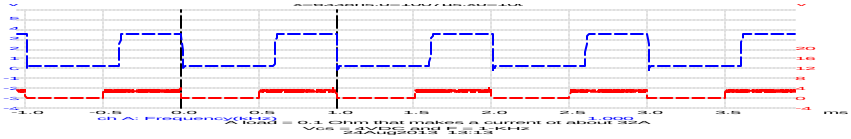
VSHOLDING.COM

Panel Mount
Series "mDPL" SPST-NO SSRs
from 50A to 130A & 100 VDC
1 Form A, SPST-NO Solid-State Relays

DC control
MOSFET output
Ratings available up to 1500 VDC & 150 A
Requires no heat sink at the rated current
Relays are easily paralleled for higher-current applications
Easily connected in series for controlling a VAC power
Low control power of only 1.4 mW at 2.8VDC
Low control voltage 2.8 – 5 VDC
Medium switching frequency, up to 3 KHz (50 A)



PRODUCT SELECTION

Rating Currents	**50A**	**75A**	**100A**	**130A**
Device description	**mPDL100D50**	**mPDL100D50**	**mPDL100D100**	**mPDL100D130**
Part Number	**EDR83116**	**EDR83115**	**EDR83113**	**EDR83114**

OUTPUT SPECIFICATIONS

Description					
Operating Voltage [VDC]		**0-100**	**0-100**	**0-100**	**0-100**
Max. OFF-State Leakage [mA] at Vmax		**10**	**10**	**15**	**25**
Max. ON-State Resistance [Ohms] at rated current		**0.004**	**0.003**	**0.0012**	**0.0008**
Max. Load Current		**50**	**75**	**100**	**130**
Minimum Load Current [mA]		**20**	**20**	**30**	**50**
Max. Surge Current [A DC] (1ms)		**500**	**750**	**1000**	**1300**
Max. ON-State Voltage Drop [V] at rated current		**0.45**	**0.525**	**0.120**	**0.104**

INPUT SPECIFICATIONS

Description						
				DC Control		
Control Voltage				**from 2.8 to 5.2 VDC**		
Minimum Turn-ON Voltage				**2.4 VDC**		
Minimum Turn-OFF Voltage				**2.0 VDC**		
Maximum Input Current				**0.6 mA (2.8VDC), 10 mA (5.2 VDC)**		
Max. Turn-ON delay time	**[msec]**		**20**	**30**	**50**	**73**
Max. Turn-OFF delay time	**[msec]**			**8.1**		
Max, Switching Frequency	**[Hz]**	**(Vcs = 3.3VDC)**	**3000**	**2500**	**1200**	**800**

GENERAL SPECIFICATIONS

Description				
	Parameters			
Dielectric Strength, Input /Output/Base (50/60Hz)	**2500 Vrms**			
Min. Insulation Resistance [& 500 VDC]	**10^9 Ohm**			
Max. Capacitance, Input /Output	**50 pF**			
Ambient Operating Temperature Range	**-45 to 85 °C**			
Ambient Storage Temperature Range	**-50 to 125 °C**			
Wight (average)	**2.5 oz**	**3.0 oz**	**3.5 oz**	**4.0 oz**
Encapsulation	**Thermally conductive Epoxy**			
Terminals	**6-32 Screws – 10 in lbs. (control)**	**8-32 Screws and 10-32 – 20 in lbs. (power)**		

GENERAL NOTES

All parameters at 25 °C and per section unless otherwise specified
Dielectric strength and isolation resistance are measured between input and output
Rated at other voltages/currents mPDL SPST-NO (normally opened) series relays are presented on the next page
In the same package, mPDL SPST-NC (normally closed) relays are available

1 Form A, SPST-NO Solid-State Relays to replace electromechanical relays

OUTPUT SPECIFICATIONS (We rate our devices at the maximum voltage/current no heat sink is required)

