500VDC, 6Amp Relay/Switch

Powerful Fast Solid State Relay

Designed to deliver 80 KW of power in a microsecond

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Features:
Utilizes only 1.4 sq. in. of PCB area and only 1.15" tall
6A continuously or up to a 160A pulse in a miniature package
High sensitivity, even at high switching frequencies
200A surge current and only 0.1 Ohms on-state resistance

Please specify power supply and control voltage

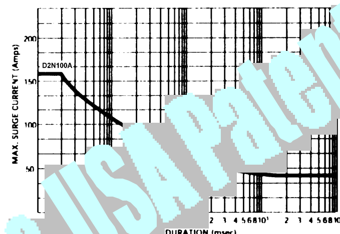
Input Specifications:

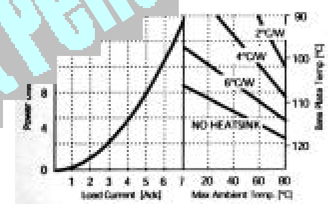
Input Control Voltage (pin 4)	see the order page
Nominal Current	7.5 mA
Power Supply +Vcc (pin 3)	see the order page for selection

Output Specifications:

Operating DC voltage range	0 – 500 VDC
Maximum continuous current	6 A rms
Maximum surge current (IDM) - .3mS	160 A
Continuous current (ID)	50A
Maximum on-state resistance	0.07 Ohm
Rising time	0.029 µS
Delay-on time	0.180 µS
Falling time	0.080µS
Delay-off time	0.250 µS
Maximum switching frequency	200 KHz

*** Test performed with a D3N650D3/24**



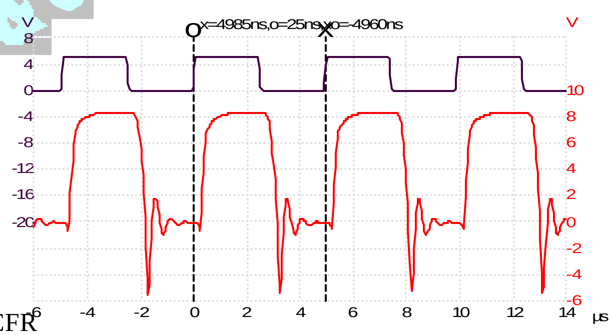


General Specifications:

Ambient operating temperature range	-45^0 C to 85^0 C
Ambient storage temperature range	-55^0 C to 125^0 C
Dielectric Strength input-to-output	3,000VAC

Mechanical Specifications:

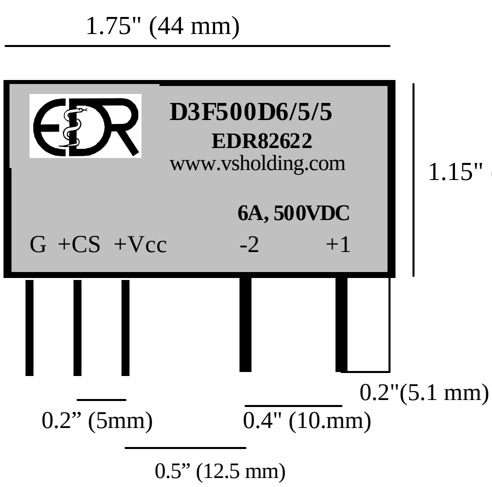
Weight (oz)		.2
Encapsulation	Epoxies Etc.	50-2366RFR / 50-2366CFR

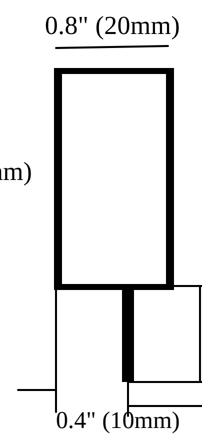


Control

Load

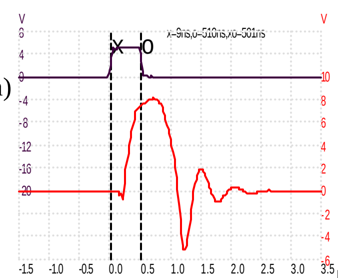
Pulse train (frequency) 200 KHz





0.3" (7.5 mm)

PIN 1:	+ LOAD
PIN 2:	return LOAD
PIN 3:	+Vcc
PIN 4:	+ Control Signal
PIN 5:	common/GND return



Pulse 500nS

All Dimensions are in inches (millimeters).

Dimensions for SIP4 package	1.15"H x 1.75"L x 0.8"W
Terminals/solder for SIP4 package	control - 0.40", power – 0.6"

Transient Protection: All loads are inductive, even ones that are not so obvious or labeled. An inductive load produces a harmful transient voltage, which is much higher than the applied voltage, when it is turned on and off. A SSR built with a MOSFET output acts as an ideal switch and can produce a seemingly "non-inductive" load, which can cause damage if not suppressed. A transient voltage suppressor, which is bi-directional for AC applied voltage and unidirectional for DC applied voltage, should be used to clamp excessive spikes.

