



Electronic Design & Research  
<http://www.vsholding.com>

Technology for people's ideas

# 100VDC/45A SPST Relay/Switch

## D7G100D45/24/24W -Powerful, Fast Solid State Switch

Designed to deliver 80kW of power in microseconds

**Features:** Utilizes only 8 sq. in. of PCB area and only 2.0" tall  
 45A continuously or up to a 200A-pulse in a miniature package  
 High sensitivity, even at high switching frequencies  
 800A surge current and only 0.008 Ohms on-state resistance

Please specify input control voltage and power supply

**Input Specifications:**

Input Control Current/Voltage 24VDC/1mA  
 Power Supply Voltage/Current 18-36VDC, 20mA

**Output Specifications:**

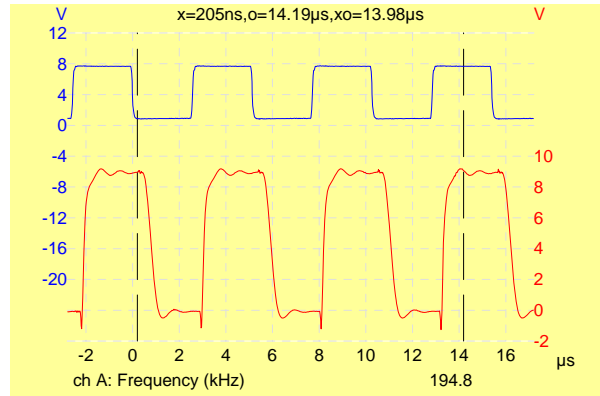
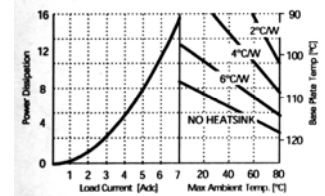
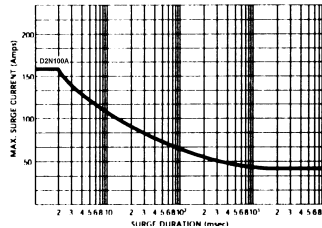
Operating DC voltage range 0 – 100 VDC  
 Maximum continuous current 40 A (DC, no  
 Maximum Continuous Current 67 A  
 Maximum surge current (IDM) - .1mS 200 A  
 Maximum pulsing current, duty 1/50 800 A/10mS  
 Maximum on-state resistance 0.008 Ohm  
 Rising time .180 μS  
 Delay-on time .480 μS  
 Falling time (determined by a load)  
 Delay-off time .500 μS  
 Maximum switching frequency 100.00 KHz  
 Maximum burst frequency (> 2 min) 200.00 KHz  
 Shortest pulse width .6 μS

**General Specifications:**

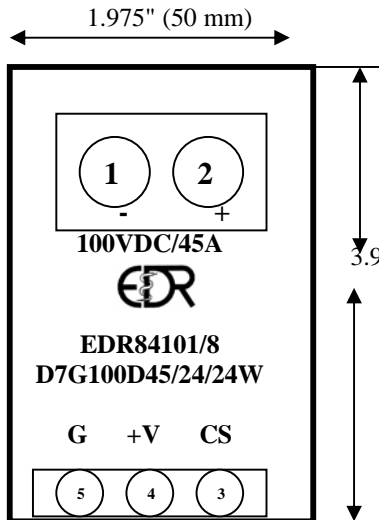
Ambient operating temperature range 45° C to 85° C  
 Ambient storage temperature range -55° C to 125° C  
 Dielectric Strength input-to-output 2,500Vrms(min)

**Mechanical Specifications:**

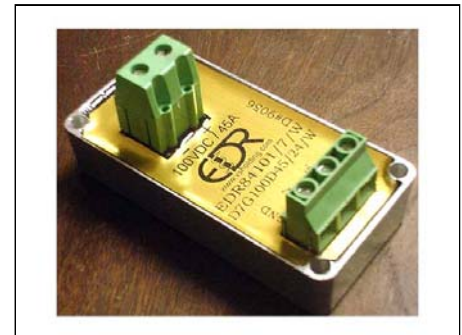
Weight (oz) .2  
 Encapsulation Epoxies Etc. 50-2366RFR / 50-2366CFK



Switching at 194KHz on a 1.0 Ohm load



PIN 1: - LOAD  
 PIN 2: + LOAD  
 PIN 3: + Control Signal  
 PIN 4: + Vcc  
 PIN 5: GND



Dimensions of the enclosure (box)  
 Highest with Power terminal Block  
 Terminals Control (screw type)  
 Terminal Power (screw type)

.85"H x 3.925"L x 1.975"W  
 2.00"  
 wires 10–24 AWG  
 wire 6-20 AWG/rated at 67 Amperes

**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.

Electronic Design & Research Inc. \*\* 7331 Intermodal Dr. \*\* Louisville \*\* KY 40258

Tel: 502-933-8660; Fax: 502-933-3422; Sales: 800-336-1337; e-mail: [vsholding@vsholding.com](mailto:vsholding@vsholding.com)

