

IS2701-1



ISOCOM

COMPONENTS

HIGH DENSITY MOUNTING PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS



DESCRIPTION

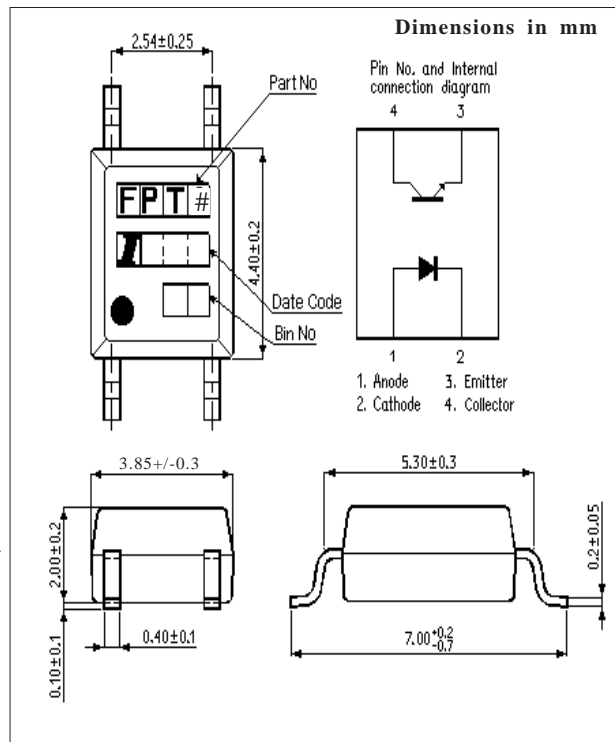
The IS2701-1 is an optically coupled isolator consisting of an infrared light emitting diode and NPN silicon photo transistor in a space efficient dual in line plastic package.

FEATURES

- Marked as FPT1.
- Current Transfer Ratio MIN. 50%
- Isolation Voltage ($3.75kV_{RMS}$, $5.3kV_{PK}$)
- All electrical parameters 100% tested
- Drop in replacement for NEC PS2701-1

APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances



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ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)

Storage Temperature _____ -55°C to +150°C
 Operating Temperature _____ -55°C to +100°C
 Lead Soldering Temperature
 (1/16 inch (1.6mm) from case for 10 secs) 260°C

INPUT DIODE

Forward Current _____ 50mA
 Reverse Voltage _____ 6V
 Power Dissipation _____ 70mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO} _____ 80V
 Emitter-collector Voltage BV_{ECO} _____ 6V
 Collector Current _____ 50mA
 Power Dissipation _____ 150mW

POWER DISSIPATION

Total Power Dissipation _____ 170mW
 (derate linearly 2.26mW/°C above 25°C)

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

| PARAMETER | | MIN | TYP | MAX | UNITS | TEST CONDITION |
|---|--|--------------------|-----|-----------|---------------|-------------------------------------|
| Input | Forward Voltage (V_F) | | 1.2 | 1.4 | V | $I_F = 20\text{mA}$ |
| | Reverse Current (I_R) | | | 10 | μA | $V_R = 4\text{V}$ |
| Output | Collector-emitter Breakdown (BV_{CEO}) | 80 | | | V | $I_C = 0.1\text{mA}$ |
| | Emitter-collector Breakdown (BV_{ECO}) | 6 | | | V | $I_E = 10\mu\text{A}$ |
| | Collector-emitter Dark Current (I_{CEO}) | | | 100 | nA | $V_{CE} = 20\text{V}$ |
| Coupled | Current Transfer Ratio (CTR) | 50 | | 600 | % | $5\text{mA} I_F, 5\text{V} V_{CE}$ |
| | Optional CTR Grades: IS2701-1A | 80 | | 160 | % | $5\text{mA} I_F, 5\text{V} V_{CE}$ |
| | IS2701-1B | 130 | | 260 | % | $5\text{mA} I_F, 5\text{V} V_{CE}$ |
| | IS2701-1C | 200 | | 400 | % | $5\text{mA} I_F, 5\text{V} V_{CE}$ |
| | IS2701-1D | 300 | | 600 | % | $5\text{mA} I_F, 5\text{V} V_{CE}$ |
| | IS2701-1BL | 200 | | | % | $5\text{mA} I_F, 5\text{V} V_{CE}$ |
| | Collector-emitter Saturation Voltage $V_{CE(SAT)}$ | | | 0.2 | V | $20\text{mA} I_F, 1\text{mA} I_C$ |
| Input to Output Isolation Voltage V_{ISO} | | 3750 | | V_{RMS} | | See note 1 |
| | | 5300 | | | V_{PK} | See note 1 |
| Input-output Isolation Resistance R_{ISO} | | 5×10^{10} | | | Ω | $V_{IO} = 500\text{V}$ (note 1) |
| Output Rise Time tr | | | 4 | 18 | μs | $V_{CE} = 2\text{V}$, |
| Output Fall Time tf | | | 3 | 18 | μs | $I_C = 2\text{mA}, R_L = 100\Omega$ |

Note 1 Measured with input leads shorted together and output leads shorted together.

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