

- Latest generation MOSFET technology
- Ultra low on-state resistance
- Innovative isolated driver ensures fast power transistor turn on and off and thus low power transient
- Ultra low output leakage current
- Low control current consumption
- Triggered control input to avoid linear control risks
- Low conducted and radiated disturbances



Part Number	Description
S20DC30	30A, 200 Vdc Solid-State Relay

**S**                      **20**                      **DC**                      **30**  
 |                      |                      |                      |  
*Series*                      *Line Voltage<sup>1</sup>*                      *Switch Type<sup>2</sup>*                      *Output Current – Amps*

1) Line Voltage (peak):  $20 = 200 \text{ Vdc}$   
2) Switch Type: DC = DC

(+25°C ambient temperature unless otherwise specified)

	Min	Max	Units
Control Range	4.5	32	Vdc
Input Current Range	25	42	mAdc
Typical Turn-On Voltage	4.3		Vdc
Must Turn-Off Voltage	1		Vdc
Reverse Voltage		32	Vdc
Reverse Leakage Current		100	μA

Technical drawing of the 100g weight, showing side and top views with dimensions in inches (mm).

**Side View Dimensions:**

- Total height: 1.10 (28)
- Distance from top to first shoulder: 0.89 (22.8)
- Distance from top to second shoulder: 0.77 (19.6)
- Total width: Ø0.5
- Distance from bottom to first shoulder: 1.01 (25.8)

**Top View Dimensions:**

- Overall width: 1.75 (44.5)
- Overall height: 2.29 (58.2)
- Distance between mounting holes (center-to-center): 1.10 (28)
- Distance from top edge to mounting holes: 1.87 (47.6)
- Distance from bottom edge to mounting holes: 1.7 (43.2)
- Distance between mounting holes (edge-to-edge): 1.0 (25.4)
- Distance from left edge to mounting holes: 0.29 (7.5)
- Distance from right edge to mounting holes: 0.20 (5.1)
- Mounting hole diameter: Ø4.7
- Mounting hole type: M5
- Mounting hole type: M3

**Tolerances:** Ø0.3

**Dimensions in inches (mm)**

**Weight:** 3.52 oz. (100g)

*Figure 1*

Graph of Control Current (mAde) vs. Control Voltage (V) for the 25°C operating point. The curve shows a sharp increase in current from 0 mAde at 2V to about 28 mAde at 6V, then a gradual increase to 41 mAde at 32V.

Control Voltage (V)	Control Current (mAde)
2	0
3	10
4	20
5	25
6	28
10	30
15	33
20	36
25	38
30	40
32	41

Figure 2

*Figure 3*

# **ELECTRICAL SPECIFICATIONS**

(+25°C ambient temperature unless otherwise specified)

## **OUTPUT (LOAD) SPECIFICATIONS**

	Min	Max	Units
Operating Range	0	130	Vdc
Peak Voltage		200	Vpeak
Reverse Voltage (Internal Diode)	1.5		V
Maximum Repetitive Avalanche Current	30		A
Maximum Single Pulse Avalanche Energy		315	mJ
Maximum Repetitive Pulse Avalanche Energy		20	mJ
Maximum Nominal Currents (Resistive)	30		A
Non-Repetitive Peak Overload Current	120		A
Leakage Current		100	µA <sub>dc</sub>
On-State Resistance		164	mΩ
Output Capacitance (Typical)	3.0		nF
Junction-Case Thermal Resistance	0.75		°C/W
Built-In Heat Sink Thermal Resistance (Vertically Mounted)	8		°C/W
Heat Sink Thermal Time Constant	10		min
Control Inputs/Power Outputs			
Insulation Voltage	4		kV
Turn-On Time	10		µs
Turn-On Delay	600		µs
Turn-Off Time	10		µs
Turn-Off Delay	100		µs
On-Off Frequency	700		Hz

