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|  | No.3972 | 2SA1813 |
| | PNP Epitaxial Planar Silicon Transistor Low-Frequency General-Purpose Amp, ~ Driver, Muting Circuit Applications | |

Features

- Very small-sized package permitting 2SA1813-applied sets to be made smaller and slimmer.
- Adoption of FBET process.
- High DC current gain ($h_{FE} = 500$ to 1200).
- Low collector-to-emitter saturation voltage ($V_{CE(sat)} \leq 0.3V$).
- High V_{EBO} ($V_{EBO} \geq 15V$).

Absolute Maximum Ratings at $T_a = 25^\circ C$

| | | | unit |
|------------------------------|-----------|-------------|------------|
| Collector-to-Base Voltage | V_{CBO} | -30 | V |
| Collector-to-Emitter Voltage | V_{CEO} | -25 | V |
| Emitter-to-Base Voltage | V_{EBO} | -15 | V |
| Collector Current | I_C | -150 | mA |
| Collector Current (Pulse) | I_{CP} | -300 | mA |
| Base Current | I_B | -30 | mA |
| Collector Dissipation | P_C | 200 | mW |
| Junction Temperature | T_j | 150 | $^\circ C$ |
| Storage Temperature | T_{stg} | -55 to +150 | $^\circ C$ |

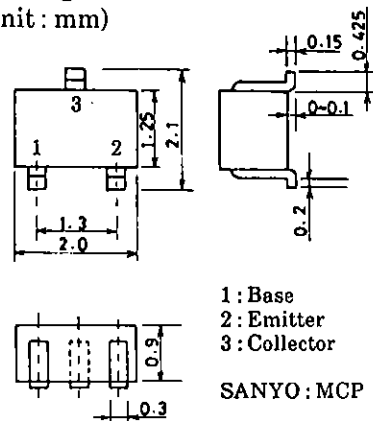
Mounted on board

Electrical Characteristics at $T_a = 25^\circ C$

| | | | min | typ | max | unit |
|--------------------------|---------------|-------------------------------|-------|------|------|---------|
| Collector Cutoff Current | I_{CBO} | $V_{CB} = -20V, I_E = 0$ | | | -0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = -10V, I_C = 0$ | | | -0.1 | μA |
| DC Current Gain | h_{FE} | $V_{CE} = -5V, I_C = -1mA$ | 500 | 800 | 1200 | |
| Gain-Bandwidth Product | f_T | $V_{CE} = -10V, I_C = -10mA$ | | 210 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = -10V, f = 1MHz$ | | 2.6 | | pF |
| C-E Saturation Voltage | $V_{CE(sat)}$ | $I_C = -50mA, I_B = -1mA$ | -0.15 | -0.3 | | V |
| B-E Saturation Voltage | $V_{BE(sat)}$ | $I_C = -50mA, I_B = -1mA$ | -0.78 | -1.1 | | V |
| C-B Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = -10\mu A, I_E = 0$ | -30 | | | V |
| C-E Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = -1mA, R_{BE} = \infty$ | -25 | | | V |
| E-B Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = -10\mu A, I_C = 0$ | -15 | | | V |

