



Electronic Design & Research
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Technology for people's ideas

The "T" family of High speed Relays/Switches

Isolated, SPDT/DPST, break-before-make switches

Designed to switch a DC-5MHz signal in nanoseconds

Fussy-logic controlled relays offered with a various output voltage and current to satisfy many industrial applications, up to 1200V relays made with MOSFET and up to 2500V with IGBT. The "T" family also features a three-state PWM input that works well together with most multiphase PWM controllers. A shoot-through protection is integrated to prevent both outputs from conducting simultaneously. The "T" – relay does the best interfaces with a three-state logic.

Features:

- Push-pull output stage for up to1,000 A peak
- Wide Analog Signal Range +/- 2,500V
- Chopping frequencies up to 800 KHz
- Low "ON" resistance (MOSFET) Milliohms
- Low Vce saturation (IGBT) 2V average
- High Current Capability, AC/DC switching:
- D3S-package up to 24 A
- D4S-packageup to 76 A
- Custom packagingup to 1000A
- Available -- Unidirectional and bi-directional relays/switches, or for a VDC or VAC power.
- Available – SPDT (3 pins) and DPST (NO/NC or 4 pins)
- Short propagation delay input-output 550 nS
- Try-state outputs input floating
- Break-Before-Make Delay (Typ.) 220 nS
- Fast Switching Action:
- Ton100 nS
- Toff 100 nS
- TTL, CMOS and LMOS Compatible
- Three-State PWM input for OFF/OFF output terminals
- Single Power Supply5VDC, 12VDC or 24VDC
- Fussy Logic Input:
- ON for "NO2" 0-1.7 V
- ON for "NO1" 3.3V-5V
- High input-output isolation 2,750 V

Applications:

- Bi-directional switch
- ½ bridge driver for AC and DC motors
- Video signal termination
- High Energy pulse formation
- Two relays combined for H-bridge driver
- High power, High frequency driver
- Latch and High-speed solenoid driver
- High Energy, Bi-polar pulse formation
- A switch for redundant supply systems
- High Frequency Analog Switch
- Audio Switching
- Automatic Test Equipment
- Communication Systems
- Analog Selector Switch
- AC and DC power switch
- Audio Signal Multiplexing
- Servo-Motor driver
- Pulse-Width modulation
- High Frequency DC/DC Converters
- High Input Voltage DC/DC Converters
- Flashlamp supply for pumping solid-state laser
- Driver for a powerful IGBT and large modules
- Plasma and Electrostatic Paint

The EDR's Solid State Relays (SSR) use proprietary and unique design to deliver fast, reliable, bounce-free switching in a compact SIP package. They are an ideal solid-state replacement for large reed and electromechanical (EM) relays. Compared to these old electromagnetic technology, the EDR's SSRs offer significantly lower drive current, small package size, superb speed, high power DC commutation, no susceptibility to magnetic interaction and solid state reliability. All of these are key requirements for the design of today's complex low-power, fast and long-lasting products.

EDR's family of "T" – type Solid State Relays/Switches designed for speed, the D3SxxTxx and more powerful D4SxxTxx relays/switches have the capacity to efficiently switch DC or AC and can deliver a single lesser than 0.7 μS pulse width. The "T" family SSR, a half-bridge MOSFET/IGBT driver is designed to operate at frequencies up to 800 KHz (8 KHz PWM for 1% to 100% duty cycle) and is an ideal choice for high-speed applications such as motor control, SMPS (switch mode power supplies), laser diode driver or a high frequency ultrasound cleaner. The "T" relay/switch can be used in pairs for a full-bridge operation, or triplets in three-phase brushless DC motor driver applications.

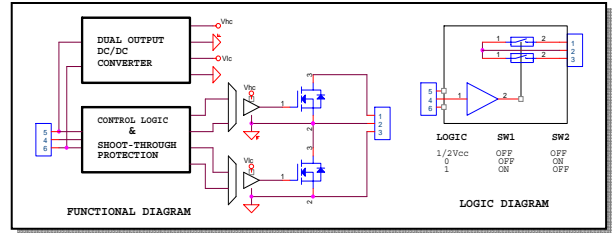
A 1.2 MHz relay/switch is also available with ability to deliver a powerful a > 100 nS pulse.

