Features:

- Hermetically Sealed Package
- 6A Continuous Output Current
- Low Input Current Optically Coupled
- Input/Output Isolation Tested at 600 VRMS
- Shock and Vibration Resistant
- 200°C Operation

Applications:

- Power Distribution/Switching
- Solenoid Driver
- Motor Driver

DESCRIPTION

The 53266 DC solid state relay (SSR) is designed for high temperature applications. This device is resistant to damage from severe shock and vibration, and is immune to contact related problems inherent in electro-mechanical relays. The SSR is enclosed in a hermetic metal package to ensure reliability in harsh environments. Effective isolation of 600 VRMS between control and load circuits is achieved through the use of optical coupling.

Functionally, the device operates as a single-pole single-throw, normally open (1 Form A) DC solid-state relay. The SSR is actuated by an input current of 3 to 15 mA, which can be supplied from standard logic types such as open-collector TTL. Output is provided by a power MOSFET capable of carrying a continuous current of 6 amperes.

ABSOLUTE MAXIMUM RATINGS

Output Voltage ....50 VDC
Continuous Output current.. 6 A
Peak Output Current [1] .... 10 A
Storage Temperature Range .... -65ºC to +200ºC
Operating Junction Temperature.. +210ºC
Lead Solder Temperature for 10 seconds 300ºC
Continuous Input Current ....15 mA
Peak Input Current [2] ....30 mA
Reverse Input Voltage...6 VDC

WEIGHT: .... 17 grams (typical)

RECOMMENDED OPERATING CONDITIONS:

Parameter	Symbol	Min.	Max.	Units
Output Voltage	$V_{O\ (OFF)}$		40	VDC
Continuous Output Current	$I_{O\ (ON)}$		6	A
Input Current (on)	$I_{F\ (ON)}$	3	15	mA
Input Voltage (off)	$V_{F\ (OFF)}$	0	0.5	VDC
Operating Case Temperature	T_C	-55	200	°C

ELECTRICAL SPECIFICATIONS
T_C= -55°C to +200°C unless otherwise specified

Parameter	Sym.	Min.	Typ.*	Max.	Units	Test Conditions	Notes
Output On-Resistance	$R_{(ON)}$	—	0.03	0.07	Ω	I_F = 10 mA I_O = 1 A	
Output Leakage Current	$I_{O\ (OFF)}$	—	—	1,000	μA	V_F = .5 VDC V_O = 50 VDC	
Input Forward Voltage	V_F	—	2.50	3.50	VDC	I_F = 10 mA	
Input Reverse Breakdown Voltage	V_R	6	40	—	VDC	I_R = 10 μA	
Input-Output Leakage	$I_{I\text{-}O}$	—	—	1	μA	RH $\leq$ 45%, t = 5 s $V_{I\text{-}O}$ = 600 VRMS T_C = 25°C	3, 4
Turn-On Time	t_{ON}	—	1.0	2.0	ms	I_F = 10 mA I_O = 1 A V load = 40 VDC Pulse width = 10 ms Duty cycle $\leq$ 1%	
Turn-Off time	t_{OFF}	—	0.35	2.0	ms		
Rise Time	t_R	—	0.9	1.8	ms		5
Fall Time	t_F	—	0.2	1.5	ms		
Thermal Resistance (junction-case)	θ_{JC}	—	1.8	—	°C/W		

* All typical values are at T_C = 25°C

Notes:

1. Non-repetitive, pulse width $\leq$ 10ms, T_C = 25°C.
2. Non-repetitive, pulse width $\leq$ 100μs, T_C = 25°C.
3. Input pins shorted together and output pins shorted together.
4. Input-output potential applied momentarily, not an operating condition.
5. Rise time is measured from 10% to 90% of load current (90% to 10% of V_O). Fall time is measured from 90% to 10% of load current (10% to 90% of V_O).

