



# SANYO Semiconductors

## DATA SHEET

# AML2002

— NPN Epitaxial Planar Silicon Transistor

## LED Back Light

### Features

- $V_{CEO}=200V$ ,  $I_C=0.7A$
- Low collector-to-emitter saturation voltage  $V_{CE(sat)}=0.125V(\text{typ.})@I_C=0.35A$
- High-speed switching  $t_f=70ns(\text{typ.})@I_C=0.3A$
- The plastic-covered heat sink eliminates the need for an insulator when mounting the AML2002

### Specifications

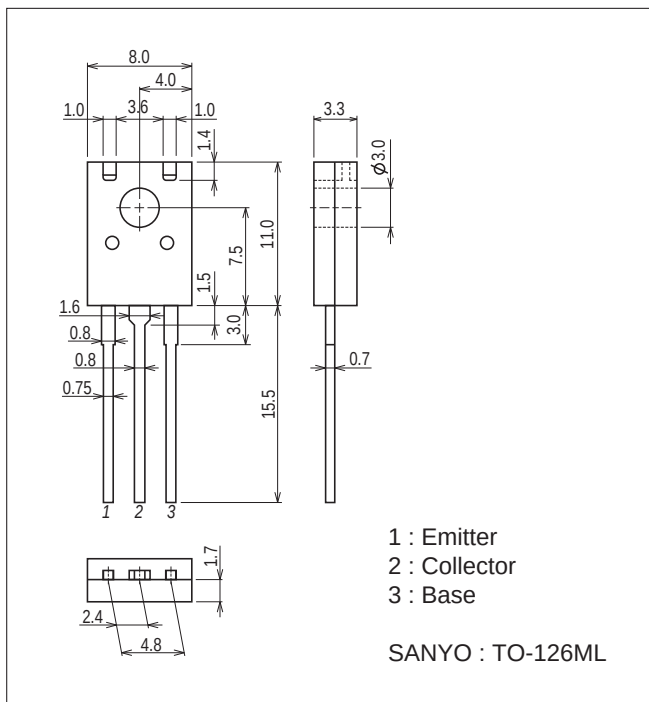
**Absolute Maximum Ratings** at  $T_a=25^\circ C$

| Parameter                    | Symbol    | Conditions       | Ratings     | Unit       |
|------------------------------|-----------|------------------|-------------|------------|
| Collector-to-Base Voltage    | $V_{CBO}$ |                  | 220         | V          |
| Collector-to-Emitter Voltage | $V_{CEO}$ |                  | 200         | V          |
| Emitter-to-Base Voltage      | $V_{EBO}$ |                  | 8           | V          |
| Collector Current            | $I_C$     |                  | 0.7         | A          |
| Collector Current (Pulse)    | $I_{CP}$  |                  | 2           | A          |
| Collector Dissipation        | $P_C$     |                  | 1.5         | W          |
|                              |           | $T_c=25^\circ C$ | 10          | W          |
| Junction Temperature         | $T_j$     |                  | 150         | $^\circ C$ |
| Storage Temperature          | $T_{stg}$ |                  | -55 to +150 | $^\circ C$ |

### Package Dimensions

unit : mm (typ)

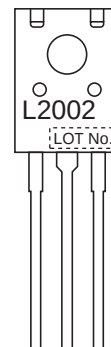
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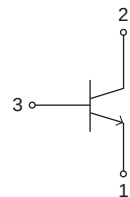
### Product & Package Information

- Package : TO-126ML
- JEITA, JEDEC : TO-126
- Minimum Packing Quantity : 200 pcs./bag