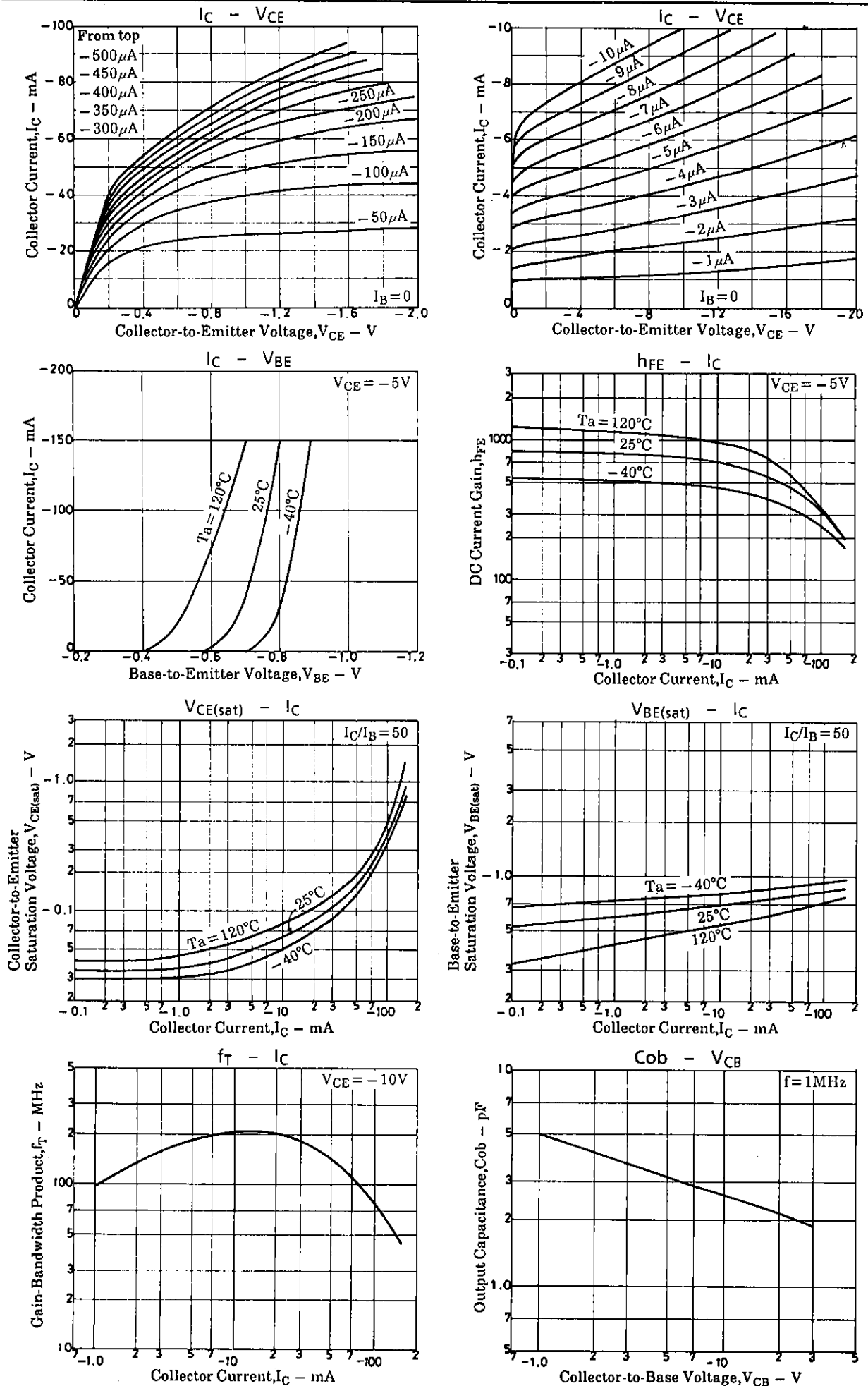
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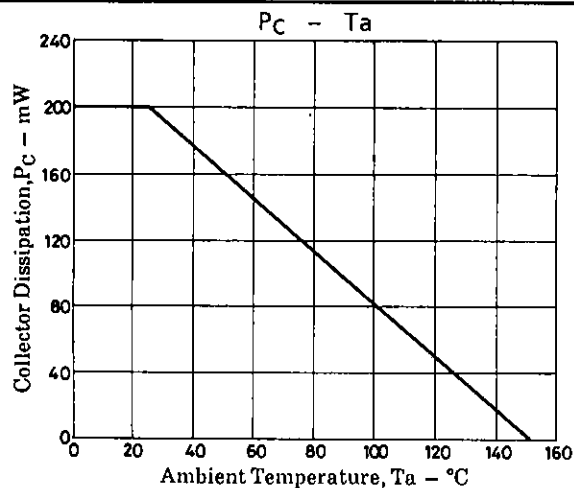
Package Dimensions 2059A (unit: mm)



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