Functional diagrams of the “T” family

EDR’s solid-state relays combined our state-of-the-art SIP6, SIP7 and SIP9 (a custom and with screw-type terminals enclosures are available) encapsulated, vertical-construction packaging with high performance to give our customers a reliable product with a significant saving in board space compare to other relays. EDR rates relays by the maximum current and no a heat sink required. We believe that removes confusing of what a relay is capable of. Below is a functional diagram of the “T” family and we can make for you a relay with any voltage and current, please be reasonable.

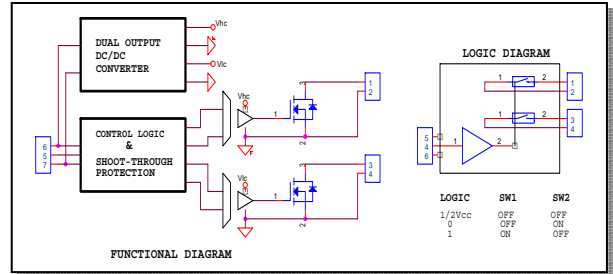
It is a **1 FORM C** or SPDT relay – D3GvvvTDaa
A “TD” is for DC only applications.

“vvv” should be replaced with a required voltage,
“aa” should be replaced with a required current.



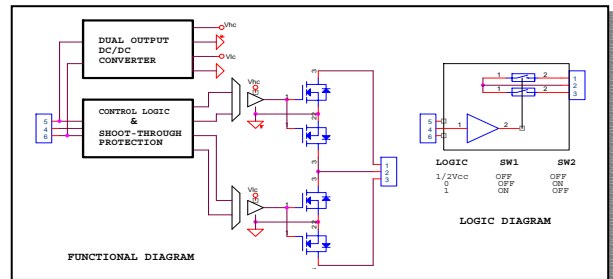
It is a **1 FORM A&B (N.O. & N.C.)** or DPST relay
-- D3GvvvDSaa and D4GvvvDSaa
A “DS” is for a dual DC only application.

“vvv” should be replaced with a required voltage,
“aa” should be replaced with a required current.



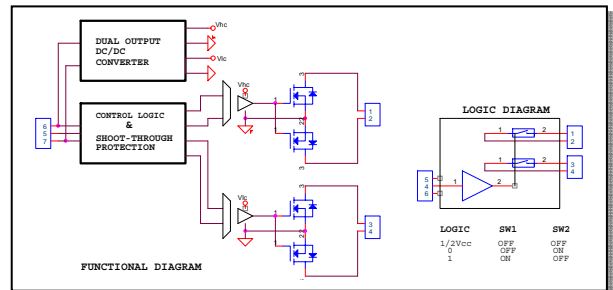
It is a **1 FORM C** or SPDT relay – D3GvvvTAaa
A “TA” is for DC and AC applications.

“vvv” should be replaced with a required voltage,
“aa” should be replaced with a required current.



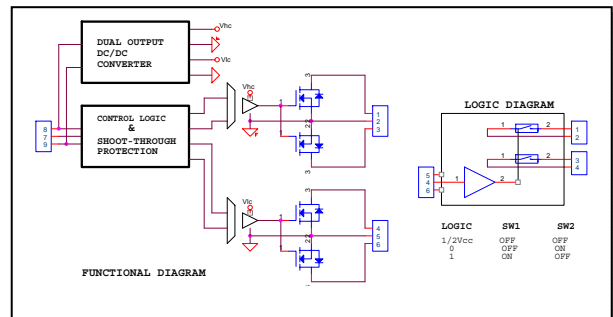
It is a **1 FORM A&B (N.O. & N.C.)** or DPST relay
-- D3GvvvASaaP and D4GvvvASaaP
A “AS” is for a dual either DC or AC applications.

“vvv” should be replaced with a required voltage,
“aa” should be replaced with a required current.



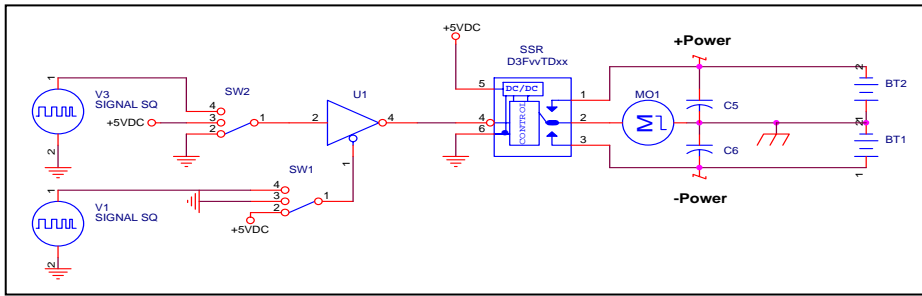
It is a **1 FORM A&B (N.O. & N.C.)** or DPST relay
-- D3GvvvDASaaP and D4GvvvDASaaP
A “DAS” is for a dual either DC or AC applications.

