

# UP05C8PG

Silicon NPN epitaxial planar type (Tr)  
 Silicon epitaxial planar type (CCD load device)

For CCD output circuits

■ Features

- Two elements incorporated into one package (Tr + CCD load device)
- Costs can be reduced through downsizing of the equipment and reduction of the number of parts.

■ Basic Part Number

- 2SC3932G + CCD load device

■ Package

- Code  
SSMini6-F2
- Pin Name

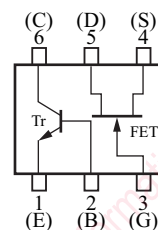
|            |              |
|------------|--------------|
| 1: Emitter | 4: Source    |
| 2: Base    | 5: Drain     |
| 3: Gate    | 6: Collector |

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

|                 | Parameter                             | Symbol    | Rating      | Unit             |
|-----------------|---------------------------------------|-----------|-------------|------------------|
| Tr              | Collector-base voltage (Emitter open) | $V_{CBO}$ | 30          | V                |
|                 | Collector-emitter voltage (Base open) | $V_{CEO}$ | 20          | V                |
|                 | Emitter-base voltage (Collector open) | $V_{EBO}$ | 3           | V                |
|                 | Collector current                     | $I_C$     | 50          | mA               |
| CCD load device | Limiting element voltage              | $V_{max}$ | 40          | V                |
|                 | Limiting element current              | $I_{max}$ | 10          | mA               |
|                 | Total power dissipation *             | $P_T$     | 125         | mW               |
| Overall         | Junction temperature                  | $T_j$     | 125         | $^\circ\text{C}$ |
|                 | Storage temperature                   | $T_{stg}$ | -55 to +125 | $^\circ\text{C}$ |

■ Marking Symbol: 4X

■ Internal Connection



Note) \* : Measuring on substrate at 17 mm × 10 mm × 1 mm

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

• Tr

| Parameter                             | Symbol    | Conditions  | Min | Typ   | Max | Unit |
|---------------------------------------|-----------|---|-----|-------|-----|------|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | $I_C = 100 \mu\text{A}, I_E = 0$                                | 30  |       |     | V    |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | $I_E = 10 \mu\text{A}, I_C = 0$                                 | 3   |       |     | V    |
| Base-emitter voltage                  | $V_{BE}$  | $V_{CE} = 10 \text{V}, I_C = 2 \text{mA}$                       |     | 720   |     | mV   |
| Forward current transfer ratio        | $h_{FE}$  | $V_{CE} = 10 \text{V}, I_C = 2 \text{mA}$                       | 100 |       | 250 | —    |
| Transition frequency *                | $f_T$     | $V_{CB} = 10 \text{V}, I_E = -15 \text{mA}, f = 200 \text{MHz}$ |     | 1 300 |     | MHz  |
| Power gain                            | $G_P$     | $V_{CB} = 10 \text{V}, I_E = -1 \text{mA}, f = 100 \text{MHz}$  |     | 20    |     | dB   |

