

- 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 Explanation

S **20** **DC** **30**
 | | | |
Series *Line Voltage¹* *Switch Type²* *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: $\varnothing 0.5$
- Distance from bottom to first shoulder: 1.01 (25.8)

Top View Dimensions:

- Distance between mounting holes: 1.10 (28)
- Mounting hole diameter: $\varnothing 4.7$
- Mounting hole type: M5
- Distance from top edge to mounting holes: 2.29 (58.2)
- Distance from top edge to center of mounting holes: 1.7 (43.2)
- Distance from top edge to center of mounting holes (alternative): 1.87 (47.6)
- Distance from bottom edge to mounting holes: 0.29 (7.5)
- Distance from bottom edge to center of mounting holes: 1.0 (25.4)
- Distance from bottom edge to center of mounting holes (alternative): 1.75 (44.5)
- Distance between mounting holes (alternative): 1.75 (44.5)
- Mounting hole type: M3
- Distance from bottom edge to mounting holes (alternative): 0.20 (5.1)

Mounting Holes:

- Top left: 1+
- Top right: 2-
- Bottom left: 4-
- Bottom right: 3+

Tolerances: $\varnothing 0.3$

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, followed by a gradual, nearly linear increase to 40 mAde at 32V.

Control Voltage (V)	Control Current (mAde)
2	0
3	10
4	20
5	25
6	28
10	30
20	35
30	39
32	40

Figure 2

The diagram shows a control circuit. On the left, a 'CONTROL' section has two terminals: '+3' and '-4'. The '+3' terminal is connected to a diode pointing right, followed by a component labeled 'ICsct'. The '-4' terminal is connected to a diode pointing left, followed by an 'LED'. Both of these diode branches connect to a central block labeled 'Single pulse turn ON & OFF circuit'. This block has two outputs: one goes to a component labeled 'PHV' (which has a diode pointing left and a circle with a dot), and the other goes to a 'Driver (OFF)' block. The 'Driver (OFF)' block has two outputs: one goes to the gate of a MOSFET, and the other goes to a diode pointing right. The MOSFET's source is connected to terminal '2' and its drain is connected to terminal '1'. There is also a diode pointing left between the MOSFET's drain and terminal '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 _{dc}
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