**Input Electrical Characteristics (Ta = 25°C) for DG100D45/24/24W, p/n EDR84101/8**

	Minimum	Nominal	Maximum	
Power Supply VDC, Pins 5-6	12	24	36	V
Power Supply, Current	30	20	100/10Khz	mA
“OFF” state, Control Voltage, normally “HIGH”		5		V
“ON” state, Control Voltage, “LOW”		0.8		V
Maximum Input Current, no external resistor			10	mA
An external resistor can be used to decrease the input current			5	mA

Switching time test – Load – 1 Ohm & 20A, a single 1.8 μS pulse width

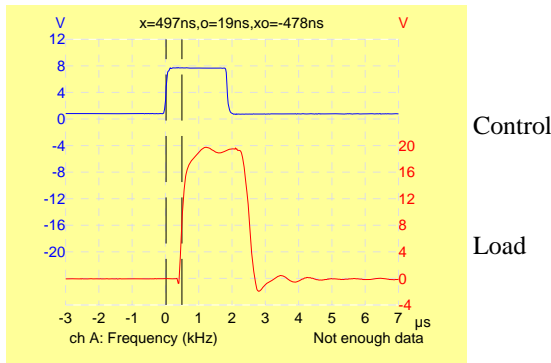


Figure 1 Turn-on delay is .478μS

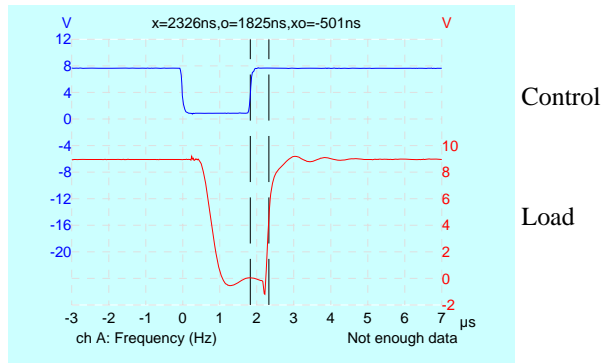


Figure 2 Turn-off delay is .501μS

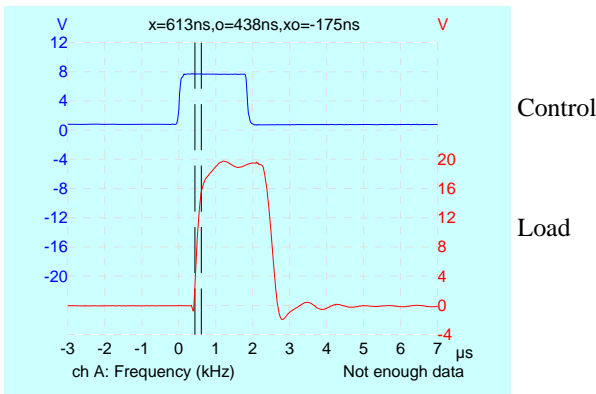


Figure 3 Rising time is 0.175μS

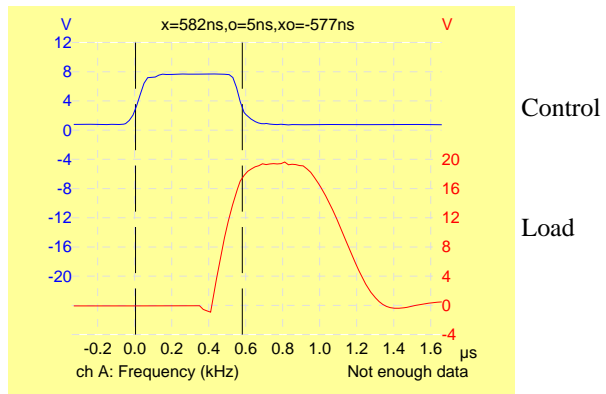
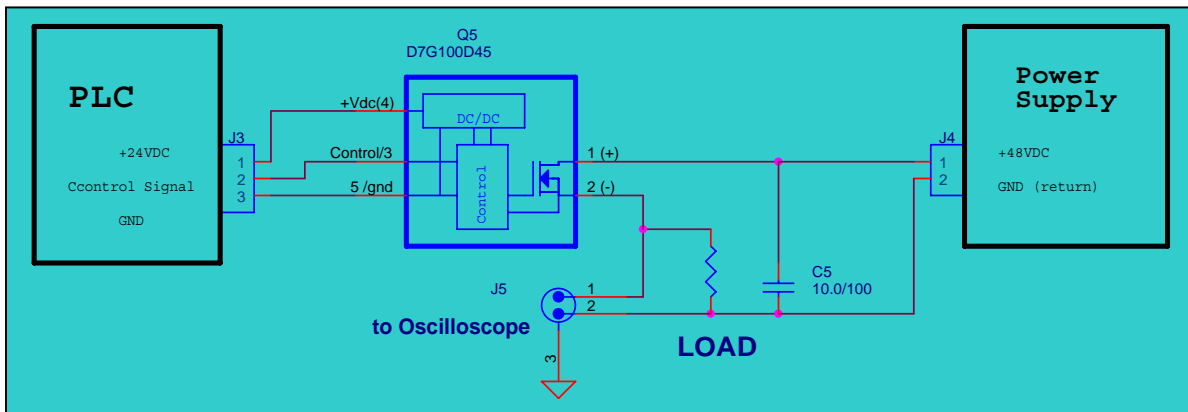


Figure 4 A pulse width is .577μS



**Switching Time Test Circuit**