

### FEATURES/BENEFITS

- 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

### Part Number Explanation

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

#### NOTES

- 1) Line Voltage (peak): 20 = 200 Vdc  
2) Switch Type: DC = DC

### ELECTRICAL SPECIFICATIONS

(+25°C ambient temperature unless otherwise specified)

#### INPUT (CONTROL) SPECIFICATIONS

	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

### CONTROL CHARACTERISTIC

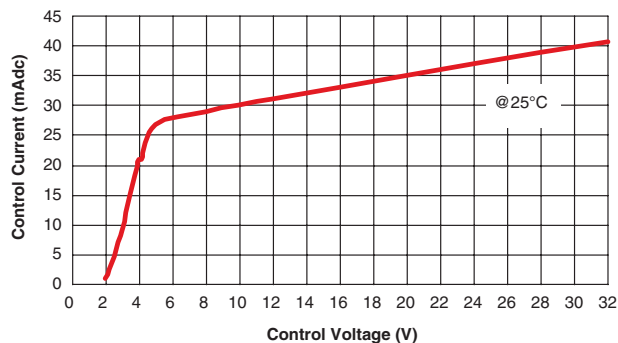


Figure 2

### MECHANICAL SPECIFICATION

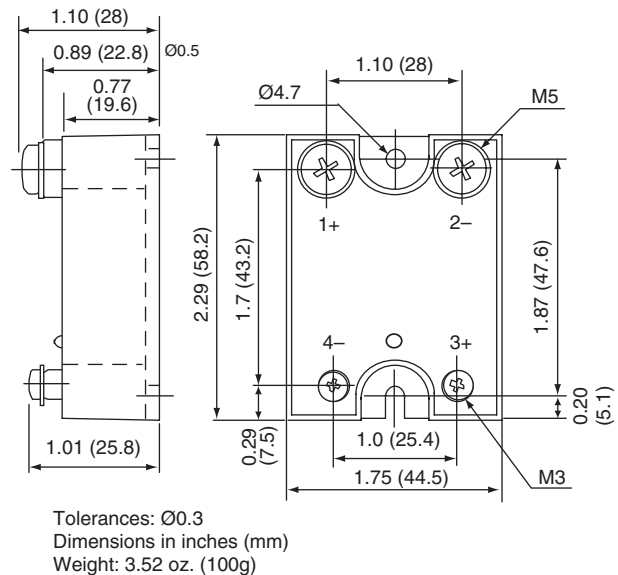


Figure 1

### BLOCK DIAGRAM

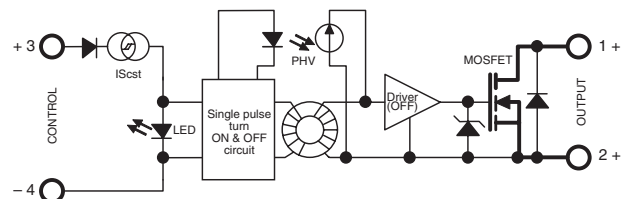


Figure 3