### Marking



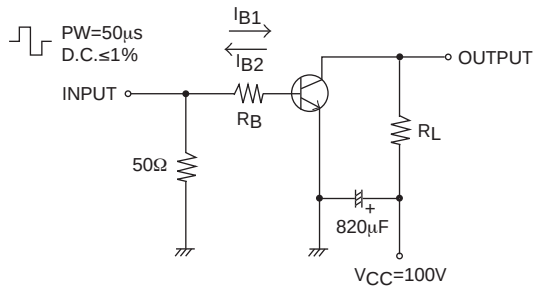
### Electrical Connection



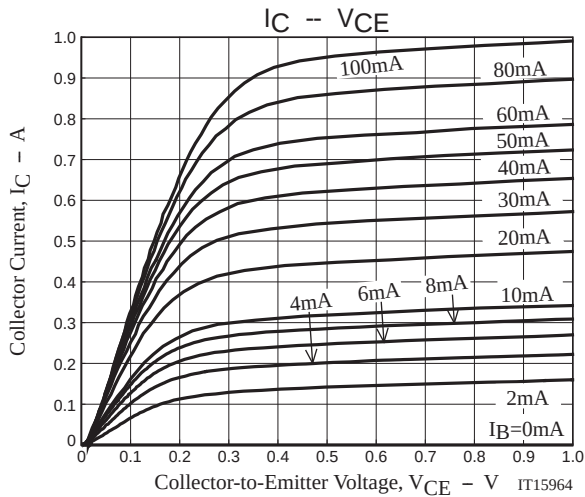
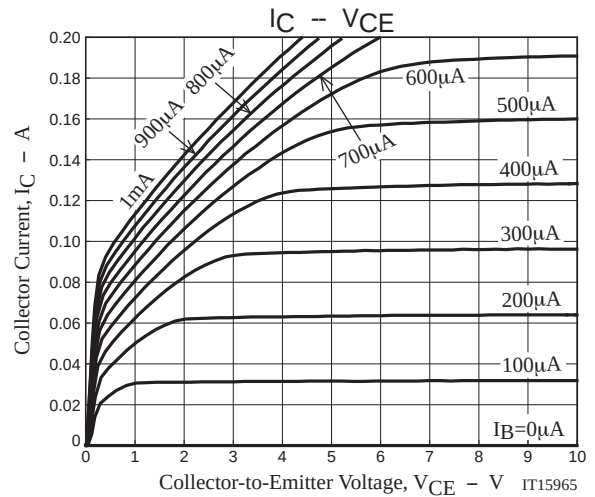
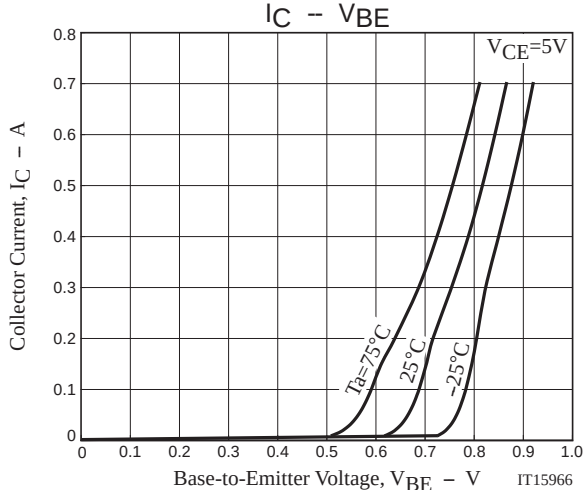
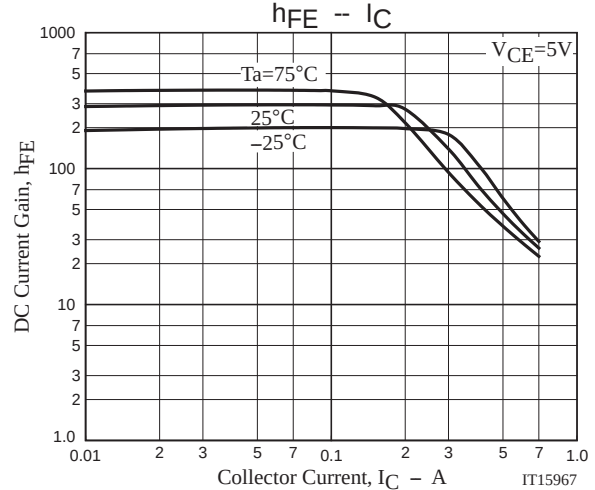
Electrical Characteristics at  $T_a=25^\circ\text{C}$