“vvv” should be replaced with a required voltage,
“aa” should be replaced with a required current.

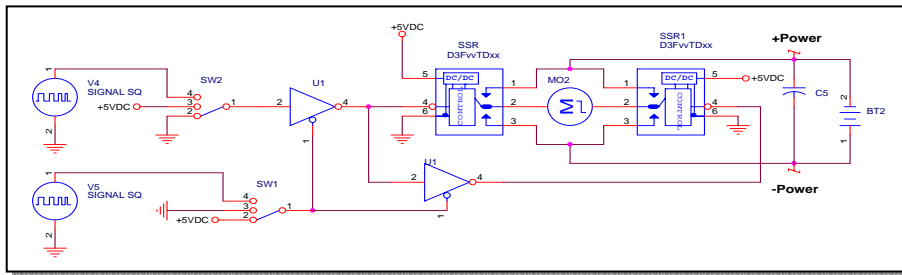


CAUTION: These devices are sensitive to electrostatic discharges; follow proper IC Handling Procedures. 1-800-336-1-EDR (for sales) or 502-933-8660; EDR and VSHOLDING are a register trademarks of VS Holding LLC , 1983 and 1994 respectfully. All Rights Reserved.

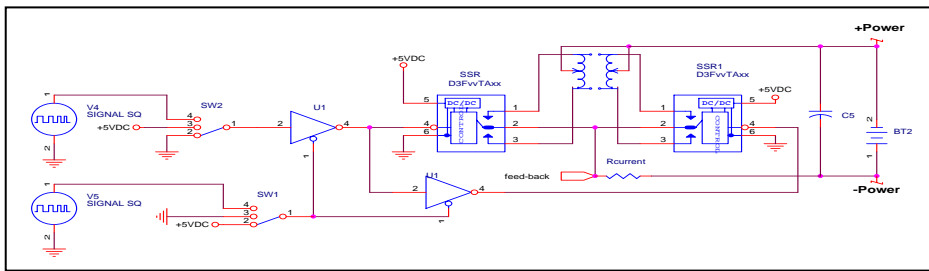
Typical applications



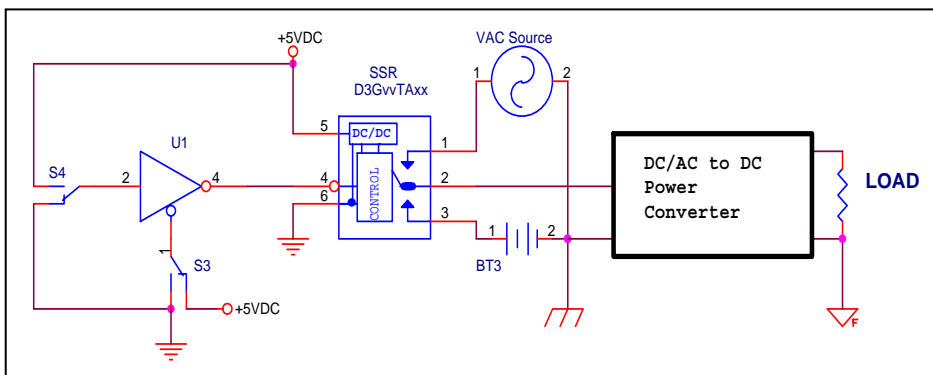
A **1 FORM C** or SPDT relay – D3GvvvTDaa can be use as a general-purpose motor driver with a dual-power supply Capable of operating in extremely harsh environments, this device can withstand high ambient temperature, output overload, and repeated power supply transient voltages without damage. The relay can be used in triplets in three-phase brushless DC motor-driver applications.



EDR's "T" relays can be used in pairs to drive both windings of a bipolar stepper motor or bi-directional control for full-bridge operation with a single-output power source.