# **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**

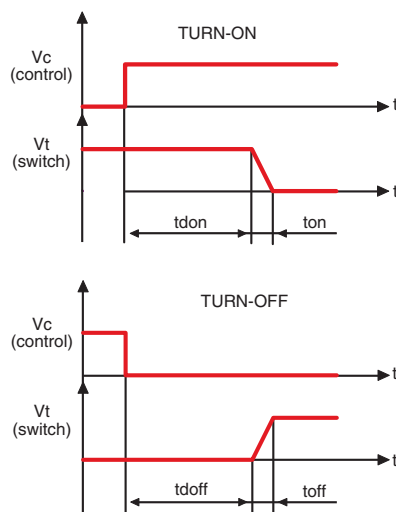


Figure 6

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

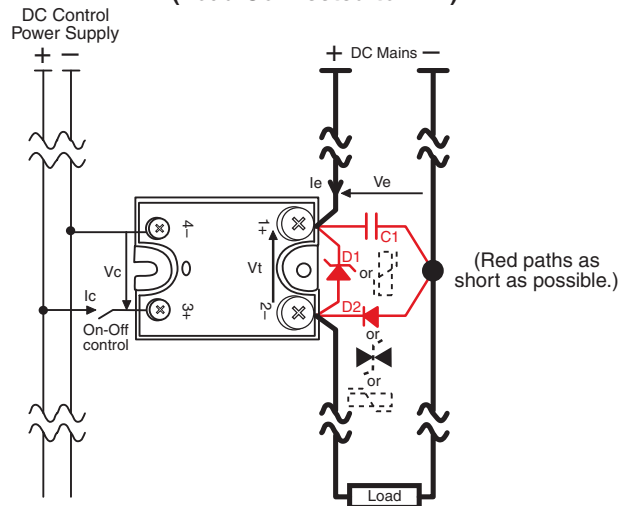


Figure 4

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

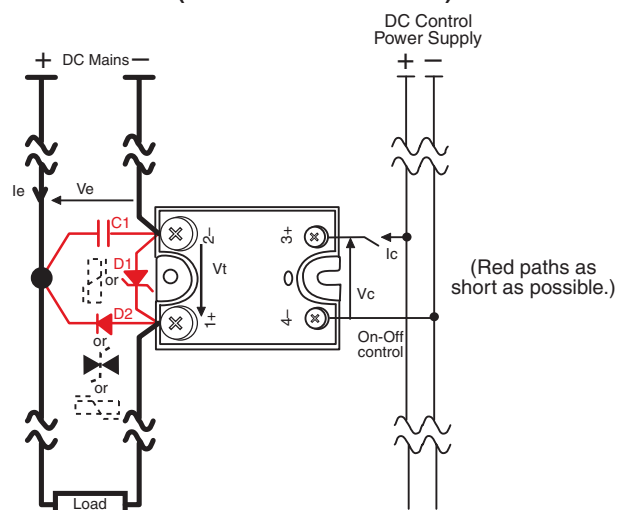


Figure 5

## **ON RESISTANCE VS. TEMPERATURE**

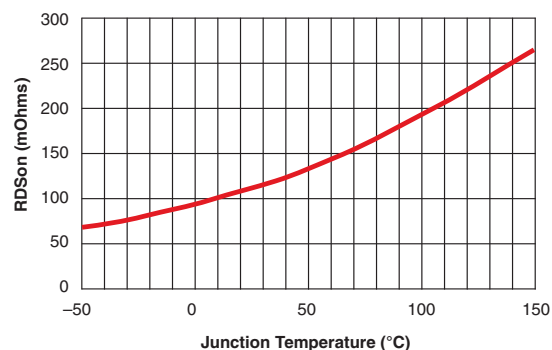
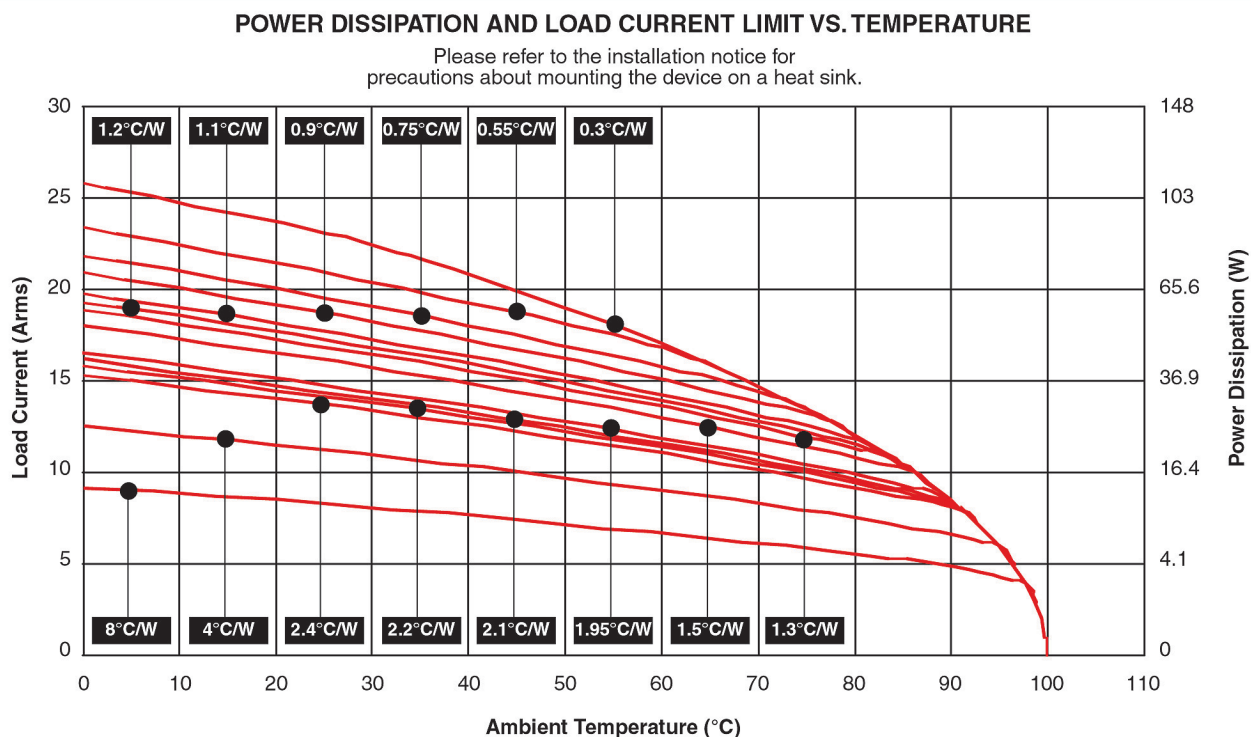


Figure 7



#### 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

#### PROTECTIVE COVER AVAILABLE

Add -14 to part number

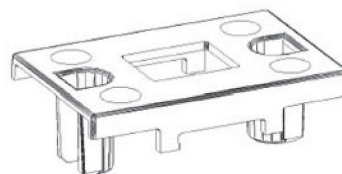


Figure 9

#### NOTES

1. For additional/custom options, contact factory.