

SANYO

Switching Regulator Applications

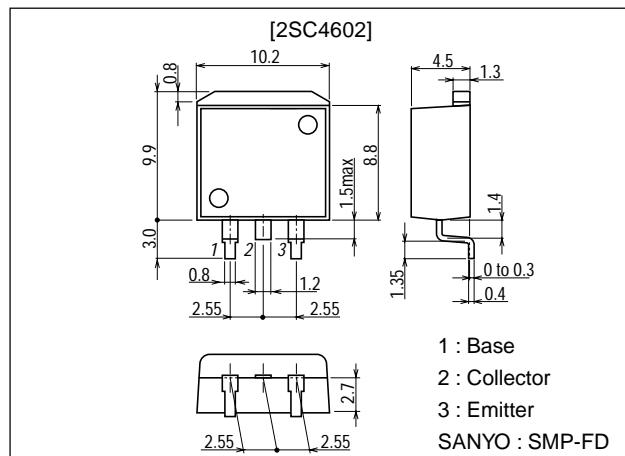
Features

- Surface mount type device making the following possible.
- Reduction in the number of manufacturing processes for 2SC4602-applied equipment.
- High density surface mount applications.
- Small size of 2SC4602-applied equipment.
- High breakdown voltage, high reliability.
- Fast switching speed.
- Wide ASO.
- Adoption of MBIT process.

Package Dimensions

unit:mm

2069C



Specifications

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|------------------|--------------------------|-------------|------|
| Collector-to-Base Voltage | V _{CBO} | | 1100 | V |
| Collector-to-Emitter Voltage | V _{CEO} | | 800 | V |
| Emitter-to-Base Voltage | V _{EBO} | | 7 | V |
| Collector Current | I _C | | 3 | A |
| Collector Current (Pulse) | I _{CP} | PW≤300μs, duty cycle≤10% | 10 | A |
| Base Current | I _B | | 1.5 | A |
| Collector Dissipation | P _C | | 1.65 | W |
| Junction Temperature | T _j | T _c =25°C | 50 | W |
| | | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------------|-------------------|---|---------|-----|-----|------|
| | | | min | typ | max | |
| Collector Cutoff Current | I _{CBO} | V _{CB} =800V, I _E =0 | | | 10 | μA |
| Emitter Cutoff Current | I _{EBO} | V _{EB} =5V, I _C =0 | | | 10 | μA |
| DC Current Gain | h _{FE} 1 | V _{CE} =5V, I _C =0.2A | 10* | 40* | 8 | |
| | | V _{CE} =5V, I _C =1A | | | | |

*: For the h_{FE}1 of the 2SC4602, specify two ranks or more in principle.

| | | | | | | | | |
|----|---|----|----|---|----|----|---|----|
| 10 | K | 20 | 15 | L | 30 | 20 | M | 40 |
|----|---|----|----|---|----|----|---|----|

