TELEDYNE RELAYS
Everywhereyoulook™

Series S60DC40

Output to 40A, 600 Vdc
DC Solid-State Relay

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
S60DC40	40A, 600 Vdc Solid-State Relay

Part Number Explanation

S	60	DC	40
Series	*Line Voltage*[1]	*Switch Type*[2]	*Output Current – Amps*

NOTES
1) Line Voltage (peak): 60 = 600 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

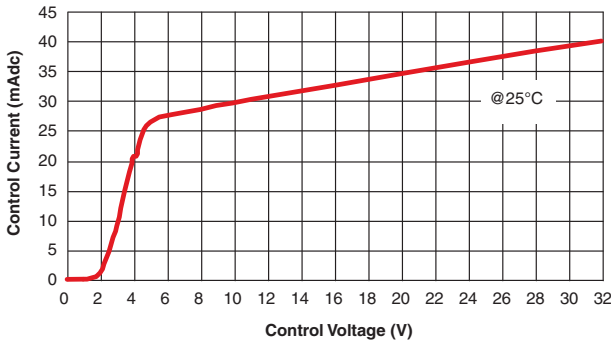
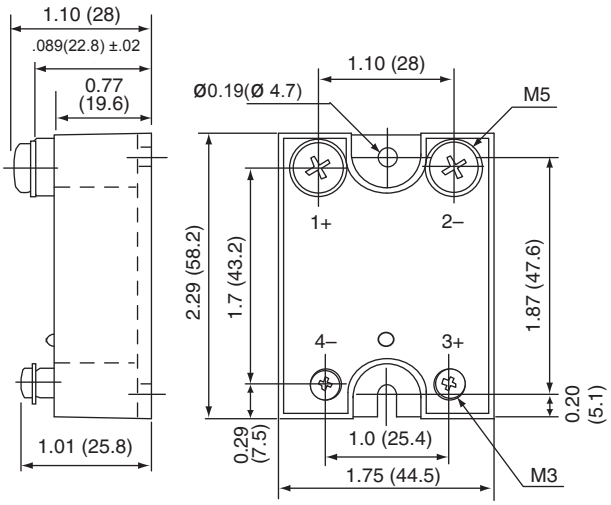


Figure 2

MECHANICAL SPECIFICATION



Tolerances: ±.001
Dimensions in inches (mm)
Weight: 3.52 oz. (100g)

Figure 1

BLOCK DIAGRAM

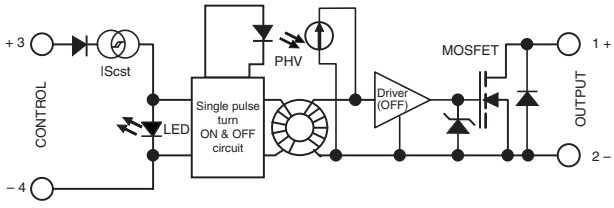


Figure 3

ELECTRICAL SPECIFICATIONS

(+25°C ambient temperature unless otherwise specified)

OUTPUT (LOAD) SPECIFICATIONS

	Min	Max	Units
Operating Range	0	350*	Vdc
Peak Voltage		600	Vpeak
Reverse Voltage (Internal Diode)	1.2		V
Maximum Repetitive Avalanche Current		20	A
Maximum Single Pulse Avalanche Energy		1800	mJ
Maximum Repetitive Pulse Avalanche Energy		1	mJ
Maximum Nominal Currents (Resistive)		40	A
Non-Repetitive Peak Overload Current		140	A
Leakage Current		250	µAdc
On-State Resistance		70	mΩ
Output Capacitance (Typical)	2.2		nF
Junction-Case Thermal Resistance		0.4	°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

*Recommend 275 Vrms size 20 varistor as protection across the output.

