

**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 <sup>(1)</sup> .....	10 A
Storage Temperature Range .....	-65°C to +200°C
Operating Junction Temperature.....	+210°C
Lead Solder Temperature for 10 seconds .....	300°C
Continuous Input Current .....	15 mA
Peak Input Current <sup>(2)</sup> .....	30 mA
Reverse Input Voltage .....	6 VDC

**WEIGHT:** ..... 17 grams (typical)

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Micropac reserves the right to make changes at any time in order to improve design and to supply the best product possible.

## 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

 $T_C = -55^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$  unless otherwise specified

Parameter	Sym.	Min.	Typ.*	Max.	Units	Test Conditions	Notes
Output On-Resistance	$R_{(ON)}$	—	0.03	0.07	$\Omega$	$I_F = 10\text{ mA}$ $I_O = 1\text{ A}$	
Output Leakage Current	$I_{O(OFF)}$	—	—	1,000	$\mu\text{A}$	$V_F = .5\text{ VDC}$ $V_O = 50\text{ VDC}$	
Input Forward Voltage	$V_F$	—	2.50	3.50	VDC	$I_F = 10\text{ mA}$	
Input Reverse Breakdown Voltage	$V_R$	6	40	—	VDC	$I_R = 10\text{ }\mu\text{A}$	
Input-Output Leakage	$I_{I-O}$	—	—	1	$\mu\text{A}$	$RH \leq 45\%$ , $t = 5\text{ s}$ $V_{I-O} = 600\text{ VRMS}$ $T_C = 25^{\circ}\text{C}$	3, 4
Turn-On Time	$t_{ON}$	—	1.0	2.0	ms	$I_F = 10\text{ mA}$ $I_O = 1\text{ A}$ $V\text{ load} = 40\text{ VDC}$ 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)	$\theta_{JC}$	—	1.8	—	°C/W		

\* All typical values are at  $T_C = 25^{\circ}\text{C}$ 

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**Notes:**

1. Non-repetitive, pulse width  $\leq 10\text{ms}$ ,  $T_C = 25^\circ\text{C}$ .
2. Non-repetitive, pulse width  $\leq 100\mu\text{s}$ ,  $T_C = 25^\circ\text{C}$ .
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

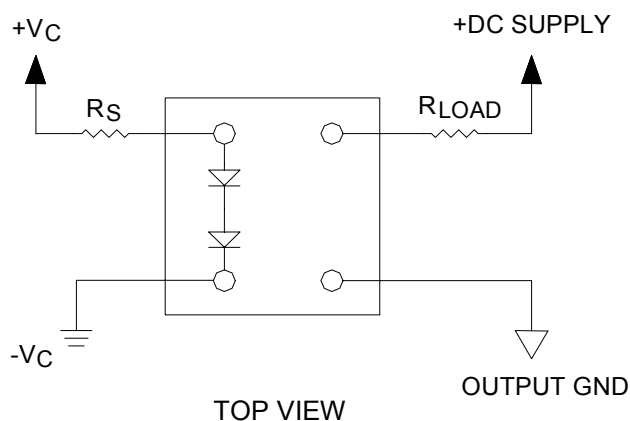
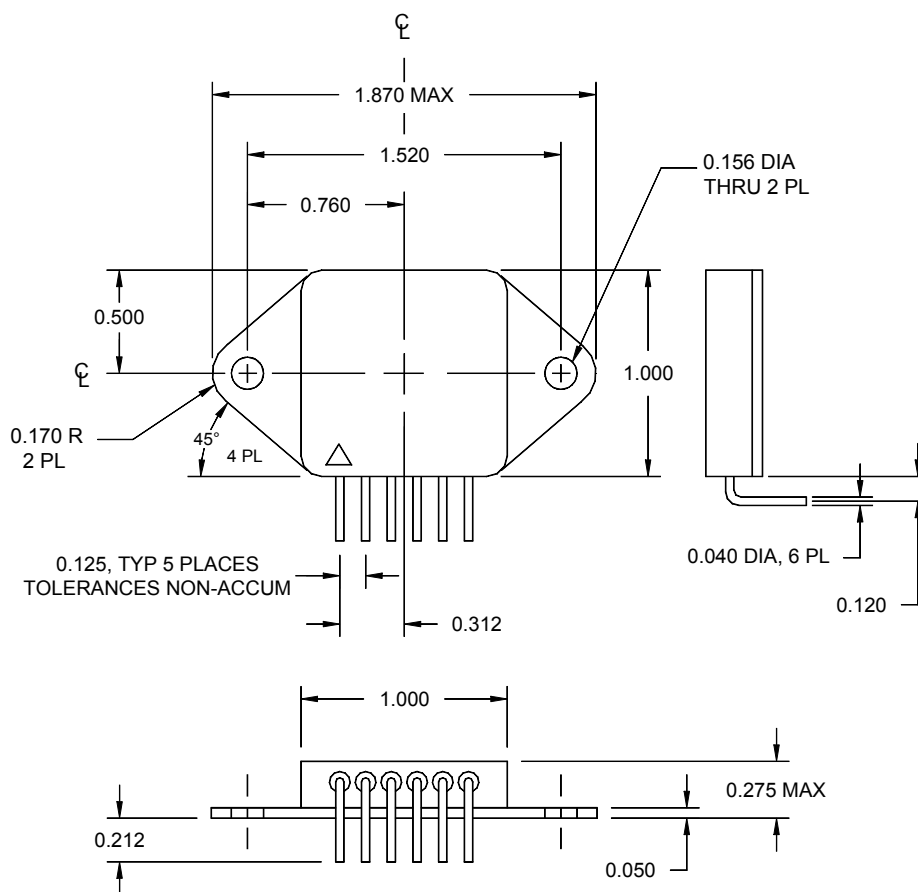


Figure 2. Terminal Connections

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Dimensions: inches

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

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

Figure 3. Case Outline

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