 CAUTION:

Care should be taken not to exceed the maximum power dissipation and maximum junction temperature when repetitively switching loads.

| INPUT	OUTPUT
ON	ON
OFF	OFF

Figure 1. Truth Table
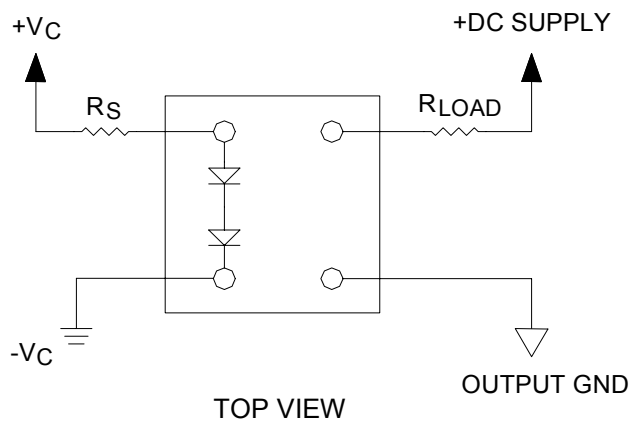
Figure 2. Terminal Connections
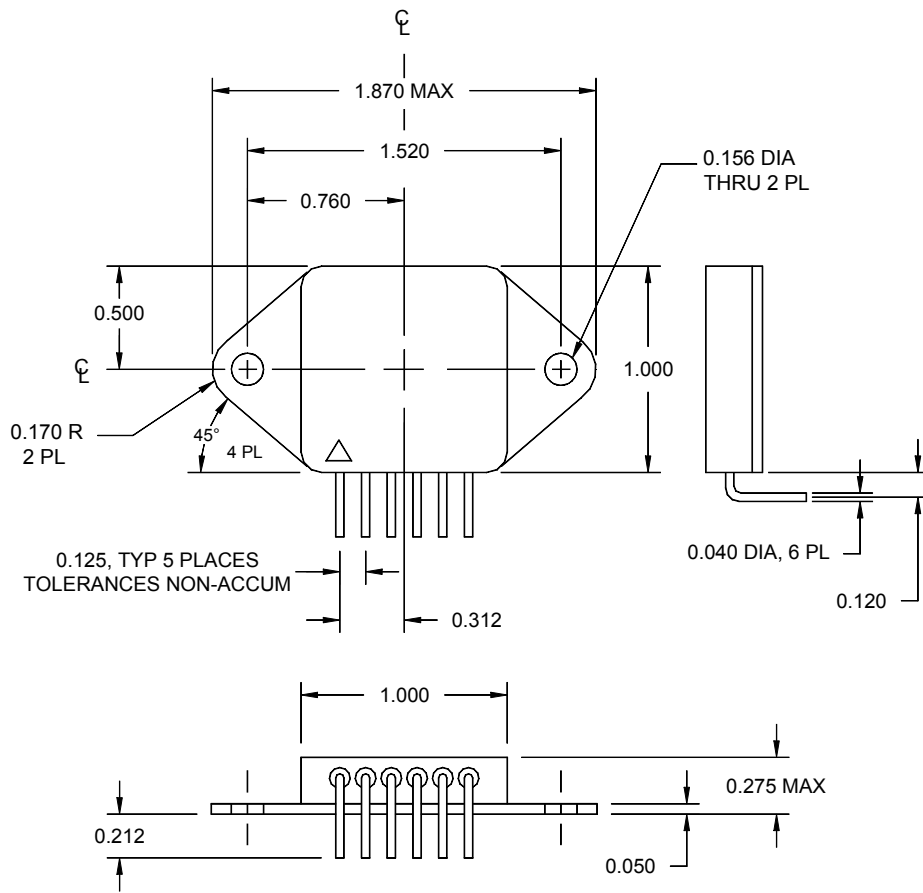
Dimensions: inches

Pin	Function
1	+IN
2	-IN
3	+OUT
4	+OUT
5	-OUT
6	-OUT

<u>Notes</u>: 1. For +OUT and -OUT functions, both pins must be used to meet the rated current.
2. ESD symbol (∆) indicates pin 1.

Figure 3. Case Outline