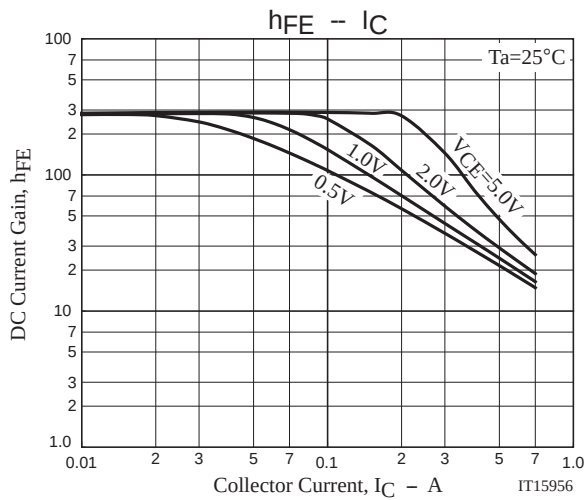
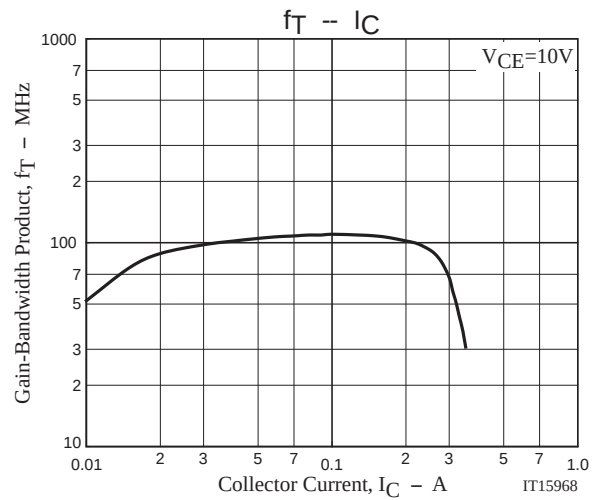
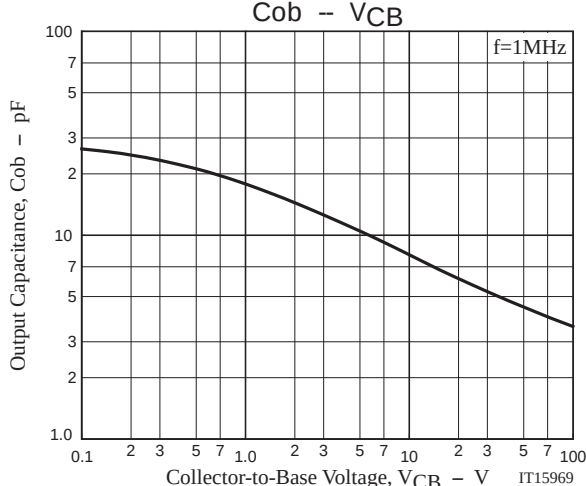
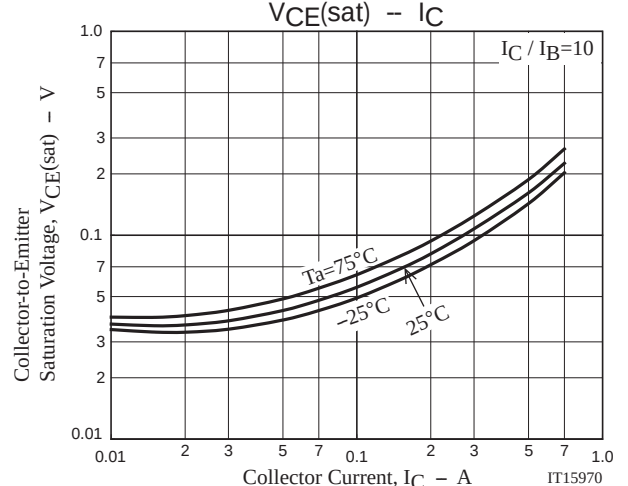
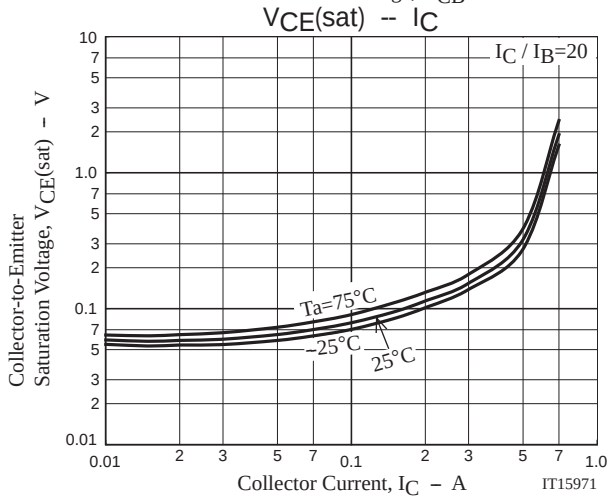
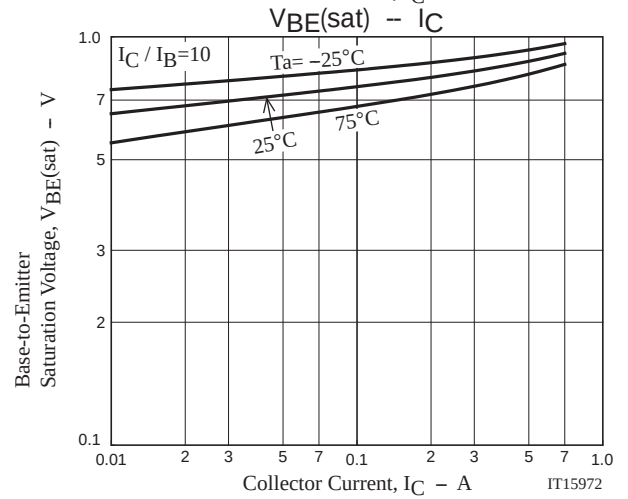
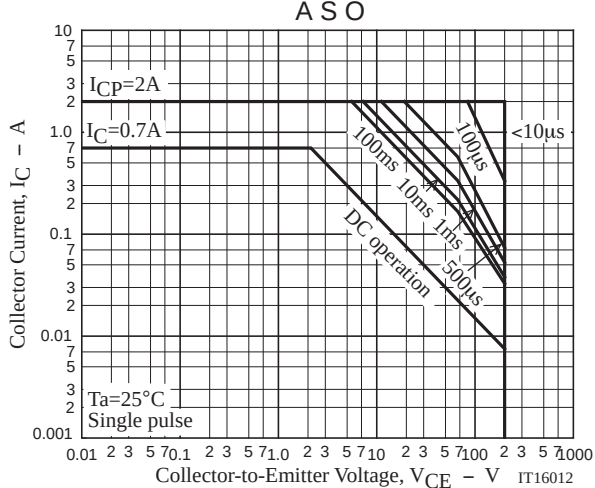
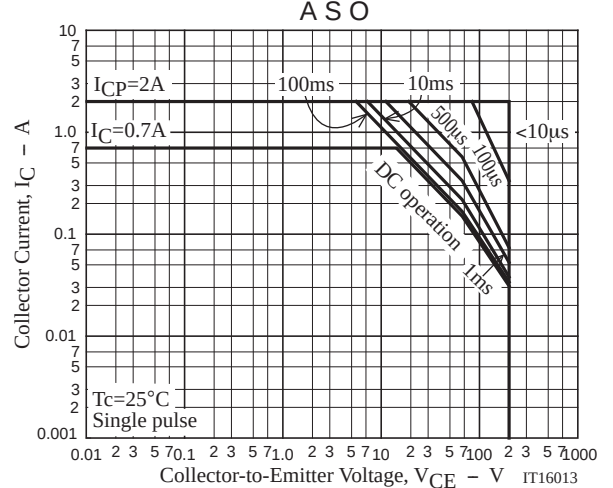
| Parameter                               | Symbol        | Conditions                            | Ratings |      |     | Unit          |
|-----------------------------------------|---------------|---------------------------------------|---------|------|-----|---------------|
|                                         |               |                                       | min     | typ  | max |               |
| Collector Cutoff Current                | $I_{CBO}$     | $V_{CB}=100\text{V}, I_E=0\text{A}$   |         |      | 1   | $\mu\text{A}$ |
| Emitter Cutoff Current                  | $I_{EBO}$     | $V_{EB}=4\text{V}, I_C=0\text{A}$     |         |      | 1   | $\mu\text{A}$ |
| DC Current Gain                         | $h_{FE}$      | $V_{CE}=5\text{V}, I_C=100\text{mA}$  | 200     |      | 560 |               |
| Gain-Bandwidth Product                  | $f_T$         | $V_{CE}=10\text{V}, I_C=100\text{mA}$ |         | 120  |     | MHz           |
| Output Capacitance                      | $C_{ob}$      | $V_{CB}=10\text{V}, f=1\text{MHz}$    |         | 9    |     | pF            |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=0.35\text{A}, I_B=35\text{mA}$   |         | 125  | 220 | mV            |
| Base-to-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=0.35\text{A}, I_B=35\text{mA}$   |         | 0.82 | 1.2 | V             |
| Collector-to-Base Breakdown Voltage     | $V_{(BR)CBO}$ | $I_C=10\mu\text{A}, I_E=0\text{A}$    | 220     |      |     | V             |
| Collector-to-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | $I_C=1\text{mA}, R_{BE}=\infty$       | 200     |      |     | V             |
| Emitter-to-Base Breakdown Voltage       | $V_{(BR)EBO}$ | $I_E=10\mu\text{A}, I_C=0\text{A}$    | 8       |      |     | V             |
| Turn-On Time                            | $t_{on}$      | See specified Test Circuit.           |         | 50   |     | ns            |
| Storage Time                            | $t_{stg}$     | See specified Test Circuit.           |         | 2    |     | $\mu\text{s}$ |
| Fall Time                               | $t_f$         | See specified Test Circuit.           |         | 70   |     | ns            |