HIGH SIDE WIRING DIAGRAM
(Load Connected to "—")

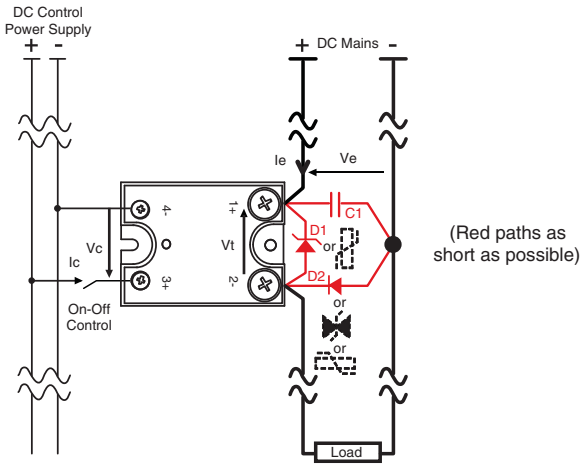


Figure 4

LOW SIDE WIRING DIAGRAM
(Load Connected to "+")

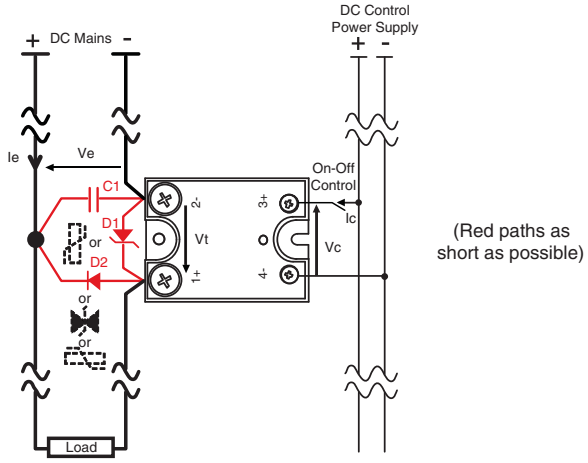


Figure 5

TIME DIAGRAMS

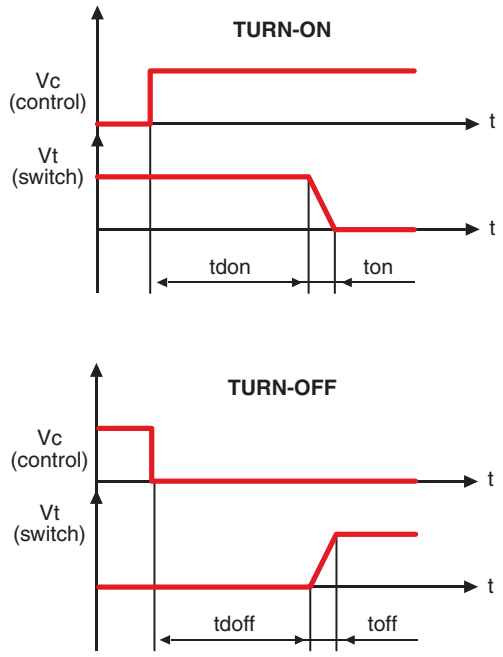


Figure 6

ON RESISTANCE VS. TEMPERATURE

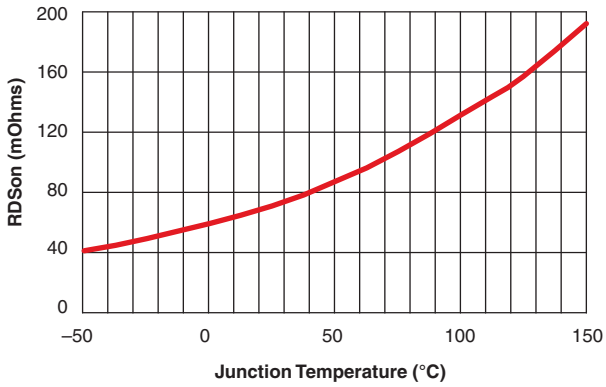


Figure 7

GENERAL SPECIFICATIONS

(+25°C ambient temperature unless otherwise specified)

ENVIRONMENTAL SPECIFICATIONS

	Min	Max	Units
Operating Temperature	–40	+90	°C
Storage Temperature	–55	+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
UL, cULUS & VDE Approvals	Pending

E.M.C. EMISSION

Radiated & Conducted Disturbances

NFEN55011

POWER DISSIPATION AND LOAD CURRENT LIMIT VS. TEMPERATURE

Please refer to the installation notice for
precautions about mounting the device on a heat sink.

