

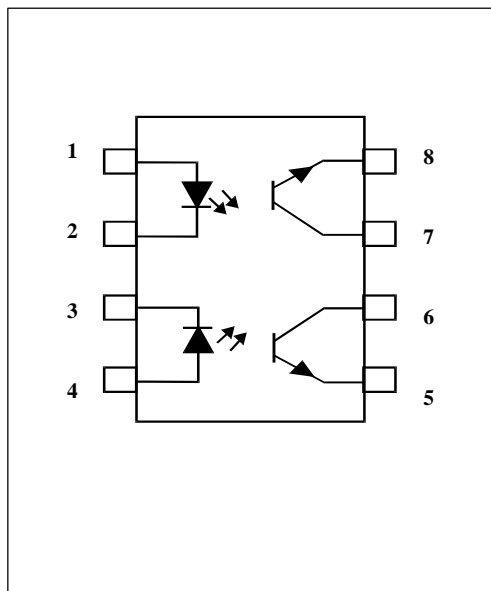


IS829

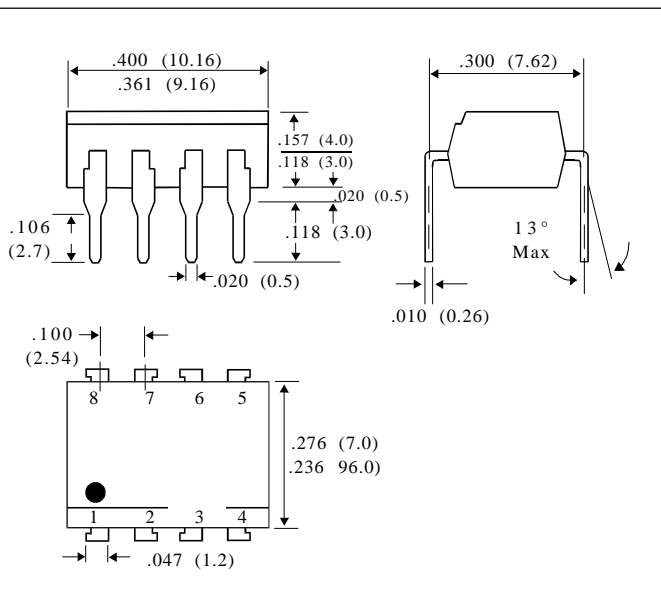
OPTICALLY COUPLED ISOLATOR TRANSISTOR OUTPUT



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.

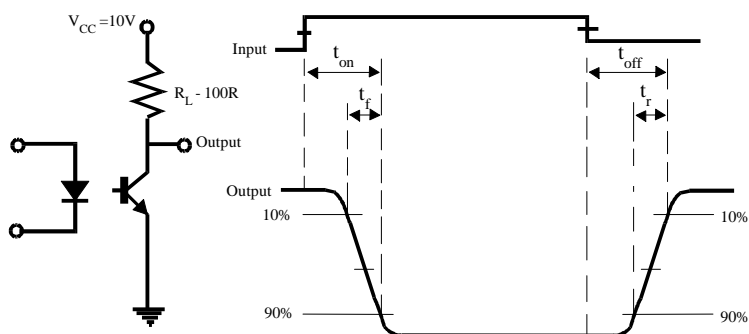


FIG 1