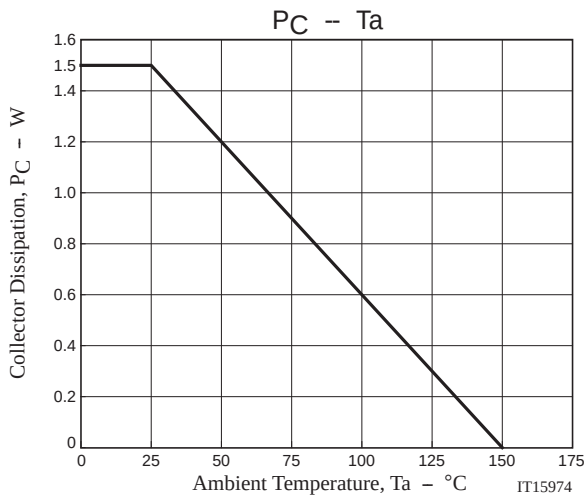
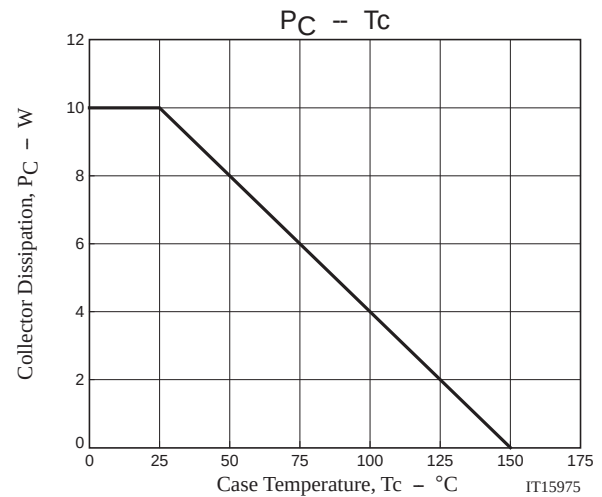
Switching Time Test Circuit



$$I_C=10I_{B1}=-10I_{B2}=0.3\text{A}$$







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