Model	V range (VDC)	I rms	Idm	Rds [ON]	I surge	p/n
µDPL40D50	0 TO +40	50	150	.0017	800	EDR83128
µDPL40D100	0 TO +40	100	300	.0008	1100	EDR83129
µDPL40D150	0 TO +40	150	600	.00035	1400	EDR83130
µDPL55D50	0 TO +55	50	150	.0017	800	EDR83131
µDPL55D100	0 TO +55	100	300	.0008	1100	EDR83132
µDPL55D150	0 TO +55	150	600	.00036	1400	EDR83133
µDPL75D50	0 TO +75	50	100	.0023	800	EDR83134
µDPL75D100	0 TO +75	100	300	.0013	1000	EDR83135
µDPL75D150	0 TO +75	150	600	.0007	1200	EDR83136
µDPL100D50	0 TO +100	50	150	.004	500	EDR83116
µDPL100D75	0 TO +100	75	250	.003	750	EDR83115
µDPL100D100	0 TO +100	100	350	.0012	1000	EDR83113
µDPL100D130	0 TO +100	130	420	.0008	1300	EDR83114
µDPL150D80	0 TO +150	80	350	.002	800	EDR83117
µDPL150D55	0 TO +150	55	250	.0028	550	EDR83118
µDPL200D50	0 TO +200	50	200	.0037	500	EDR83119
µDPL300D35	0 TO +300	35	100	.009	350	EDR83120
µDPL500D30	0 TO +500	30	150	.019	300	EDR83121
µDPL600D25	0 TO +600	25	120	.028	250	EDR83122
µDPL102D10	0 TO +1,000	10	90	.110	100	EDR83123
µDPL152D2	0 TO +1,500	2	28	.500	25	EDR83124
µDPL152D25	0 TO +1,500	4	40	1000	40	EDR83125

NOTE: We recommend applying 20% less voltage and current down form rated for maiming safety margins.

1. V range — a range of voltages that can be applied to the output terminals
2. I rms — a maximum allowed average current (amperes) through the output terminals
3. Idm — a maximum allowed pulsing current (amperes) maintaining a 10% duty cycle.
4. Rds (ON) — a maximum resistance between output terminals while the control signal is applied
5. I surge — a maximum allowed surge current for pulses shorter than 25µS 1000% duty c.

There are some differences between devices such as a maximum switching frequency, turn-on delay and slope, consumption control current, etc. that somewhat depends on the output rating. Please request a specific data sheet if that is important for your application.

The above is a list of popular devices. You're welcome to request a device with a different voltage/current rating. There is no additional charge and the cost is calculated based on a market price of MOSFETS that would require meeting your request.

We manufacture large varieties of Solid-State Modules included but limited to; relays [SPST, SPDT and DPST], switches, ½ drivers, H-drivers, High-voltage relays and switches, Super-High current switching systems, etc.

We charge no production set-up fee for an order of 400 and above for any type (input and output specifications) Solid State Relay/Switch and Solid State Breaker.