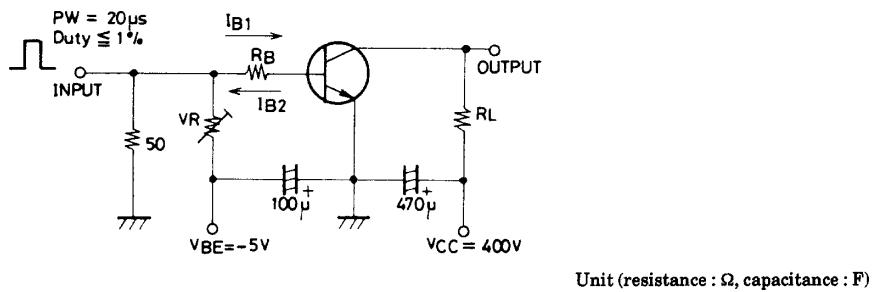
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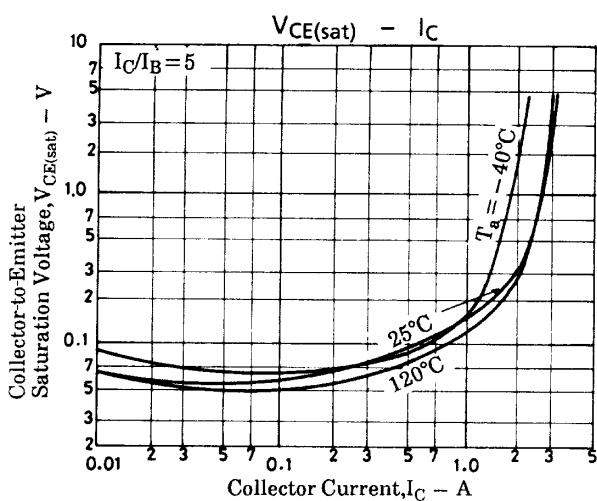
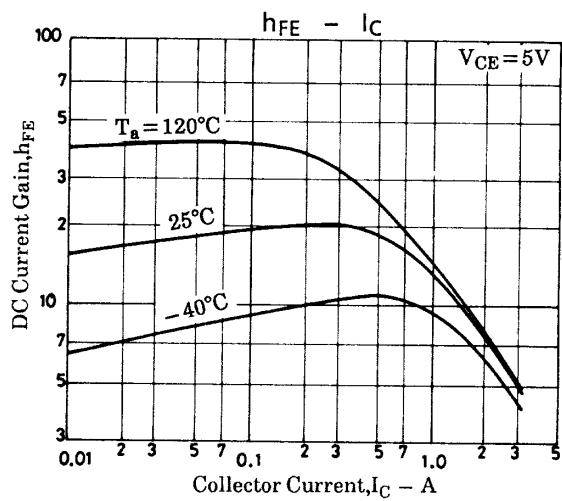
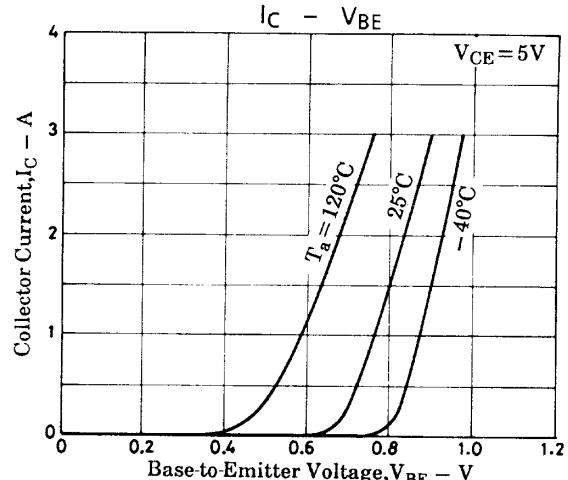
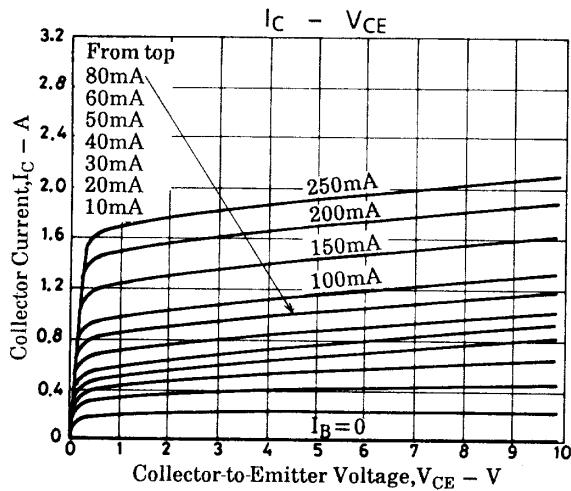
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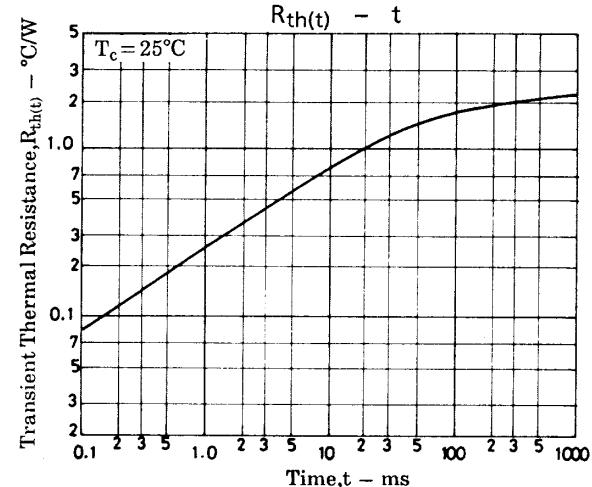
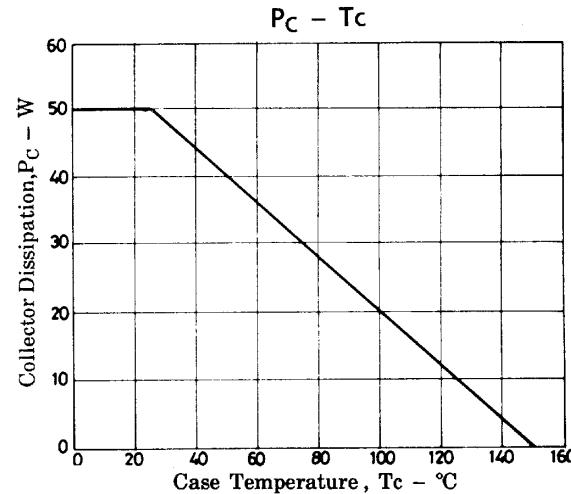
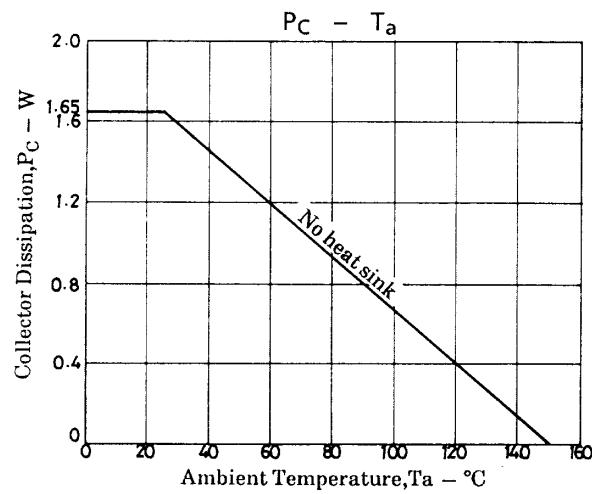
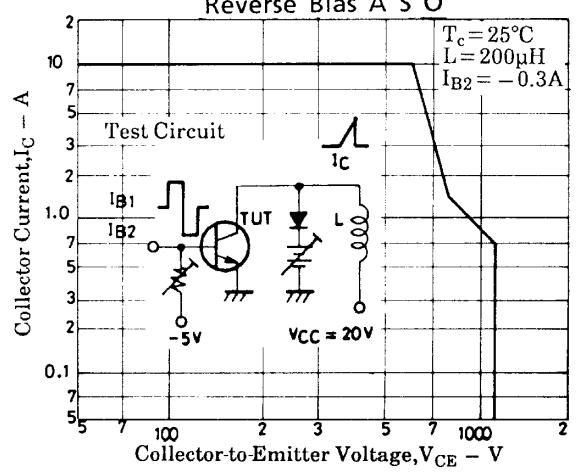
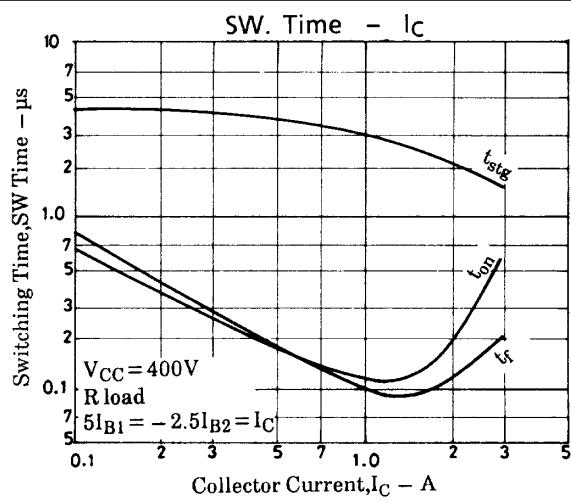
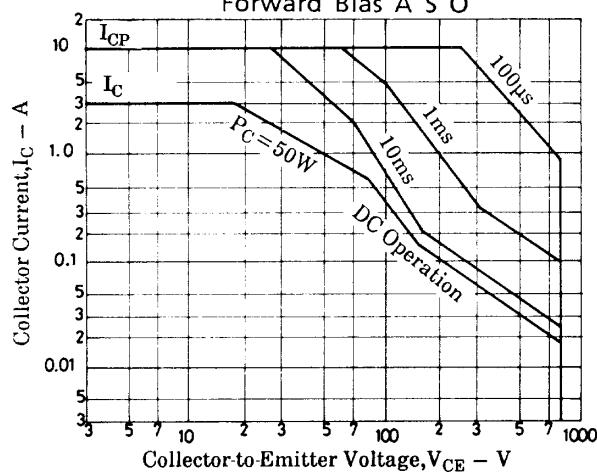
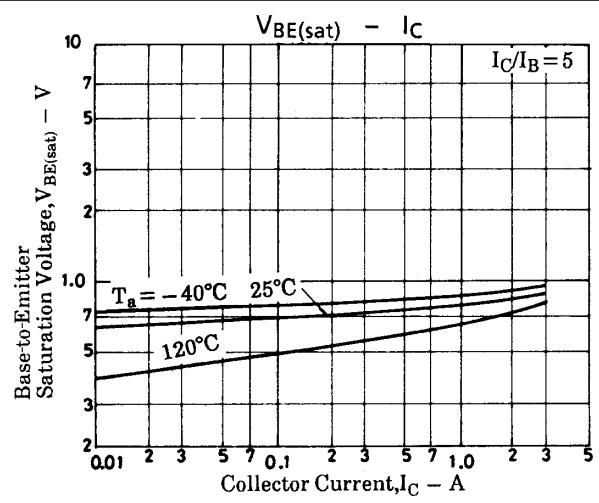
