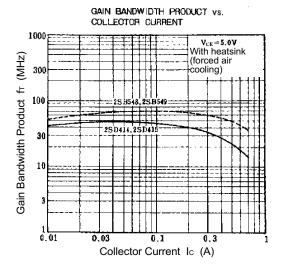












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