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# 9VDC, 1Amp VIDEO Switch

## High Frequency Analog, 0.10 Ohm SPDT Switch

Designed to switch a DC-5MHz signal in nanoseconds

- Features:** Utilizes only 1.4 sq. in. of PCB area and only 1.15" tall  
 1A continuously or up to 3.5 A pulse in a miniature package  
 High sensitivity, even at high switching frequencies  
 14 A surge current and only 0.10 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 5) see the order page for selection

### Output Specifications:

Operating DC voltage range	0 – 9.6VDC
Maximum continuous current	1 Arms
Maximum surge current (IDM) - .3ms	14 A
Continuous current (ID)	3.5 A
Maximum on-state resistance	0.10 Ohm
Rising time	0.017 $\mu$ S
Delay-on time	0.140 $\mu$ S
Falling time	0.027 $\mu$ S
Delay-off time	0.098 $\mu$ S
Maximum switching frequency	1.2 MHz

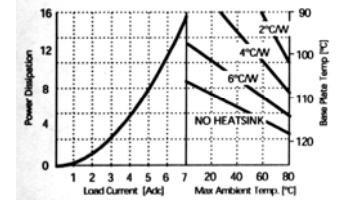
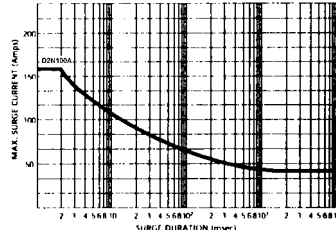
\* Test performed with a D3N650D3/24

### General Specifications:

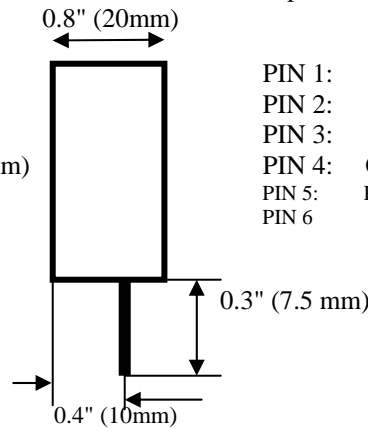
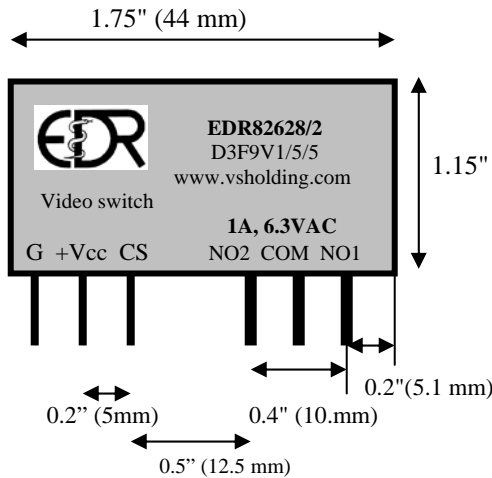
Ambient operating temperature range	-35 <sup>0</sup> C to 75 <sup>0</sup> C
Ambient storage temperature range	-55 <sup>0</sup> C to 125 <sup>0</sup> C
Dielectric Strength input-to-output	1,000VAC

### Mechanical Specifications:

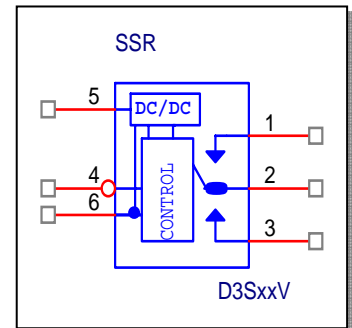
Weight (oz)	.2
Encapsulation	Epoxies Etc. 50-2366RFR / 50-2366CFR



A sample of chopping of 50MHz, 4V signal



- PIN 1: NO1
- PIN 2: COM
- PIN 3: NO2
- PIN 4: Control Signal (CS)
- PIN 5: Power Supply (+Vcc)
- PIN 6: GND (G)



All Dimensions are in inches (millimeters).  
 Dimensions for SIP4 package  
 Terminals/solder for SIP4 package

1.15"H x 1.75"L x 0.8"W  
 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.

