



2SA1606/2SC4159

High-Voltage Switching, AF 100W Driver Applications

Applications

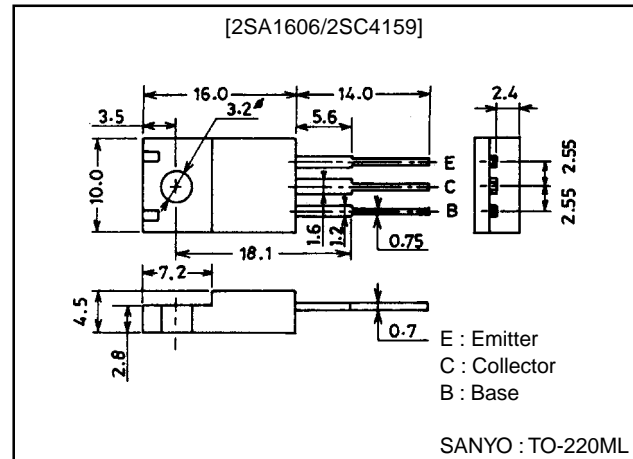
- High-voltage switching, AF power amplifier, 100W output predrivers.

Features

- Micaless package facilitating mounting.

Package Dimensions

unit:mm
2041



() : 2SA1606

Specifications

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------------|-------------|------|
| Collector-to-Base Voltage | V_{CB0} | | (-)180 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | (-)160 | V |
| Emitter-to-Base Voltage | V_{EBO} | | (-)6 | V |
| Collector Current | I_C | | (-)1.5 | A |
| Collector Current (Pulse) | I_{CP} | | (-)3 | A |
| Collector Dissipation | P_C | $T_c=25^\circ C$ | 15 | W |
| Junction Temperature | T_j | | 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} | $V_{CB}=-120V, I_E=0$ | | | (-)10 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=-4V, I_C=0$ | | | (-)10 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=-5V, I_C=-300mA$ | 60* | | 200* | |
| Gain-Bandwidth Product | f_T | $V_{CE}=-10V, I_C=-50mA$ | | 100 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=-10V, f=1MHz$ | | (30)23 | | pF |
| Base-to-Emitter Voltage | V_{BE} | $V_{CE}=-5V, I_C=-10mA$ | | | (-)1.5 | V |

* : The 2SA1606/2SC4159 are classified by 300mA h_{FE} as follows :

Continued on next page.

| | | | | | |
|----|---|-----|-----|---|-----|
| 60 | D | 120 | 100 | E | 200 |
|----|---|-----|-----|---|-----|

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

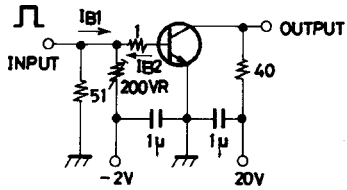
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Continued from preceding page.

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|-----------------------------|---------|--------|-----|---------|
| | | | min | typ | max | |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=(-)500mA, I_B=(-)50mA$ | | (-0.5) | | V |
| | | | | 0.3 | | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=(-)1mA, I_E=0$ | (-180) | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=(-)1mA, R_{BE}=\infty$ | (-160) | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=(-)1mA, I_C=0$ | (-6) | | | V |
| Turn-ON Time | t_{on} | See specified test circuit. | | (0.29) | | μs |
| | | See specified test circuit. | | 0.15 | | μs |
| Fall Time | t_f | See specified test circuit. | | (0.19) | | μs |
| | | See specified test circuit. | | 0.48 | | μs |
| Storage Time | t_{stg} | See specified test circuit. | | (0.48) | | μs |
| | | See specified test circuit. | | 0.81 | | μs |

