

53030

SPST SOLID STATE RELAY



FEATURES

- IAW DESC Drawing 87042
- SPST, Normally Open
- Up to 1200 V RMS Isolation
CMOS or TTL Compatible Input
- Power FET Output for Low On-state Resistance
- Full Military Temperature Operation:
-55°C to +110°C
- Military Environmental Screening Available
- Improved Thermal Characteristics
- Built and tested per Y level screening requirement of MIL-R-28750

GENERAL DESCRIPTION

The MII 53030 is a military SPST solid-state relay. This light-weight device is resistant to damage from shock and vibration, and immune to contact-related problems (contamination, arcing) associated with mechanical equivalents.

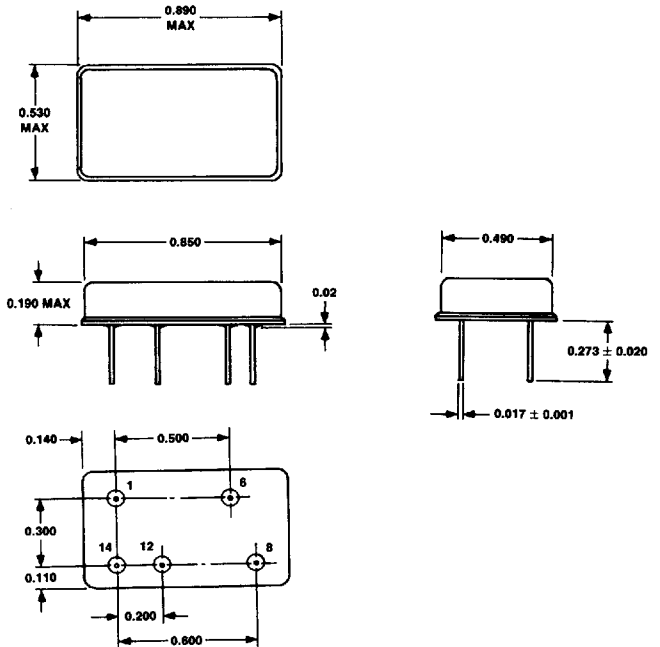
Optical coupling between the input and output stages provides effective isolation up to 1200 volts AC RMS. Power FET outputs eliminate bipolar offset, and minimize output voltage drop.

The control input logic is CMOS and TTL compatible, and will accommodate bias supplies ranging between 3.8 and 32 VDC. A built-in Schmitt trigger increases noise margin when using the device in the CMOS input mode.

This solid-state relay is ideal for use in military systems, or wherever high reliability, low power actuation, and light weight are design considerations. Applications include general purpose signal switching and electronic load control.

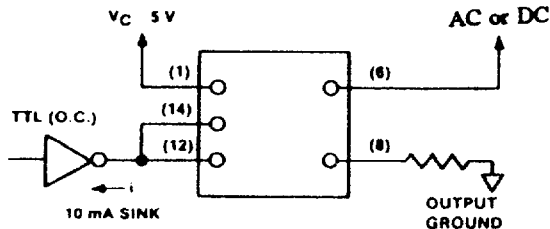
MILITARY, DC SOLID STATE RELAY WITH SHORT CIRCUIT PROTECTION

PACKAGE DIMENSIONS

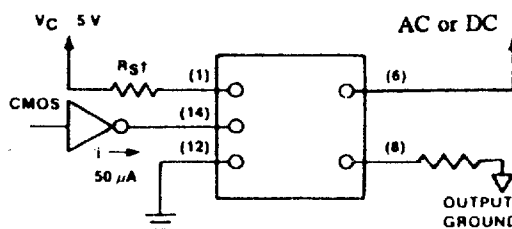


PIN	FUNCTION
1	INPUT + (V_{CC})
6	-OUT
8	+OUT
12	INPUT (Common)
14	CONTROL

APPLICATION INFORMATION



TTL CONFIGURATION



CMOS CONFIGURATION

Micropac Industries cannot assume any responsibility for any circuits shown or represent that they are free from patent infringement. Micropac reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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SSST SOLID-STATE RELAY**TABLE 1**
LIMITING RESISTANCE (R_s) VALUES (Without Heat Sink)

V(VDC)	3.8-6	6-10	10-14	14-18	18-22	22-26	26-32
R(Ω)		300	620	910	1200	1500	2000
Rating (W)		1/4	1/4	1/2	1/2	1/2	1

ABSOLUTE MAXIMUM RATINGS

Isolation Voltage 1200 VAC RMS
 Operating Temperature -55°C to +110°C
 Storage Temperature -55°C to +125°C

ELECTRICAL CHARACTERISTICS* $T_A = +25^\circ\text{C}$

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Input (Control) Characteristics TTL Configuration					
Input Current			13	16	mA
Control Voltage Range	See Table 1 - Bias Resistance	3.8		32	VDC
Turn-Off Voltage Maximum				1.5	VDC
Turn-On Voltage Minimum		3.8			VDC
Input (Control) Characteristics CMOS Configuration					
Input Current			25	250	μA
Control Voltage Range				18	VDC
Bias Supply - V_c	See Table 1 - Bias Resistance	3.8		32	VDC
Bias Current			13	16	mA
Turn-Off Voltage @ 5 V V_c			3.2		VDC
Turn-On Voltage		0.5			VDC
Total Schmitt Hysteresis		1.0			VDC
Maximum Continuous Operating Output Voltage			± 60 Volts Peak		VDC
Maximum Load Current	25 °C		.95		Amps
On Resistance -Maximum	25 °C		.70		Ohms
Current Surge	100 mS @ 25 °C		2		Amps
Overload Trip Current	40 mS Pulse @ 25 °C		8.5		Amps
Typical Thermal Resistance, θ_{JA}			70		°C/W
			25		°C/W
Typical ON, t_{ON}			3.0		mS
Typical OFF, t_{OFF}			4.0		mS
Typical Leakage Current	60 V		100		μA
Minimum Dielectric Strength			1200		V RMS
Typical Isolation Resistance	Input to Case, 500 V		10^9		Ohms

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