

FEATURES

- **Normally Closed, Single Pole Single Throw Operation**
- **Control 350 VAC or DC Voltage**
- **Switch 100 mA Loads**
- **LED Control Current, 1.5 mA**
- **Low ON-Resistance**
- **dv/dt, >500 V/ms**
- **Isolation Test Voltage, 3750 VAC_{RMS}**
- **Current Limiting**
- **Underwriters Lab File # E52744**

APPLICATIONS

- **Telephone Switch Hook**
- **High Voltage Test Equipment**
- **TRIAC Driver**
- **Motor Control**
- **Industrial Control Systems**

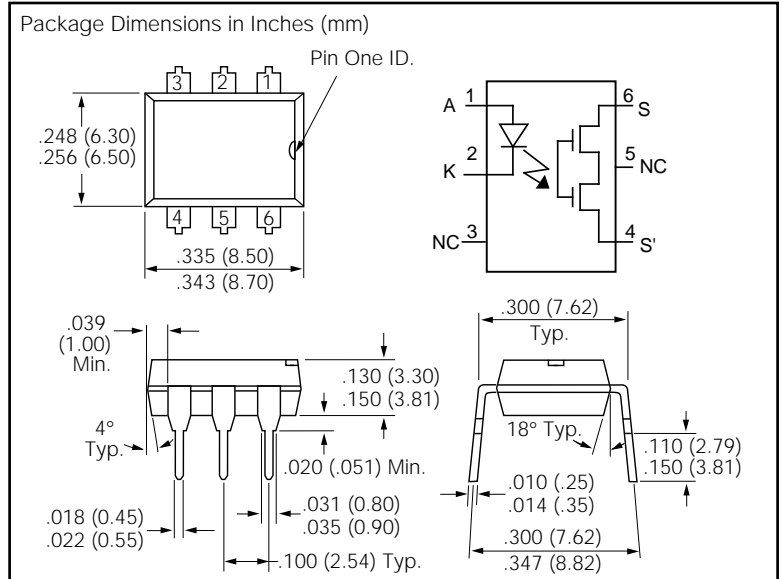
DESCRIPTION

The LH1298 is a single pole single throw (SPST), normally closed (NC), solid state relay. The relay can control AC or DC loads currents up to 100 mA, with a supply voltage up to 350 V. The device is packaged in a six pin 0.3 inch dual-in line package. This package offers an insulation dielectric withstand of 3750 VAC_{RMS}.

The coupler consists of a AlGaAs LED that is optically coupled to a dielectrically isolated monolithic integrated circuit. The IC chip consists of a photodiode array, control circuitry and high voltage DMOS transistors. The typical ON resistance between the output terminals is 30 Ω at 0 mA LED current. The switch offers low off-state leakage current at LED current of 5 mA or greater. There is on board output current limiting circuitry.

Maximum Ratings

Terminal Voltage	350 V
Terminal Current	100 mA
LED Forward Current	60 mA
LED Reverse Current	6 mA
Isolation Test Voltage	3750 VAC _{RMS}
Isolation Resistance	
V _{IO} =500 V, T _A =25°C	≥10 ¹² Ω
V _{IO} =500 V, T _A =100°C	≥10 ¹¹ Ω
Operating Temperature Range	-40 to +85°C
Storage Temperature Range	-40 to +150°C
Lead Soldering Temperature	
at 260°C, 2 mm from case	5 sec.



Characteristics (T_A=25°C)

Emitter	Sym	Min.	Typ.	Max.	Units	Condition
Forward Voltage	V _F		1.25	1.5	V	I _F =10 mA
V _F Temperature Coefficient	ΔV _F /ΔT _A		-2.2		mV/°C	
Reverse Current	I _R		1	10	μA	V _R =6 V
Junction Capacitance	C _J		15		pF	V _R =0 V f=1 MHz
Dynamic Resistance	ΔV _F /ΔI _F		6		W	I _F =10 mA
Switching Time	t _R , t _F		1		μs	I _F =10 mA
Detector						
Output Break-down Voltage	V _B	350			V	I _B =50 μA
Output OFF-State Leakage Current	I _{T(OFF)}		0.1	1	μA	V _T =100 V, I _F =5 mA
			0.1	5	μA	V _T =300 V, I _F =2.5 mA
Terminal Capacitance	C _T		24		pF	V _T =0, f= MHz
Current Limit			150		mA	
Package						
LED Forward Current, Turn-Off	I _{Fth}		1.5	2.5	mA	V _L =±300 V, T _A =25°C
ON-resistance	R _{ON}	20	30	50	W	I _T =±25 mA, I _F =0 mA
Turn-on Time	T _{ON}			3	ms	I _F =5 mA, V _L =50 V,
Turn-off Time	T _{OFF}			2	ms	R _L =1 kΩ