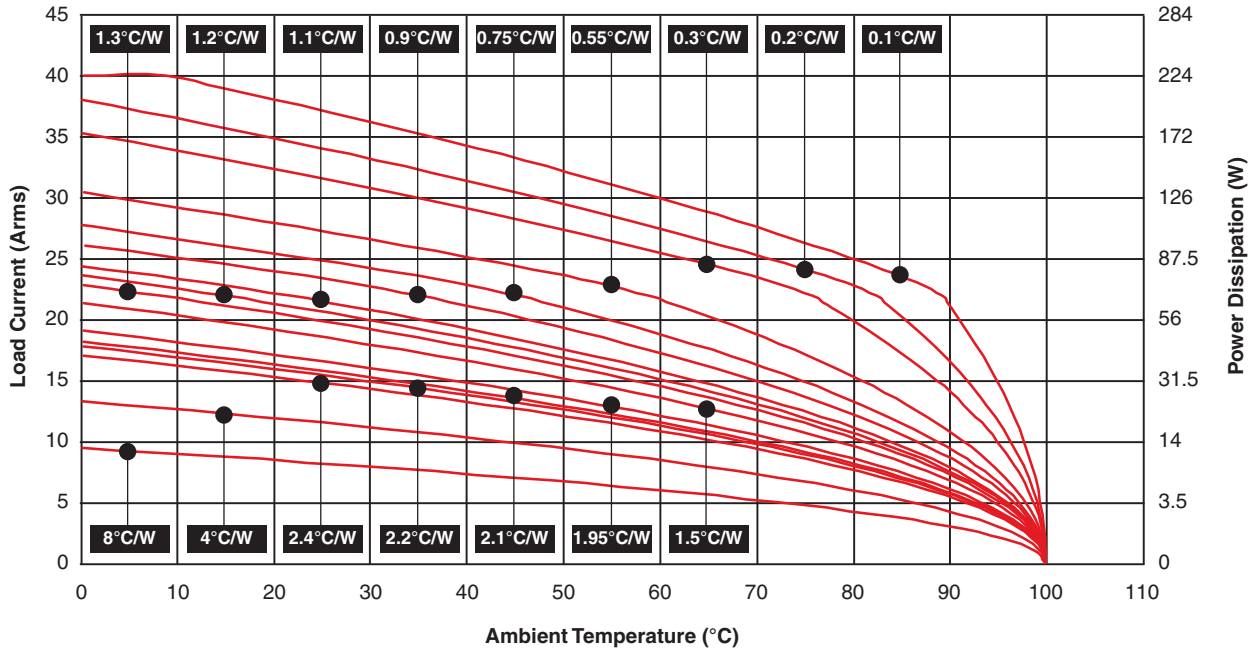


Figure 8

PROTECTIVE COVER AVAILABLE
Add -14 to part number

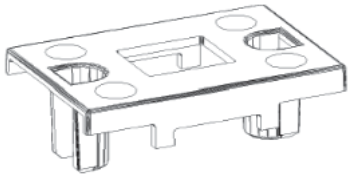
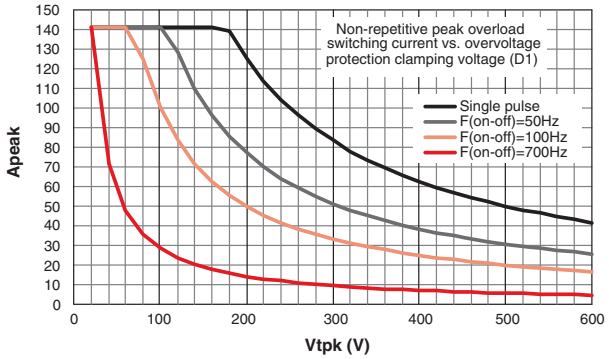


Figure 9

NOTES
1. For additional/custom options, contact factory.

CURRENT OVERLOAD CHARACTERISTICS



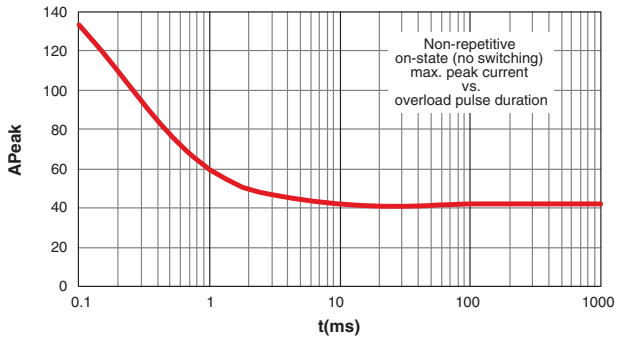


Figure 10