

UNRF2A7

Silicon NPN epitaxial planar transistor

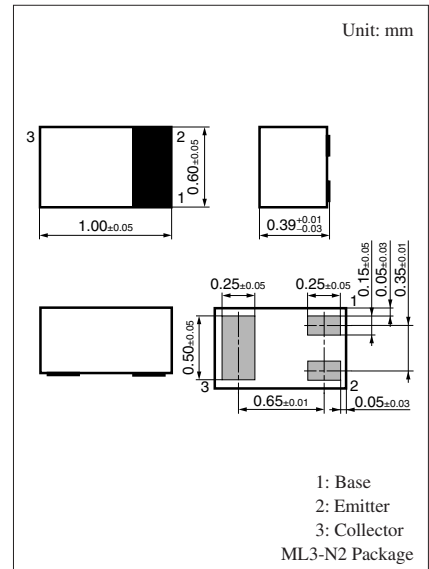
For digital circuits

■ Features

- Suitable for high-density mounting and downsizing of the equipment for Ultraminiature leadless package
0.6 mm × 1.0 mm (height 0.39 mm)

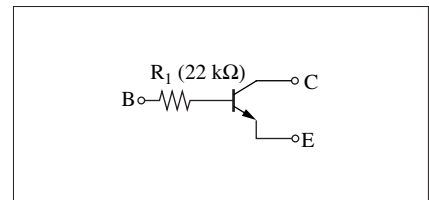
■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Rating | Unit |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | V_{CBO} | 50 | V |
| Collector-emitter voltage (Base open) | V_{CEO} | 50 | V |
| Collector current | I_C | 80 | mA |
| Total power dissipation | P_T | 100 | mW |
| Junction temperature | T_j | 125 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +125 | $^\circ\text{C}$ |



Marking Symbol: 1Z

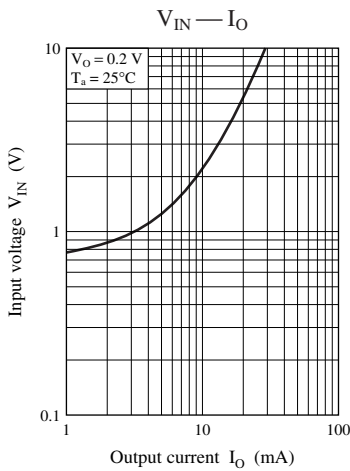
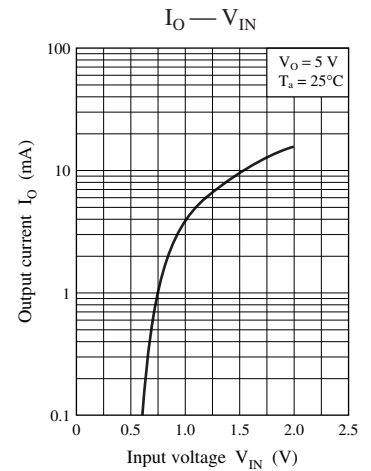
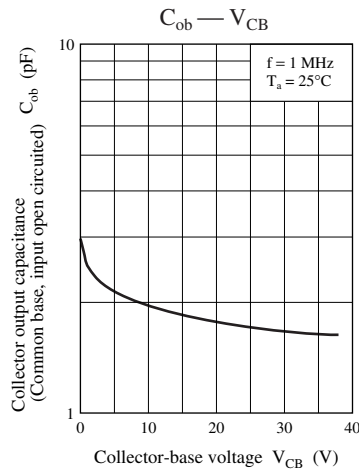
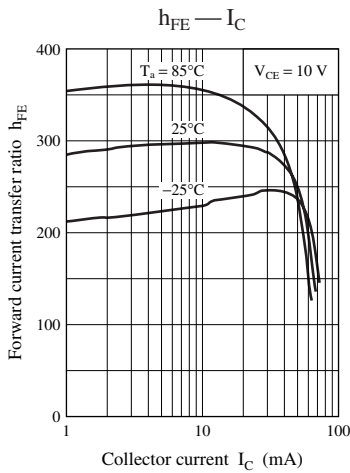
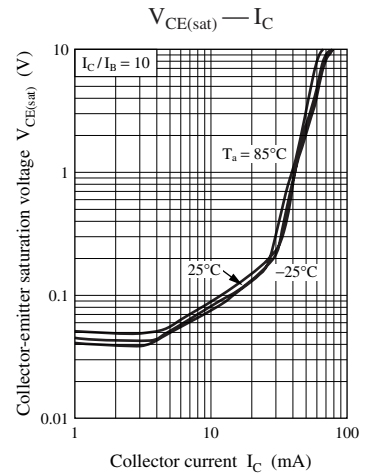
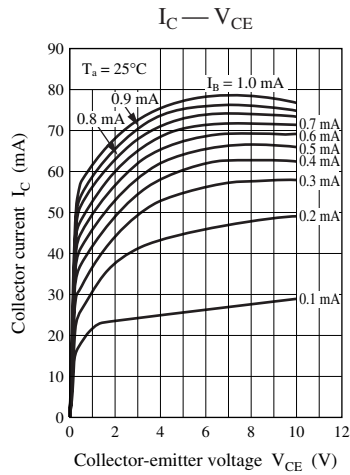
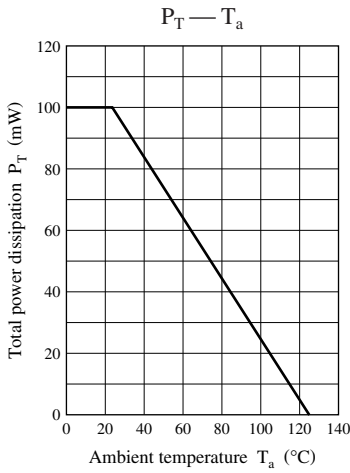
Internal Connection



■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|--|---------------|--|------|-----|------|------------------|
| Collector-base voltage (Emitter open) | V_{CBO} | $I_C = 10 \mu\text{A}$, $I_E = 0$ | 50 | | | V |
| Collector-emitter voltage (Base open) | V_{CEO} | $I_C = 2 \text{ mA}$, $I_B = 0$ | 50 | | | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = 50 \text{ V}$, $I_E = 0$ | | | 0.1 | μA |
| Collector-emitter cutoff current (Base open) | I_{CEO} | $V_{CE} = 50 \text{ V}$, $I_B = 0$ | | | 0.5 | μA |
| Emitter-base cutoff current (Collector open) | I_{EBO} | $V_{EB} = 6 \text{ V}$, $I_C = 0$ | | | 0.01 | mA |
| Forward current transfer ratio | h_{FE} | $V_{CE} = 10 \text{ V}$, $I_C = 5 \text{ mA}$ | 160 | | 460 | — |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 10 \text{ mA}$, $I_B = 0.3 \text{ mA}$ | | | 0.25 | V |
| Output voltage high level | V_{OH} | $V_{CC} = 5 \text{ V}$, $V_B = 0.5 \text{ V}$, $R_L = 1 \text{ k}\Omega$ | 4.9 | | | V |
| Output voltage low level | V_{OL} | $V_{CC} = 5 \text{ V}$, $V_B = 2.5 \text{ V}$, $R_L = 1 \text{ k}\Omega$ | | | 0.2 | V |
| Input resistance | R_1 | | -30% | 22 | +30% | $\text{k}\Omega$ |
| Transition frequency | f_T | $V_{CB} = 10 \text{ V}$, $I_E = -2 \text{ mA}$, $f = 200 \text{ MHz}$ | | 150 | | MHz |

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.



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