Input Electrical Characteristics (Ta = 25^{0}C) for D3F500D6/5/5, p/n EDR82622

Characteristic	Test Condition	Min	Typ.	Max.	Unit
Control voltage range		3.5	5	7	V
Maximum Turn-On Voltage			2		V
Maximum Turn-Off Voltage			1.6		V
Input Current		6	7.5	20	mA

Input Electrical Characteristics (Ta = 25^{0}C) for D3F200D3.5/5/10, p/n EDR82611

Power Supply, P/S		4.7	5	5.1	V
Maximum P/S current at DC – 20 KHz				60	mA
Maximum P/S Current at 200 KHz				200	mA

Switching time test – Load – 5 Ohm & 1.6A

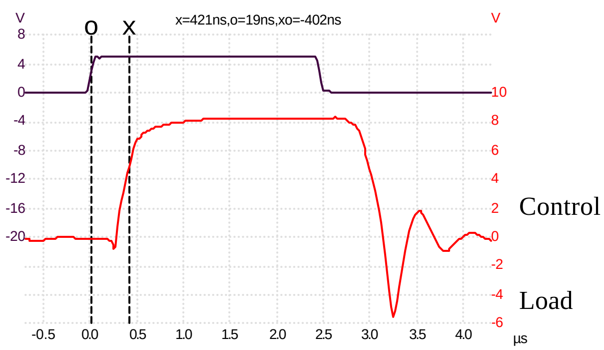


Figure 1 Turn-on delay is 402nS

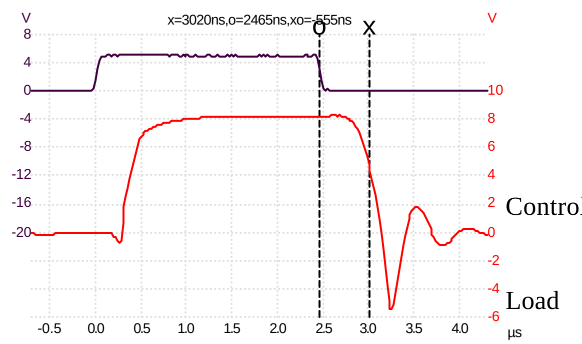


Figure 2 Turn-off delay is 555nS

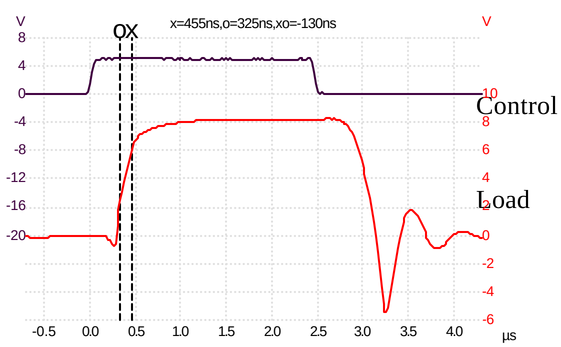


Figure 3 Rising Time is 130nS

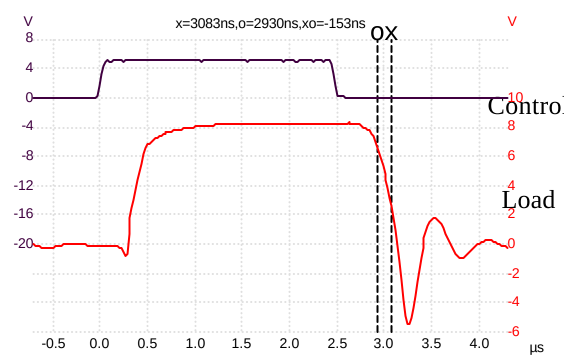


Figure 4 Fall Time is 153nS

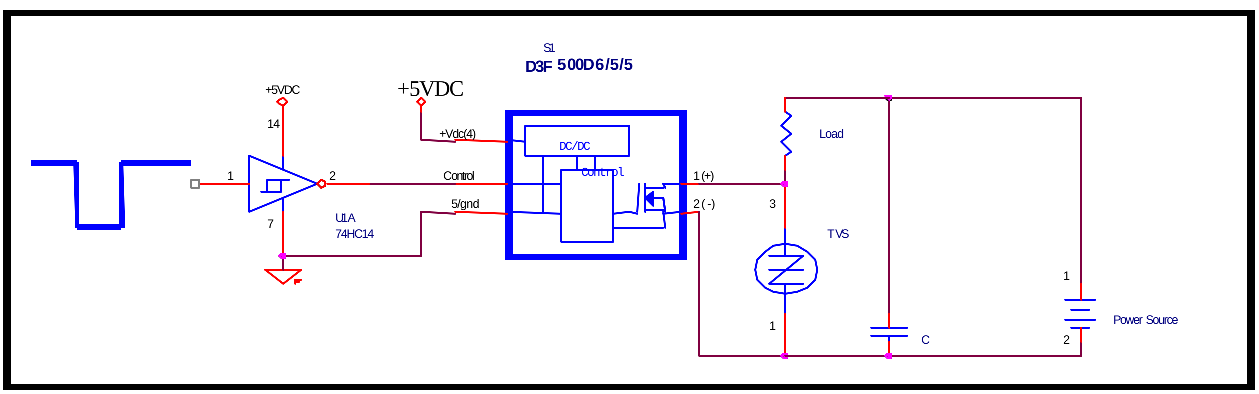


Figure 5 Switching Time Test Circuit

Ordering Instruction

A part description will be marked according to the description below but p/n EDRxxxxx will stay the same for already items in circulation (already sold).

D a b c e f /h /i /k /z /0 /v

"D" is for our standard packages.

(a) Package dimensions

1	0.615"H x 1.48"L x 0.290"W
2	1.15"H x 1.75"L x 0.4"W
3	1.15"H x 1.75"L x 0.8"W
4	1.15"H x 2.0"L x 0.92"W
5	1.15"H x 2.8"L x 1.15"W
6	DIP24, 0.375"H x 0.925"L x 0.53"W
7	panel mount, 0.82"H x 2.7"L x 2.0"W

(b) Speed - A device's ability to turn ON/OFF output terminal(s) per second

L	a low speed relay/switch, rated DC - 800 Hz, direct driving control, SIP4
A	a low speed relay/switch, AC input relays, SIP4
N	a medium speed relay/switch, rated DC - 25 KHz, direct driving control, SIP4
G	a medium speed relay/switch, rated DC - 25 KHz, low current control and power, SIP5
F	a fast relay/switch, rated up to DC - 350 KHz, low current control and power, SIP5
S	a super-fast relay/switch, rated DC - 1.4 MHz, low current control and power, SIP5
U	a super-fast relay/switch, rated DC – 1.2 MHz, direct driving control, SIP4

(c) Voltage - A maximum allowed voltage between output terminals

It must be replace with any of offered voltage, 30VDC, 45VDC, 75VDC, 100VDC, 200VDC, 500VDC, 650VDC, 800VDC, 900VDC, 1000VDC and 1100VDC, 1400VDC and 1700VDC.

