

# DRCQA44E

## Silicon NPN epitaxial planar type

For digital circuits

Complementary to DRAQA44E

DRC3A44E in USSMini3 type package

### ■ Features

- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- Contributes to miniaturization of sets, reduction of component count.
- Eco-friendly Halogen-free package

### ■ Packaging

Embossed type (Thermo-compression sealing): 10000 pcs / reel (standard)

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

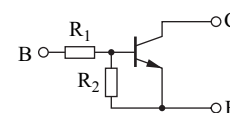
| Parameter                             | Symbol    | Rating      | Unit             |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | 50          | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | 50          | V                |
| Collector current                     | $I_C$     | 80          | mA               |
| Total power dissipation               | $P_T$     | 100         | mW               |
| Junction temperature                  | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature                   | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

### ■ Package

- Code  
USSMini3-F1-B
- Pin Name  
1: Base  
2: Emitter  
3: Collector

### ■ Marking Symbol: JY

### ■ Internal Connection

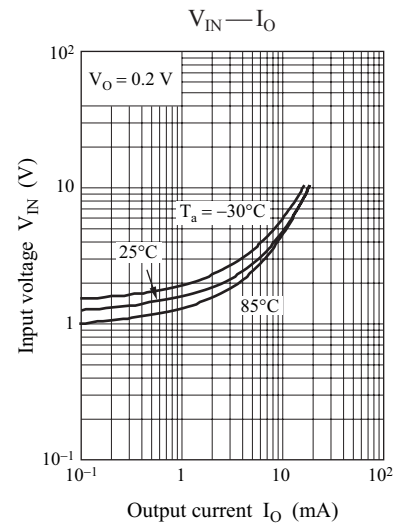
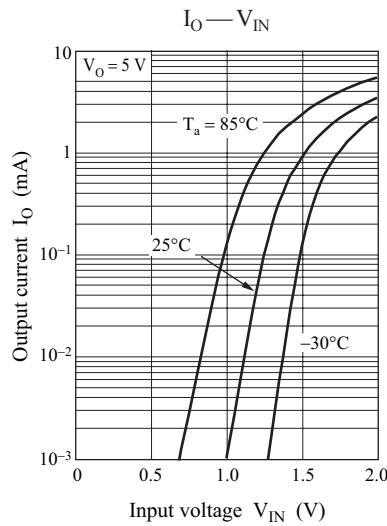
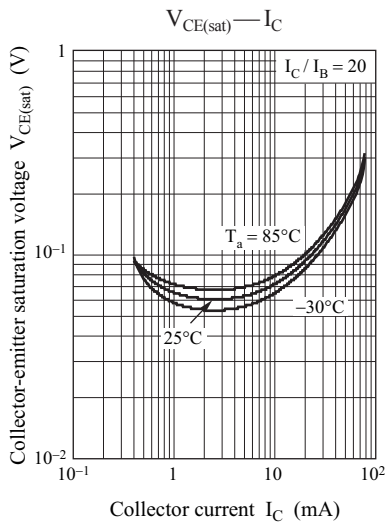
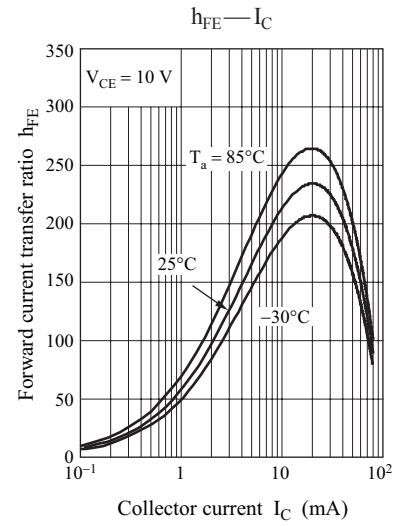
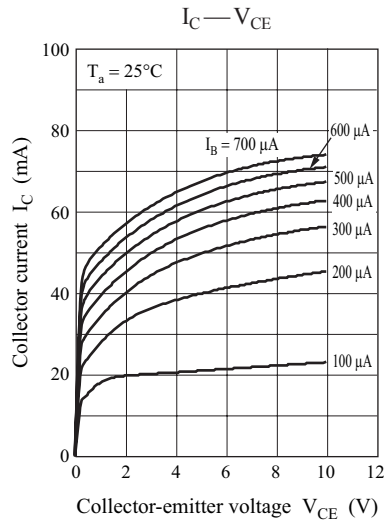
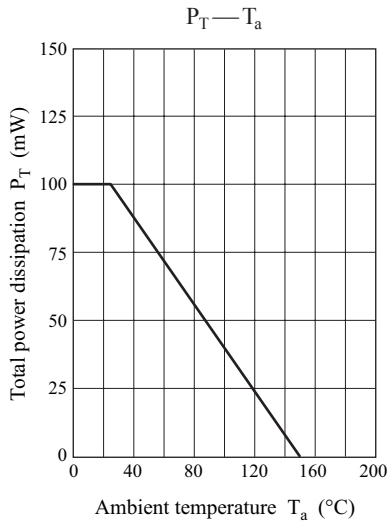


| Resistance value | $R_1$ | 47 | $\text{k}\Omega$ |
|------------------|-------|----|------------------|
|                  | $R_2$ | 47 | $\text{k}\Omega$ |