Switching Time Test Circuit

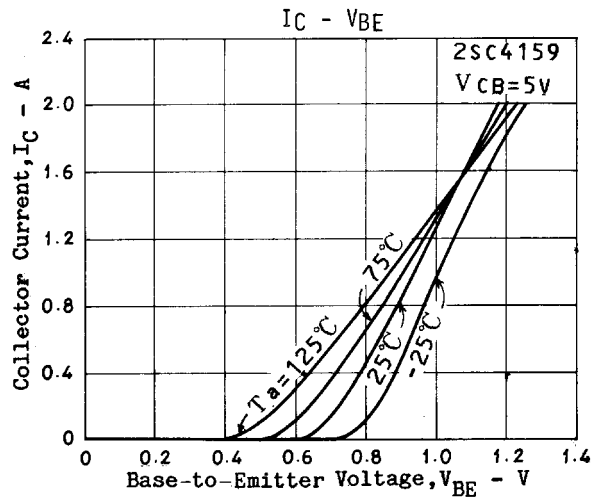
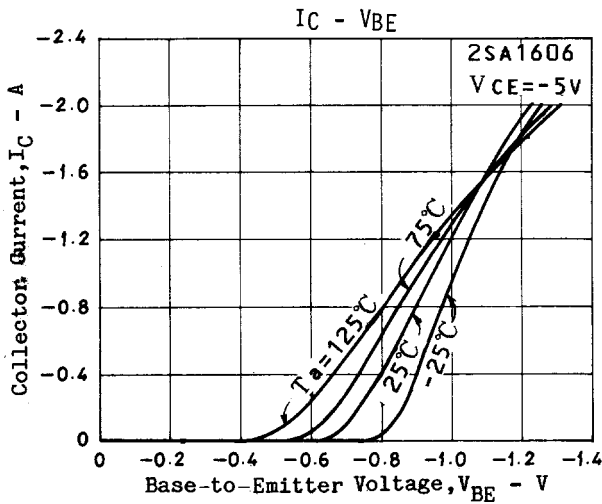
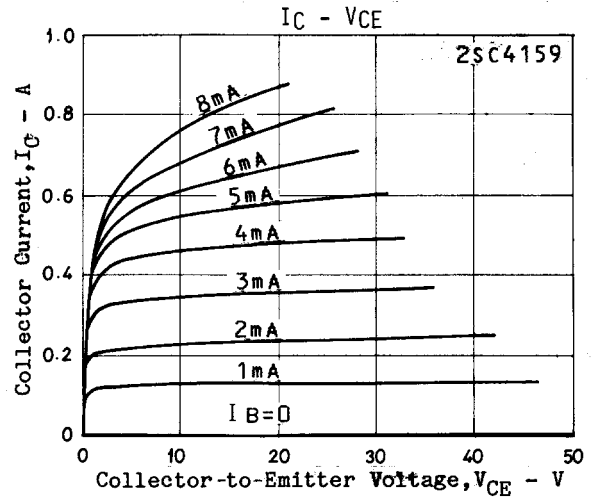
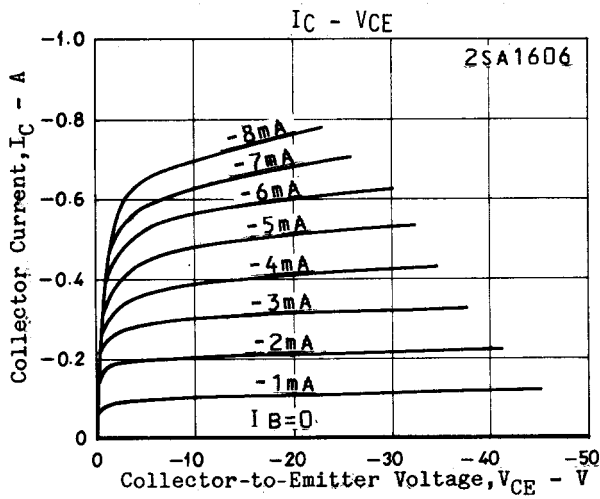


$$10I_{B1} = -10I_{B2} = I_C = 0.5A$$

$$PW = 20\mu s$$

For PNP, the polarity is reversed.

Unit (resistance : Ω , capacitance : F)



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