

Part Number	Description
LPD60	.25A, 60Vdc dual solid-state relay

MECHANICAL SPECIFICATION

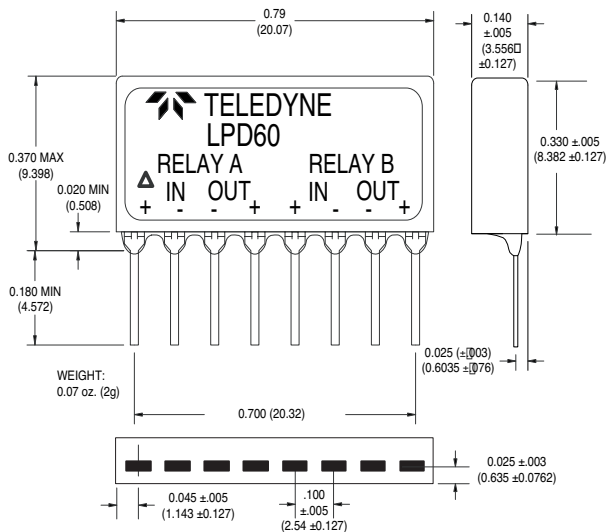


Figure 1 – LPD60 relay; dimensions in inches (mm)



FEATURES/BENEFITS

- Compact SIP plastic package
- Dual output: two relays in one package
- Current limiting output
- Low voltage drop

DESCRIPTION

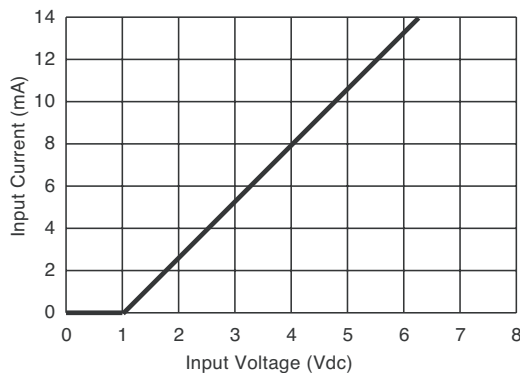
The LPD60 is a dual-output 60Vdc plastic relay. The relay utilizes optical isolation to provide excellent input-to-output isolation. The LPD60 provides a current limiting output to protect itself and associated load circuits from transient current overloads. The compact size of the LPD60 occupies minimum board space. The LPD60 is epoxy encapsulated for added ruggedness.

APPLICATIONS

- Interface applications
- Aircraft flight control systems
- A.T.E
- 28Vdc aircraft instrumentation systems

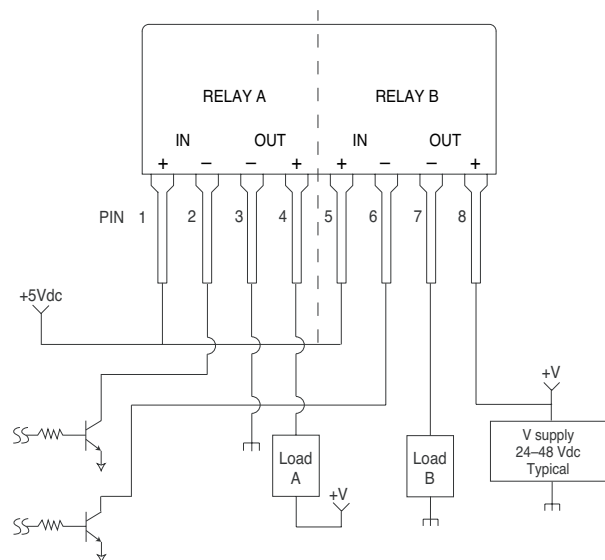
INPUT (CONTROL) SPECIFICATIONS

	Min	Max	Units
Control Voltage Range (See Note 1)	4.0	7.0	Vdc
Input Current @ 5 Vdc (See Figure 2)		12	mA
Must Turn-On Voltage	4		Vdc
Must Turn-Off Voltage		0.8	Vdc
Must Turn-Off Current		50	µAdc
Reverse Voltage	7		Vdc