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

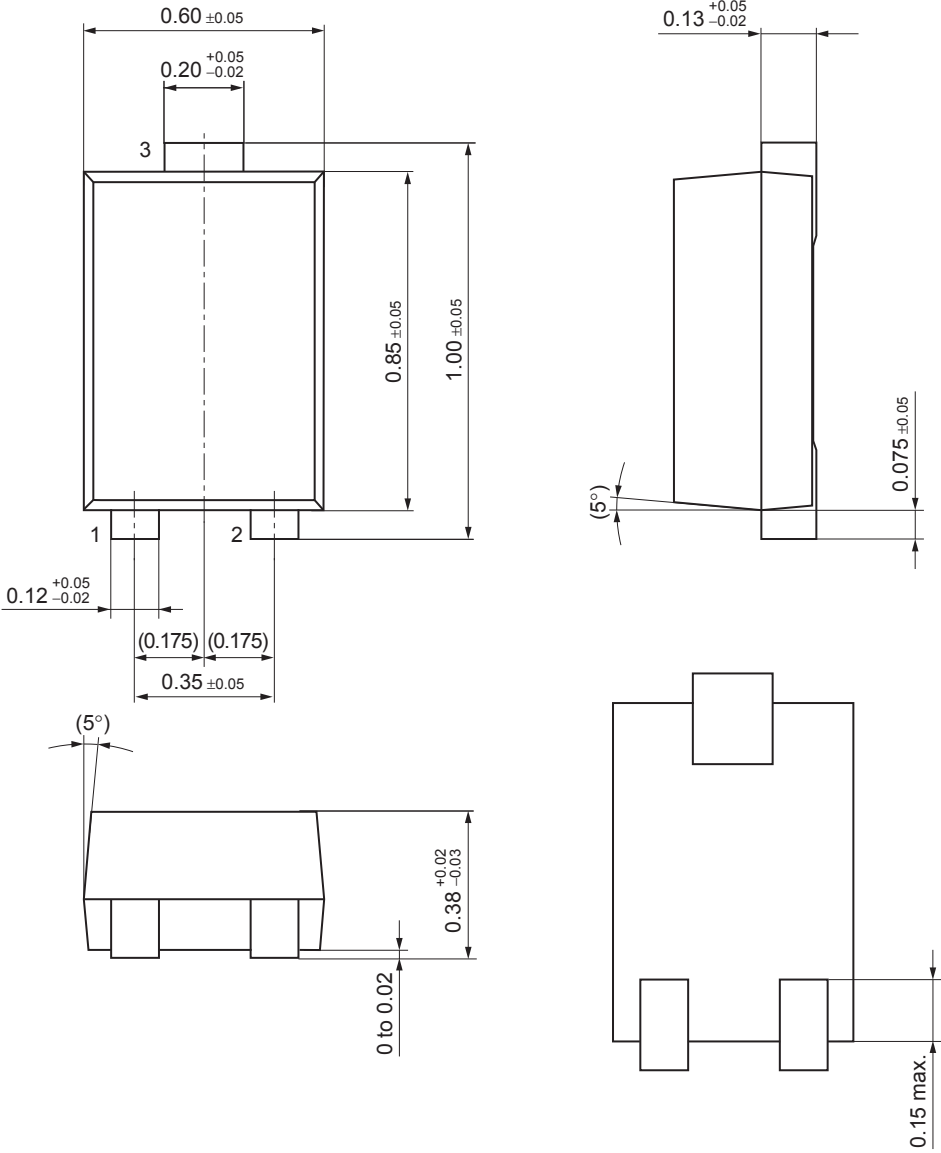
| Parameter                                    | Symbol        | Conditions                                   | Min  | Typ | Max  | Unit             |
|--|---------------|--|------|-----|------|------------------|
| Collector-base voltage (Emitter open)        | $V_{CBO}$     | $I_C = 10 \mu\text{A}, I_E = 0$              | 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  | $\mu\text{A}$    |
| Collector-emitter cutoff current (Base open) | $I_{CEO}$     | $V_{CE} = 50 \text{V}, I_B = 0$              |      |     | 0.5  | $\mu\text{A}$    |
| Emitter-base cutoff current (Collector open) | $I_{EBO}$     | $V_{EB} = 6 \text{V}, I_C = 0$               |      |     | 0.1  | mA               |
| Forward current transfer ratio               | $h_{FE}$      | $V_{CE} = 10 \text{V}, I_C = 5 \text{mA}$    | 80   |     |      | —                |
| Collector-emitter saturation voltage         | $V_{CE(sat)}$ | $I_C = 10 \text{mA}, I_B = 0.5 \text{mA}$    |      |     | 0.25 | V                |
| Input voltage (ON)                           | $V_{I(on)}$   | $V_{CE} = 0.2 \text{V}, I_C = 5 \text{mA}$   | 3.6  |     |      | V                |
| Input voltage (OFF)                          | $V_{I(off)}$  | $V_{CE} = 5 \text{V}, I_C = 100 \mu\text{A}$ |      |     | 0.8  | V                |
| Input resistance                             | $R_1$         |  | -30% | 47  | +30% | $\text{k}\Omega$ |
| Resistance ratio                             | $R_1 / R_2$   |  | 0.8  | 1.0 | 1.2  | —                |

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



USSMini3-F1-B

Unit: mm



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