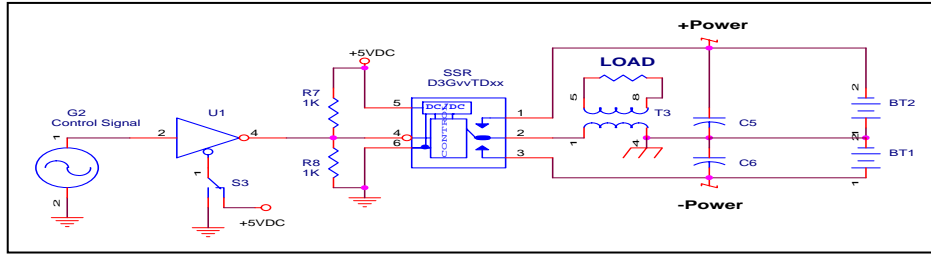


Stepper-Motor Driver

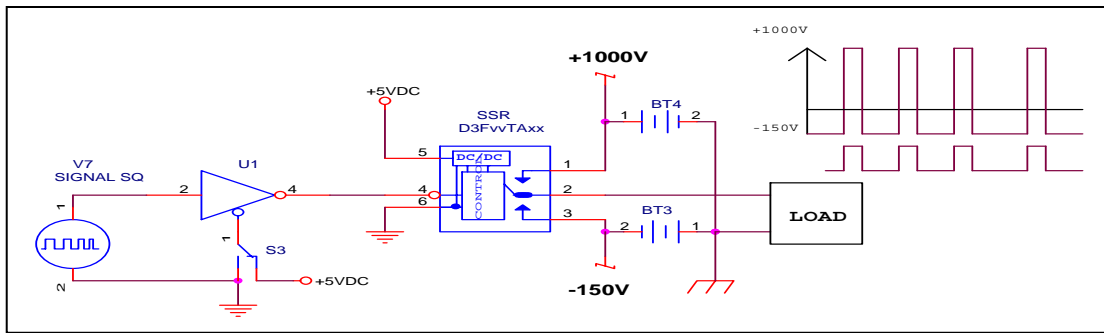


VAC and VDC power management in systems with a battery back-up

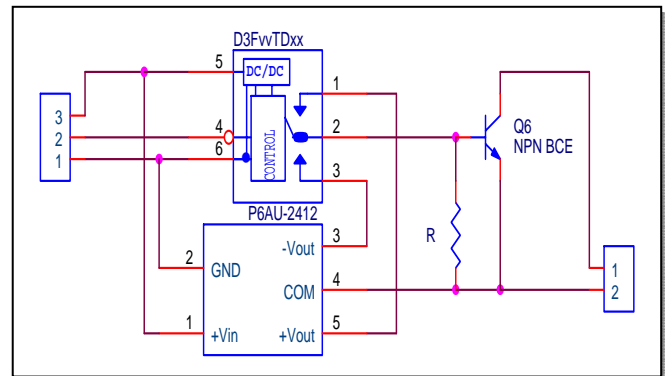
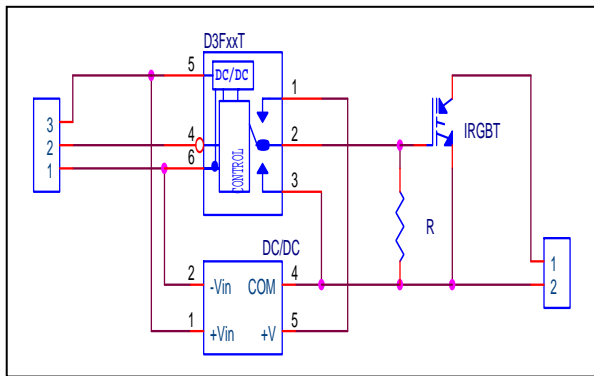
Typical applications (con't)



Low-noise, high-power driver for DC/DC converter and high frequency ultrasounds



Generating a high-speed, bi-polar signal for electrostatic painting, plasma and etching



Drive for a powerful, high-speed IGBT

and bi-polar transistor

EDR's the "T" family of cost-effective Solid State Relays/Switches has opened endless application possibilities and especially significant in view of the increase use of microprocessor-based controls. Simplicity of interfacing of a micro level of controlling power with a multi-kilowatts load gave an engineer the tool for designing today's and tomorrow's equipment. EDR's high-speed relay/switches compatible with many direct driving integrated devices and an input-output galvanic isolation has made them important and valuable components in a new design.

Electronic Design & Research is the front-runner in developing solid-state relays and breakers. Since 1998 we offer consistently to the growing customer based superior devices. From a low-cost D1L-type relay to a sophisticated VS092011P200A8/24/NN an intelligent breaker EDR offers power devices to meet any of your wishful thinking project.