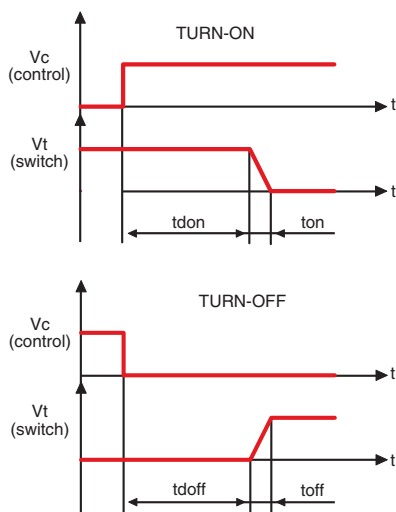


Figure 6

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

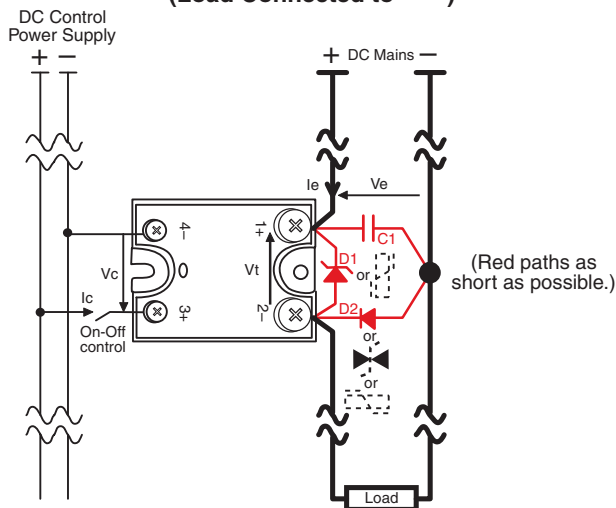


Figure 4

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

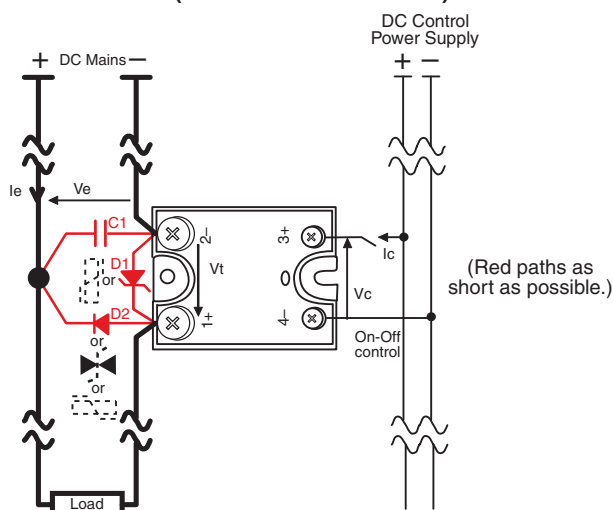


Figure 5

ON RESISTANCE VS. TEMPERATURE

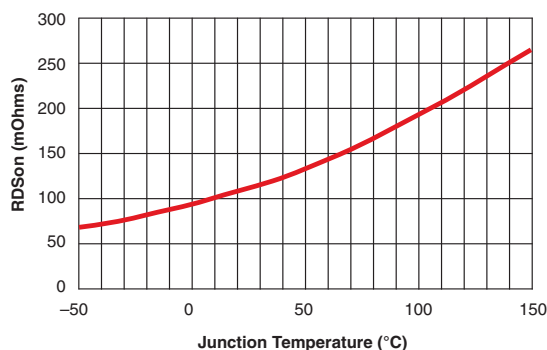


Figure 7

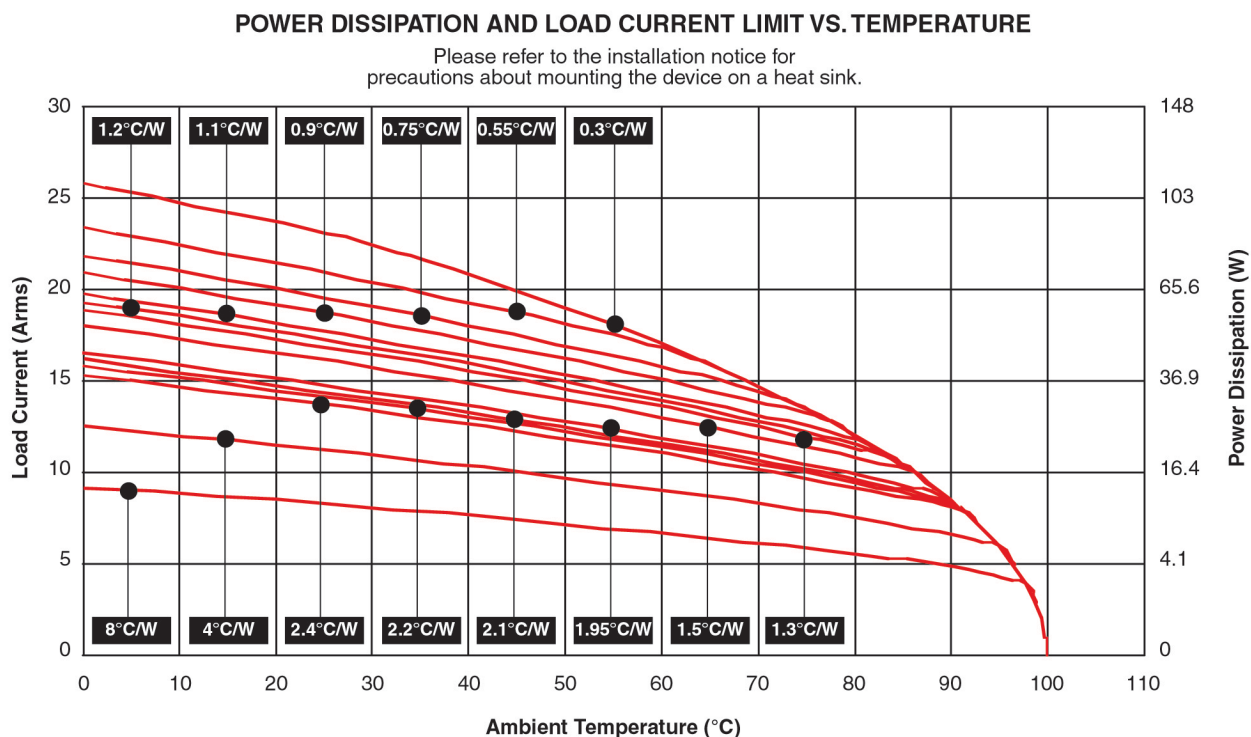


Figure 8

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

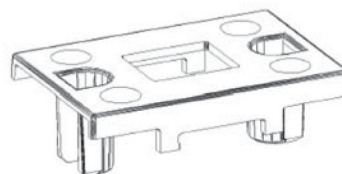


Figure 9

NOTES

1. For additional/custom options, contact factory.