

**SANYO**

No.3644

**2SA1777/2SC4623**

PNP/NPN Epitaxial Planar Silicon Transistors  
**Ultrahigh-Definition CRT Display**  
**Video Output Applications**

**Features**

- High  $f_T$ :  $f_T = 400\text{MHz}(\text{typ})$ .
- High breakdown voltage:  $V_{CE0} \geq 250\text{V}(\text{min})$ .
- High current.
- Small reverse transfer capacitance and excellent high-frequency characteristic:  
 $C_{re} = 3.4\text{pF}(\text{NPN}), 4.2\text{pF}(\text{PNP})$ .
- Complementary pair with the 2SA1777/2SC4623.
- Adoption of FBET process.

( ): 2SA1777

**Absolute Maximum Ratings at  $T_a = 25^\circ\text{C}$** 

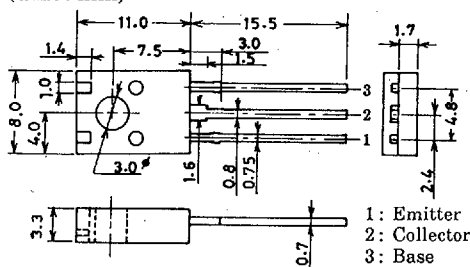
|                              |           |             | unit             |
|------------------------------|-----------|-------------|------------------|
| Collector-to-Base Voltage    | $V_{CBO}$ | (- )250     | V                |
| Collector-to-Emitter Voltage | $V_{CEO}$ | (- )250     | V                |
| Emitter-to-Base Voltage      | $V_{EBO}$ | (- )3       | V                |
| Collector Current            | $I_C$     | (- )300     | mA               |
| Collector Current (Pulse)    | $I_{CP}$  | (- )600     | mA               |
| Collector Dissipation        | $P_C$     | 1.3         | W                |
|                              |           | 10          | W                |
| Junction Temperature         | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage Temperature          | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

 $T_c = 25^\circ\text{C}$ **Electrical Characteristics at  $T_a = 25^\circ\text{C}$** 

|                              |               |                                                 | min      | typ     | max  | unit          |
|------------------------------|---------------|-------------------------------------------------|----------|---------|------|---------------|
| Collector Cutoff Current     | $I_{CBO}$     | $V_{CB} = (-)150\text{V}, I_E = 0$              |          | (- )0.1 |      | $\mu\text{A}$ |
| Emitter Cutoff Current       | $I_{EBO}$     | $V_{EB} = (-)2\text{V}, I_C = 0$                |          | (- )1.0 |      | $\mu\text{A}$ |
| DC Current Gain              | $h_{FE}(1)$   | $V_{CE} = (-)10\text{V}, I_C = (-)50\text{mA}$  | 40*      |         | 200* |               |
|                              | $h_{FE}(2)$   | $V_{CE} = (-)10\text{V}, I_C = (-)250\text{mA}$ | 20       |         |      |               |
| Gain Bandwidth Product       | $f_T$         | $V_{CE} = (-)30\text{V}, I_C = (-)100\text{mA}$ |          | 400     |      | MHz           |
| Output Capacitance           | $C_{ob}$      | $V_{CB} = (-)30\text{V}, f = 1\text{MHz}$       | (5.0)4.2 |         |      | pF            |
| Reverse Transfer Capacitance | $C_{re}$      | $V_{CB} = (-)30\text{V}, f = 1\text{MHz}$       | (4.2)3.4 |         |      | pF            |
| C-E Saturation Voltage       | $V_{CE(sat)}$ | $I_C = (-)50\text{mA}, I_B = (-)5\text{mA}$     |          | (- )1.0 |      | V             |
| B-E Saturation Voltage       | $V_{BE(sat)}$ | $I_C = (-)50\text{mA}, I_B = (-)5\text{mA}$     |          | (- )1.0 |      | V             |
| C-B Breakdown Voltage        | $V_{(BR)CBO}$ | $I_C = (-)10\mu\text{A}, I_E = 0$               | (- )250  |         |      | V             |
| C-E Breakdown Voltage        | $V_{(BR)CEO}$ | $I_C = (-)1\text{mA}, R_{BE} = \infty$          | (- )250  |         |      | V             |
| E-B Breakdown Voltage        | $V_{(BR)EBO}$ | $I_E = (-)100\mu\text{A}, I_C = 0$              | (- )3    |         |      | V             |

\* : The 2SA1777/2SC4623 are classified by 50mA  $h_{FE}$  as follows :

|    |   |    |    |   |     |     |   |     |
|----|---|----|----|---|-----|-----|---|-----|
| 40 | C | 80 | 60 | D | 120 | 100 | E | 200 |
|----|---|----|----|---|-----|-----|---|-----|

**Package Dimensions 2042B**  
(unit: mm)

SANYO: TO126ML

**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