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|----------------|---|---------|-----|-----|------|
| | | | min | typ | max | |
| Gain-Bandwidth Product | f_T | $V_{CE}=10V, I_C=0.2A$ | | 15 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=10V, f=1MHz$ | | 60 | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=1.5A, I_B=0.3A$ | | | 2.0 | V |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=1.5A, I_B=0.3A$ | | | 1.5 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=1mA, I_E=0$ | 1100 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=5mA, R_{BE}=\infty$ | 800 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=1mA, I_C=0$ | 7 | | | V |
| Collector-to-Emitter Sustain Voltage | $V_{CEO(sus)}$ | $I_C=1.5A, I_{B1}=-I_{B2}=0.3A, L=2mH, \text{clamped}$ | 800 | | | V |
| Turn-ON Time | t_{on} | $I_C=2A, I_{B1}=0.4A, I_{B2}=-0.8A, R_L=200\Omega, V_{CC}=400V$ | | | 0.5 | μs |
| Storage Time | t_{stg} | $I_C=2A, I_{B1}=0.4A, I_{B2}=-0.8A, R_L=200\Omega, V_{CC}=400V$ | | | 3.0 | μs |
| Fall Time | t_f | $I_C=2A, I_{B1}=0.4A, I_{B2}=-0.8A, R_L=200\Omega, V_{CC}=400V$ | | | 0.3 | μs |

Switching Time Test Circuit



Unit (resistance : Ω , capacitance : F)





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