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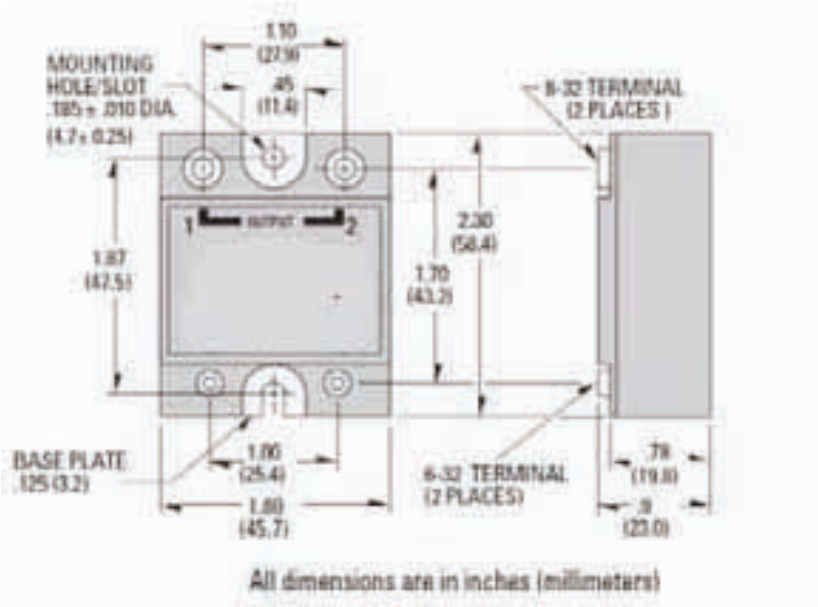
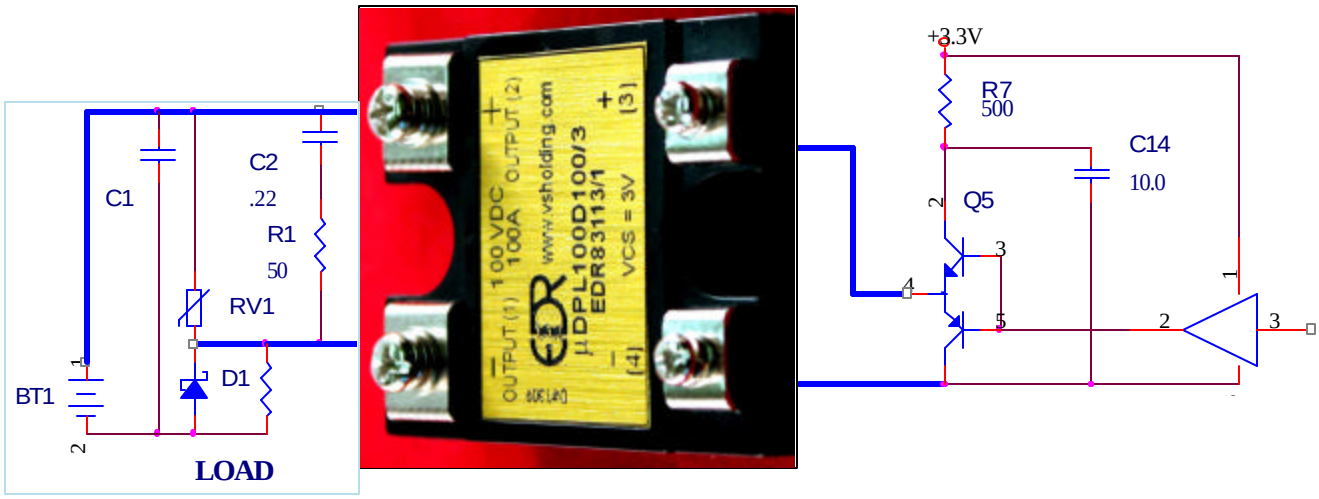
MECHANICAL DIMENSIONS



Application Note



1. The hook-up diagram presented above is applicable to both the µDPL and µRPM families of devices, because the input schematics functionally are rather similar. A stability and accuracy of the turn-on and turn-off relays depends on the sharpness of control signal rising and falling slopes. For that reason, integrating a push-pull driver (Q5) in your design for driving the relay is paramount important. Many commercially available IC chips built with a push-pull output.
2. A relay requires less than 1mA rms for maintaining the ON state, but the control current could be ten times higher during the turn-on phase. The R-C integrated network consisting of R7 and C14 helps averaging consumption input current thus making it possible to apply micro power for controlling kilowatts.
3. Semiconductors can provide a trouble-free unlimited life span of operation taking voltages, currents would not exceed rated, and of course, an ambient temperature and environment are serviceable. A simple protections install on the output would insure its survivability. Power devices built with MOSFETs, in general, are much easily withstanding 500% output current surge during a short time than 20% of excessive applied voltage. There are three simple and effective protections must be integrated for preventing a disaster. One of them is a high frequency, high-current schottky diode (D1) installed in parallel to a load. It is also called a flyback/clamp diode. A connective cable must be considered as a part of the load; hence, it is wise connecting the diode's cathode to the output terminal. Other protection is combination of a snubbing network including a capacitor and a resistor (C2 + R1) connected in series with a Transient Voltage Surge [TVS] diode (RV1) connected in parallel to it. Some designers use only the snubbing network, others do only TVS, and others use only the flyback diode. We recommend installing all three protections. The snubbing network along wouldn't provide sufficient protection against a high-power transient voltage surge.