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**Input Electrical Characteristics (Ta = 25°C) for D3F9D1/5/5, p/n EDR82628/2**

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°C) for D3F9D1/5/5, p/n EDR82628/2**

Power Supply, Vcc		4.7	5	5.2	V
Maximum current			150		mA

**Switching time test – Load – 52 Ohm & 0.15 A**

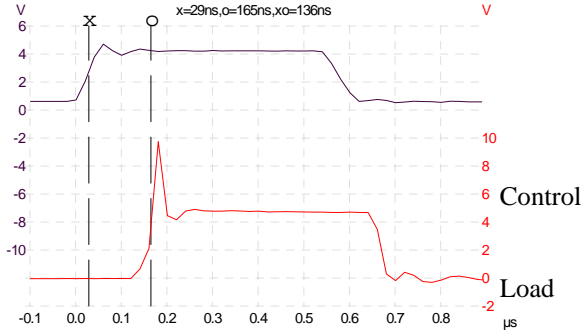


Figure 1 Turn-on delay is 138nS

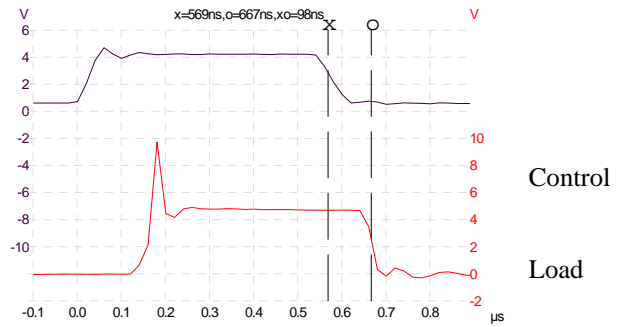


Figure 2 Turn-off delay is 98nS

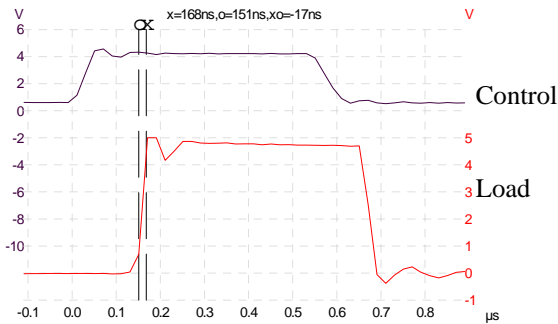


Figure 3 Rising Time is 17nS

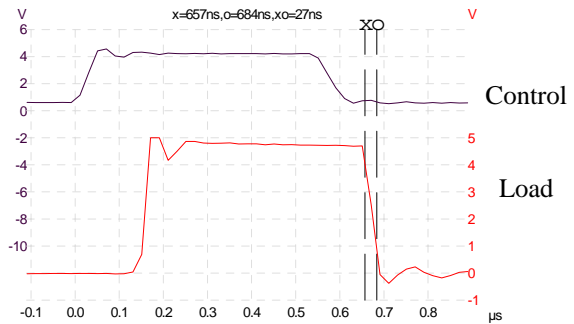
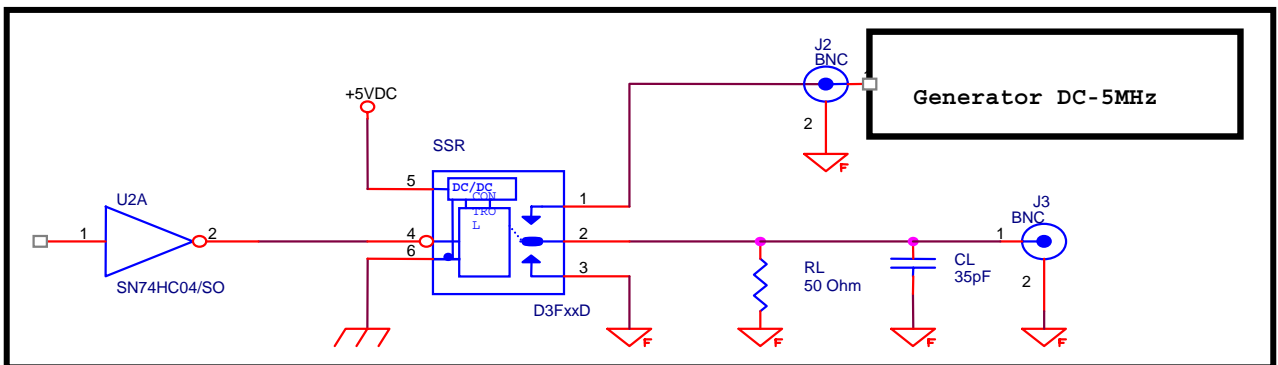


Figure 4 Fall Time is 27nS



**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 - 800 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;

<u>Control Voltage</u>	<u>Representation</u>	<u>Control Voltage</u>	<u>Representation</u>	<u>Control Voltage</u>	<u>Representation</u>
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, or SPDT, or analog switch
“CN”	SPDT
“V”	VIDEO switch

### (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**

#### 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.