53233
QUAD SOLID-STATE RELAY
SQUIB FIRING RELAY WITH OUTPUT STATUS

FEATURES

- Power FET Output
- Magnetic Coupling (Isolation)
  - Fast turn on times/turn-off
  - Excellent Parametric Stability
- Low On-state Resistance
- Load Current Pulses up to 100A
- TTL and CMOS Compatible Control
- Output Status

GENERAL DESCRIPTION

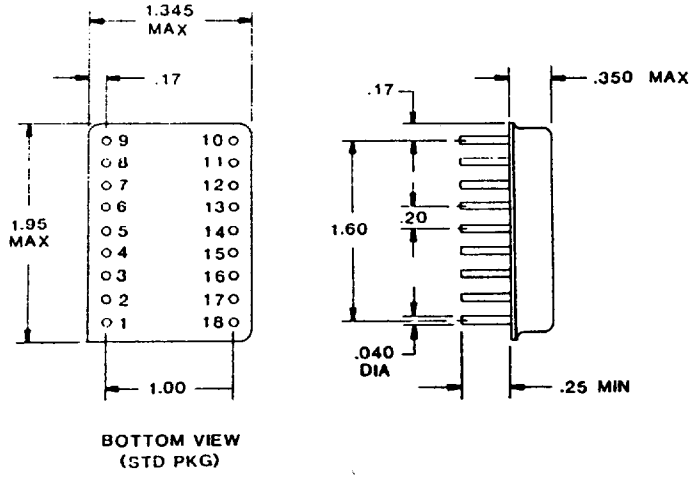
The MII 53233 is a high current quad solid-state relay designed and built to meet the requirements of MIL-R-28750. This devices is capable of carrying 7A per section and up to 100A pulses for 100 µSec. A 6N140 opto-coupler is provided for output status indication (voltage across an output switch gives an active low).

The combination of magnetic coupling and a power MOSFET switching element gives fast turn-on times and high voltage isolation between inputs and outputs, and excellent parametric stability over the full military temperature range.

The control logic is CMOS and TTL compatible.

The output switches are isolated from each other allowing separate power and returns for each section or any combinations of high and low side switching. Outputs may be put in series (+/- to +/-) for AND functions, or (+/- to -/+) for AC loads, or paralleled for higher current capability.

PACKAGE DIMENSIONS



BOTTOM VIEW
(STD PKG)

PIN OUT:

1 =	Control "A"	10 =	Control V_{CC}
2 =	Status "A"	11 =	- "D" Output
3 =	Control "B"	12 =	+ "D" Output
4 =	Status "B"	13 =	- "C" Output
5 =	Control "C"	14 =	+ "C" Output
6 =	Status "C"	15 =	- "B" Output
7 =	Control "D"	16 =	+ "B" Output
8 =	Status "E"		
9 =	Control Ground		

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ELECTRICAL CHARACTERISTICS* (-55° C TO +125° C case unless otherwise specified)

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Input (Control) Characteristics					
Control Current	@ 5 VDC		70	80	µA
Control Voltage Range			5.0	7.0	VDC
Bias Supply Range, V_{DD}		4.5	5.0	5.5	VDC
Bias Current	See Note 1		4	6	mA
Turn-Off Minimum (Guaranteed Off)		0.4			VDC
Turn-On Maximum (Guaranteed On)				3.8	VDC
Output (Load) Specifications					
Maximum Continuous Output Current	25 °C, See Note 2 120 °C, See Note 2			7.0 3.0	Amps Amps
Pulse/Surge Current	100 µsec, See Note 2 100 msec, See Note 2			100 23.5	Amps Amps
Continuous Operating Output Voltage				60	VDC
Continuous Blocking Voltage				80	VDC
On-State Resistance Rds (on)	@ 25 °C			.08	Ohms
On-State Resistance Rds (on)	@ 85 °C			.09	Ohms
Turn-On Time	T_c = 25 °C, See Note 1			1.0	mSec
Turn-Off Time	T_c = 25 °C			1.0	mSec
Off-State Leakage at 60 VDC				6	mA
Off-State Leakage at 80 VDC				8	mA
Capacitance Across Output	@ VDS = 25 VDC F=1.0 MHz			1700	pF
Junction Temperature (T_J Max.)				125	°C
Thermal Resistance Junction to Ambient (θJA)				35	°C/W
Thermal Resistance Junction to Case (θJC)				7	°C/W
Isolation	@ 500 VDC, Input to Case Input to Case, Output to Case	10⁹			Ohms
Capacitance	Input to Output at 1 KHz			15	pF
Dielectric Strength	Input to Case Input to Output, Output to Case	500			VAC RMS 60Hz
Output Status "ON" (control side)	5 mA = I_o			.4	Volts
"OFF" Leakage (control side)	5 V (V_{CC})		.010	20	µA
Voltage at Switch Status "Low"	Full Temperature	17		60	Volts
Voltage at Switch Status "High"	Full Temperature	0		1.4	Volts

APPLICATION NOTES
1. Each input "on" - 4X for all inputs "on".
2. Each output individually or in combinations.

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