INPUT CURRENT VS. INPUT VOLTAGE

Figure 2



TYPICAL WIRING DIAGRAM

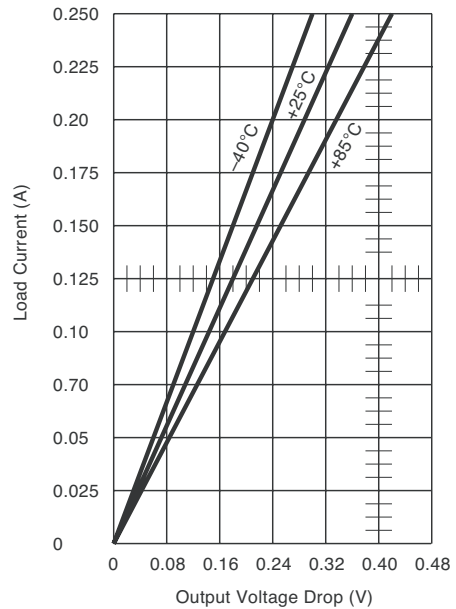
Figure 3

OUTPUT (LOAD) SPECIFICATION

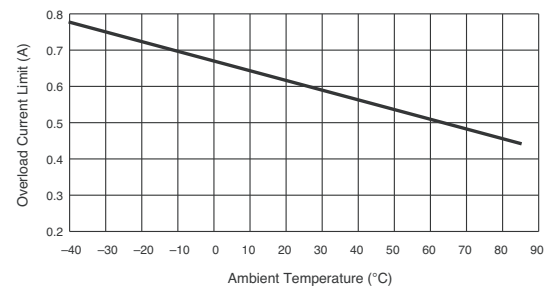
	Min	Max	Units
Load Voltage Rating		60	Vdc
Load Current Range (See Figure 6)	0.25		Adc
Transient Blocking Voltage		80	Vdc
Output Capacitance@ 25Vdc		200	pF
On-State Voltage Drop (See Figure 4)	0.5		Vdc
On Resistance		2.0	Ohm
Off-State Leakage Current (60 Vdc)		10	μAdc
Turn-On Time		2.5	ms
Turn-Off Time		1	ms
Overload Current Limit (See Figure 5)	0.8		Adc
Overload Time @ 30Vdc (See Figure 7)	0.2		sec

ENVIRONMENTAL SPECIFICATION

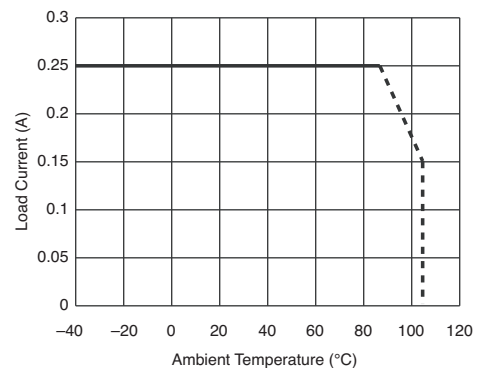
	Min	Max	Units
Operating Temperature	-40	+85	°C
Storage Temperature	-55	+100	°C
Junction Temperature		100	°C
Thermal Resistance (Junction to Ambient) each relay		120	°C/W
Shock		1500	g
Vibration		100	g
Dielectric Strength	500		Vac
Insulation Resistance (@500 Vdc)	10 ⁹		Ohm
Isolation		5	pF
Resistance to			
Soldering Heat	MIL STD 202, method 210		
Solderability	MIL STD 202, method 208		
Thermal Shock	MIL STD 202, method 107		
Altitude	55,000		ft
HAST	JDEC Test Method A110 130°C 85% RH, no power applied, 50 hours		



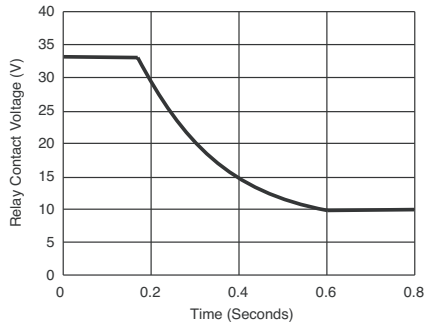
LOAD CURRENT VS. OUTPUT VOLTAGE DROP OVER TEMPERATURE
Figure 4



OVERLOAD CURRENT VS. TEMPERATURE
Figure 5



LOAD CURRENT VS. AMBIENT TEMPERATURE
Figure 6

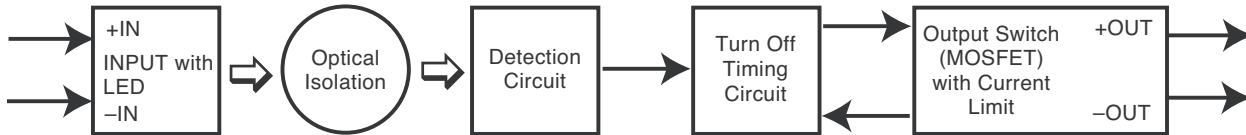


OVERLOAD VOLTAGE VS. TIME (MAX.)

Figure 7

NOTES:

1. For input voltages greater than 7 volts, use an external resistor in series with the relay input. $R_{ext.} = (V_{in} - 7 \text{ Vdc}) / 0.012 \text{ Amps}$
2. Unless otherwise specified: conformance testing is at room temperature; the input voltage is 5Vdc or zero volts as required; the output load is 48Vdc, 0.25 amp.
3. Relay input voltage transitions should be less than 1.0 millisecond.
4. Above approximately 0.6 Amps load (overload), the relay becomes current limited. In this mode of operation, the voltage across the relay contacts is: $V_{contact} \approx V_{supply} - [(0.6 \text{ Amp}) (R_{load})]$
The relay will limit current in an overload condition for the time indicated in Figure 7. Beyond this time, the overload must be removed or damage to the relay may occur.
5. Maximum load current ratings are with the relay in free air and soldered to a printed circuit board.
6. Loads may be attached to either the positive or negative output terminal.
7. Timing is measured from the input voltage transition to the 10% or 90% points on the output voltage transition.



FUNCTIONAL BLOCK DIAGRAM

Figure 8

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