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

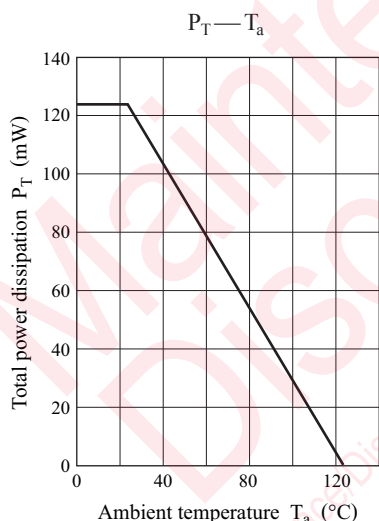
\*: Pulse measurement

• CCD Load Device

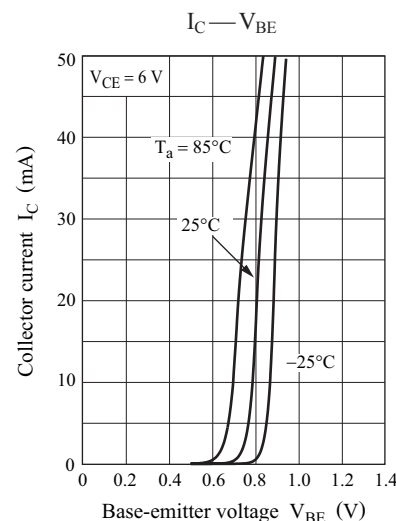
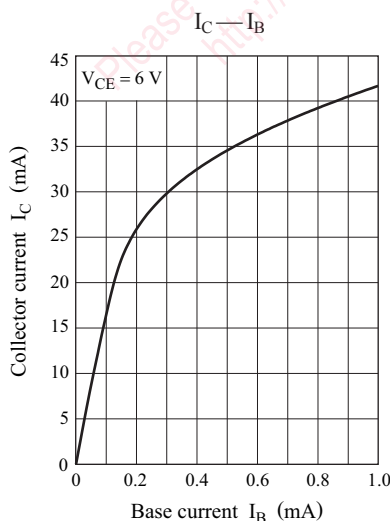
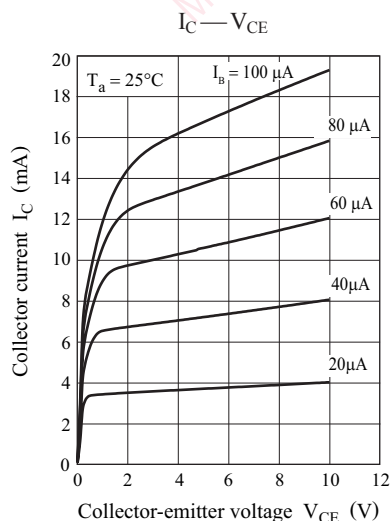
| Parameter         | Symbol | Conditions                     | Min | Typ  | Max | Unit      |
|-------------------|--------|--------------------------------|-----|------|-----|-----------|
| Pinch off current | $I_P$  | $V_{DS} = 8 \text{V}, V_G = 0$ | 5.0 |      | 7.0 | mA        |
| Output impedance  | $Z_O$  | $V_{DS} = V, V_G = 0$          |     | 0.02 |     | $M\Omega$ |

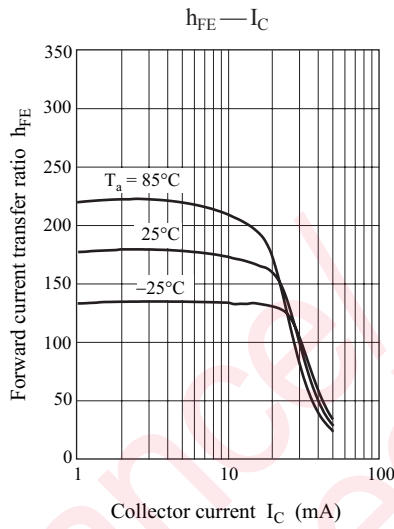
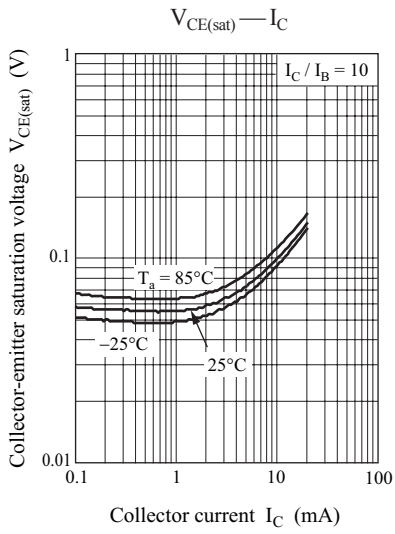
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Common characteristics chart