## **TIME DIAGRAM**

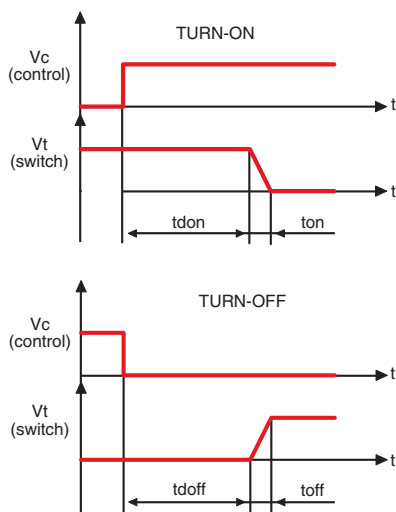


Figure 6

## **HIGH SIDE WIRING DIAGRAM (Load Connected to “—”)**

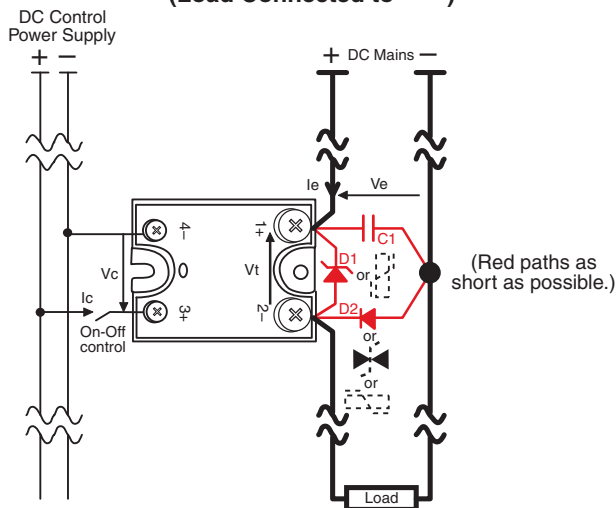


Figure 4

## **LOW SIDE WIRING DIAGRAM (Load Connected to “+”)**

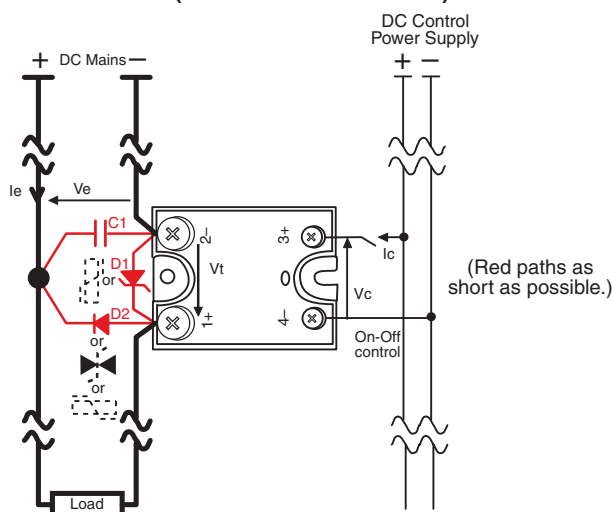


Figure 5

## **ON RESISTANCE VS. TEMPERATURE**

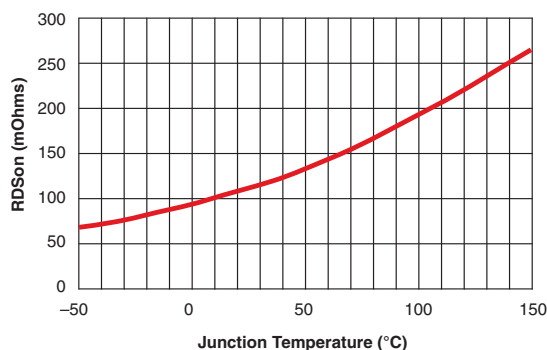


Figure 7

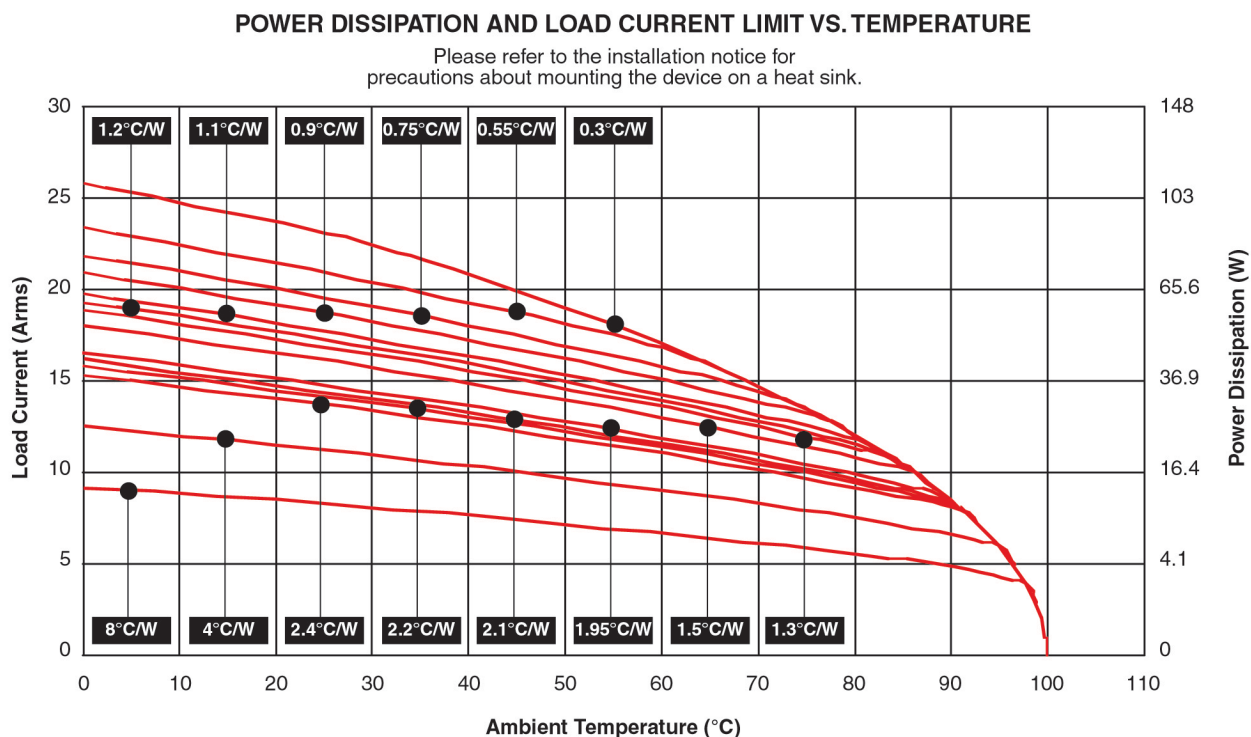


Figure 8

#### GENERAL SPECIFICATIONS

(+25°C ambient temperature unless otherwise specified)

##### ENVIRONMENTAL SPECIFICATIONS

	Min	Max	Units
Operating Temperature	-40	+90	°C
Storage Temperature	-40	+100	°C
Input-Output Isolation	4000		Vrms
Insulation Resistance	1		GΩ
Insulation Capacitance	8		pF
Junction Temperature		150	°C

##### CONNECTIONS

	Power	Control
Screwdriver	Phillips NR2	Phillips NR1
Tightening Torque	1.8 N.m	0.8 N.m
Insulated crimp terminals (Round Tabs, Eyelet Type)	M5	M3

##### MISCELLANEOUS

Display	Green LED (ON)
Housing	UL94V0
Mounting	2 screws (M4x12mm)
Noise Level	No audible noise

#### GENERAL

Standards	IEC60947-1
Protection Level	IP00
Protection Against Direct Touch	None
CE Marking	Yes

#### E.M.C. EMISSION

Radiated & Conducted Disturbances	NFEN55011
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#### PROTECTIVE COVER AVAILABLE

Add -14 to part number

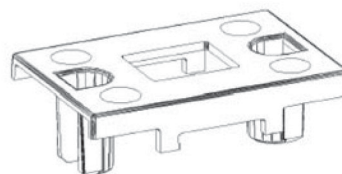


Figure 9

#### NOTES

1. For additional/custom options, contact factory.

# Mouser Electronics

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