Note: In an "AC" -relay a voltage specified a peak-to-peak maximum voltage and the maximum VAC can be calculated by multiplying a maximum allowed voltage by factor of 0.7.

(e) A relay can be use to control DC or AC/DC power

A	- a relay/switch designed to switch/chop an AC power
C	- a relay/switch with a normal close contacts
D	- a relay/switch designed to switch/chop a DC power

(f) A maximum allowed RMS CURRENT (Ampere) without a heat sink.

(h) We offer several standard control voltages 5VDC, 12VDC, 24VDC, 48VDC, 3-20VDC and 18-38VDC. Please specify the input control voltage, as for example D1L30D12/xx. Replace xx with a 3, 5, 12, 24, 48, 3-20 and 18-38 that is for 3VDC, 5VDC, 12VDC, 24VDC, 48VDC, 3-20VDC and 18-38VDC. Respectful control voltage represented at the end of part number in the following way, for an example EDR82653/1 and EDR82653/8. Both relays are almost the same and difference is only an applied control voltage, "1" if for 3VDC and "8" is for 18-38VDC;

Control Voltage	Representation	Control Voltage	Representation	Control Voltage	Representation
3VDC	1	5VDC	2	12VDC	3
24VDC	4	48VDC	5	26VDC	6
3-20VDC	7	18-38VDC	8	90-120VAC	9

(i) A power supply required for a relay with an internal DC/DC converter. We offer several standard voltages 5VDC, 12VDC, 24VDC and 48VDC.

(k) Output terminals configurations

"N" or nothing	SPST or 1 Form A output terminals
"NN"	2SPST or 2 Form A output terminals
"NNN"	3SPST or 3 Form A output terminals
"T"	TOTEM output, break-before-make termination or NO-NO
"CN"	SPDT

(z) A relay/switch built with following standard isolations

"L" type relay is 2500 V

"N" type relay is 3000V, 4000VDC ("H4") and 5200 ("H5") VDC.

(0) Screening option, (NONE) for industrial, B for Class B, and S for Class S

(v) a Veri-Slope option.

Examples:

D3F1000D3/4-32/5 - **a fast relay/switch designed to work with up to 1000 VDC and capable of 3 Ampere of rms. A control voltage can be any from 4VDC until 32VDC and required 5VDC to operate properly, SIP5 package.**

D3N500A10/12/12 - **a medium speed relay/switch designed to withstand 500VDC peak-to-peak or 350VAC and 10 Ampere of rms. A control voltage is 12VDC and the power supply is 12VDC, SIP4 package.**