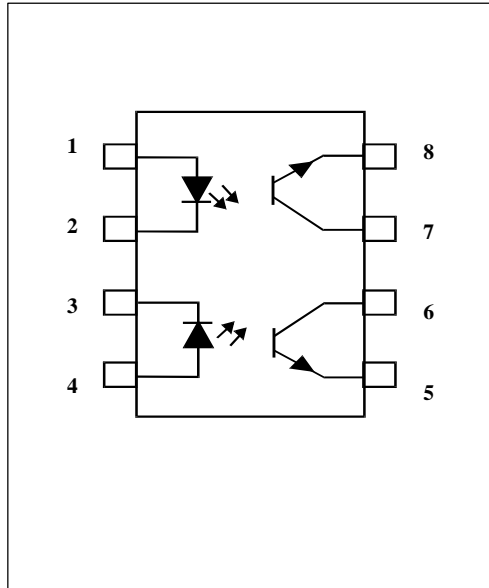


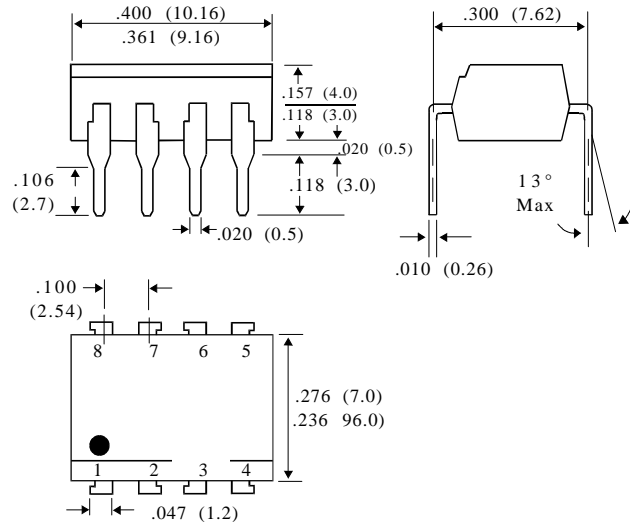


OPTICALLY COUPLED ISOLATOR TRANSISTOR OUTPUT

SCHEMATIC



PACKAGE DIMENSIONS INCHES (MM)



DESCRIPTION

The IS829 is an optically coupled isolator consisting of Gallium Arsenide infrared emitting diodes and NPN silicon phototransistors mounted in a standard 8-pin dual-in-line package with two channels per unit.

FEATURES

- High Current Transfer Ratio 50% Min at $I_F = 5\text{mA}$, $V_{CE} = 5\text{V}$
- Also available in single, quad package
- High Isolation Voltage - 5000 V_{RMS}

ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise noted)

| | |
|--|-----------------|
| Storage Temperature | -55°C to +125°C |
| Operating Temperature | -55°C to +100°C |
| Lead Soldering Temperature (2mm from case for 10 seconds) | 260°C |
| Input-to-Output Isolation Voltage | 5000 V_{RMS} |

INPUT DIODE

| | |
|---|------|
| Forward D.C. Current | 50mA |
| Reverse D.C. Voltage | 6V |
| Peak Forward Current (p.w. $\leq 100\mu\text{s}$, duty ratio 0.001) | 1A |
| Power Dissipation (derate linearly 0.93mW/°C above 25°C) | 70mW |

OUTPUT TRANSISTOR

| | |
|---|-------|
| Collector-emitter Voltage BV_{CEO} | 35V |
| Power Dissipation (derate linearly 2.00mW/°C above 25°C) | 150mW |

PACKAGE

| | |
|---|-------|
| Total Power Dissipation (derate linearly 2.27mW/°C above 25°C) | 170mW |
|---|-------|

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ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

| Parameter | | Min. | Typ | Max. | Units | Test Condition |
|--------------------------------------|---|--------------------|-----------|---------------|----------------------------|---|
| Input | Forward Voltage (V_F) | | | 1.4 | Volt | $I_F = 20 \text{ mA}$ |
| | Reverse Current (I_R) | | | 10 | μA | $V_R = 4\text{V}$ |
| Output | Collector-emitter Voltage (BV_{CEO}) | 35 | | | Volt | $I_C = 1\text{mA}$ |
| | Emitter-collector Voltage (BV_{ECO}) | 6 | | | Volt | $I_E = 0.1 \text{ mA}$ |
| | Collector-emitter Dark Current (I_{CEO}) | | | 100 | nA | $V_{CE} = 20 \text{ V}$ |
| Coupled | DC Current Transfer Ratio (CTR) | 50 | | 400 | % | $I_F = 5\text{mA}, V_{CE} = 5\text{V}$ |
| | Collector-emitter Saturation Voltage $V_{CE}(\text{Sat})$ | | 0.1 | 0.2 | Volt | $I_F = 20 \text{ mA}, I_C = 1 \text{ mA}$ |
| | Floating Capacitance (C_F) | | 0.6 | 1.0 | pf | $V = 0, f = 1 \text{ mhz}$ |
| | Input-to-Output Isolation Resistance R_{iso} | 5×10^{10} | 10^{11} | | ohm | $V_{IO} = 500\text{V}$ (see note 1) |
| | Inout to Output Isolation Voltage | 5000 | | | V_{RMS} | (note 1)($t = 1 \text{ Min}$) |
| | Output Turn - on Time (t_{on}) | | 3.0 | | μS | $I_C = 2\text{mA}, V_{CC} = 10\text{V}$ |
| Output Turn - off Time (t_{off}) | | 2.5 | | μS | $R_L = 100\Omega$ Fig 1 | |

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

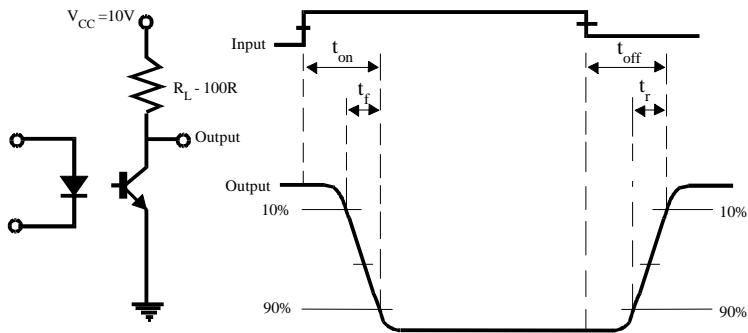


FIG 1