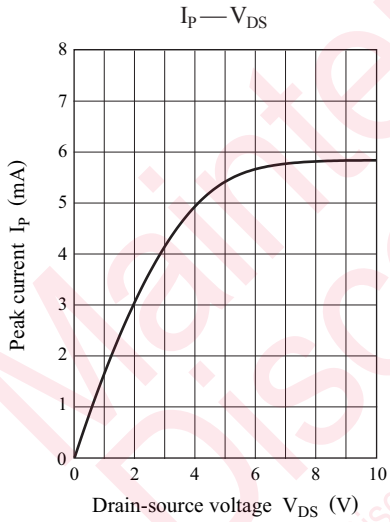


Characteristics charts of Tr



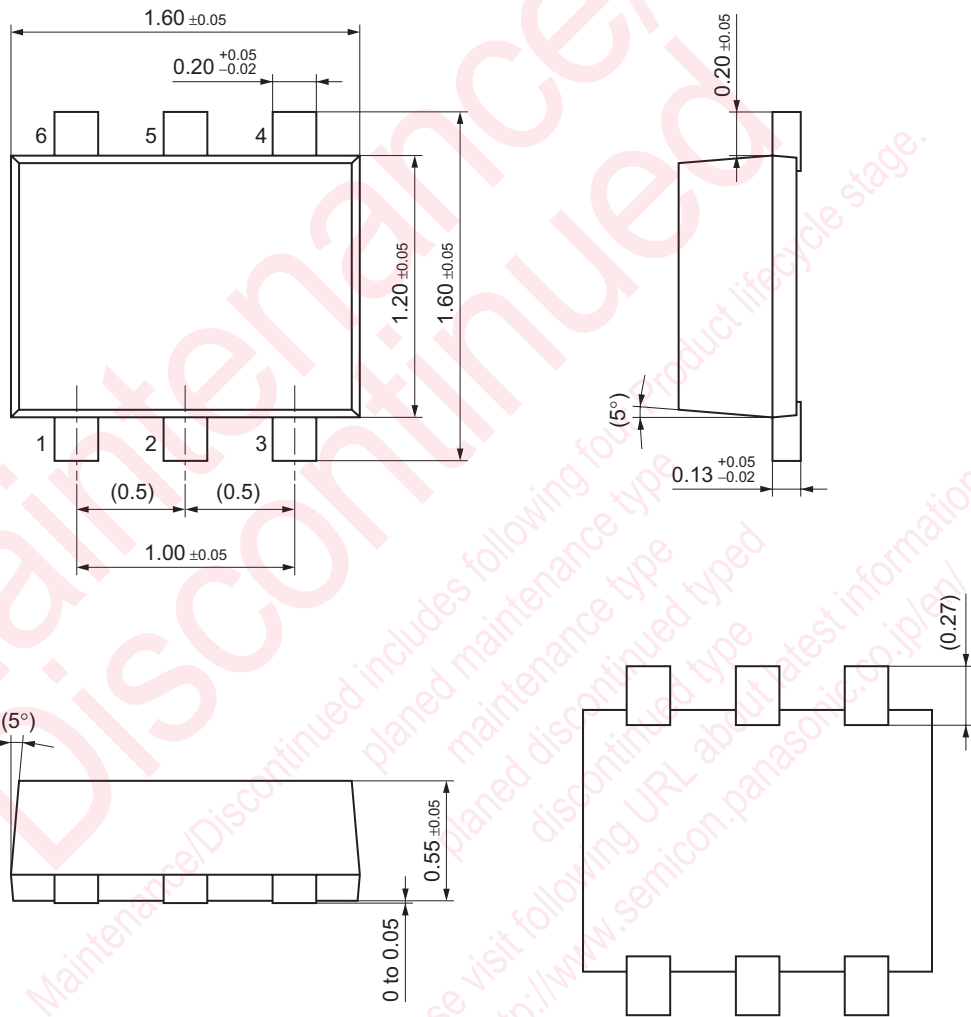


Characteristics charts of CCD load device



SSMini6-F2

Unit: mm



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