



PRELIMINARY DATA

**MOSFET BASED
DC SOLID-STATE RELAY
(With built-in transient voltage suppressor)**

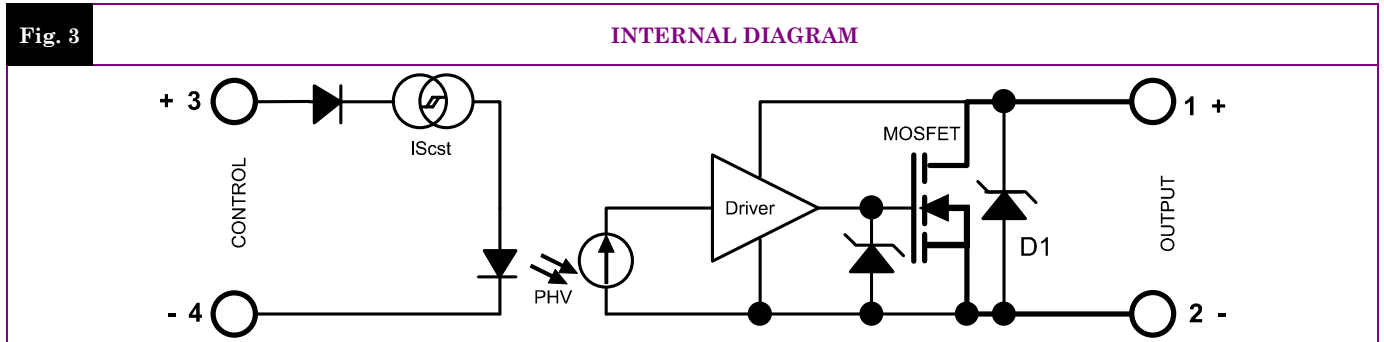
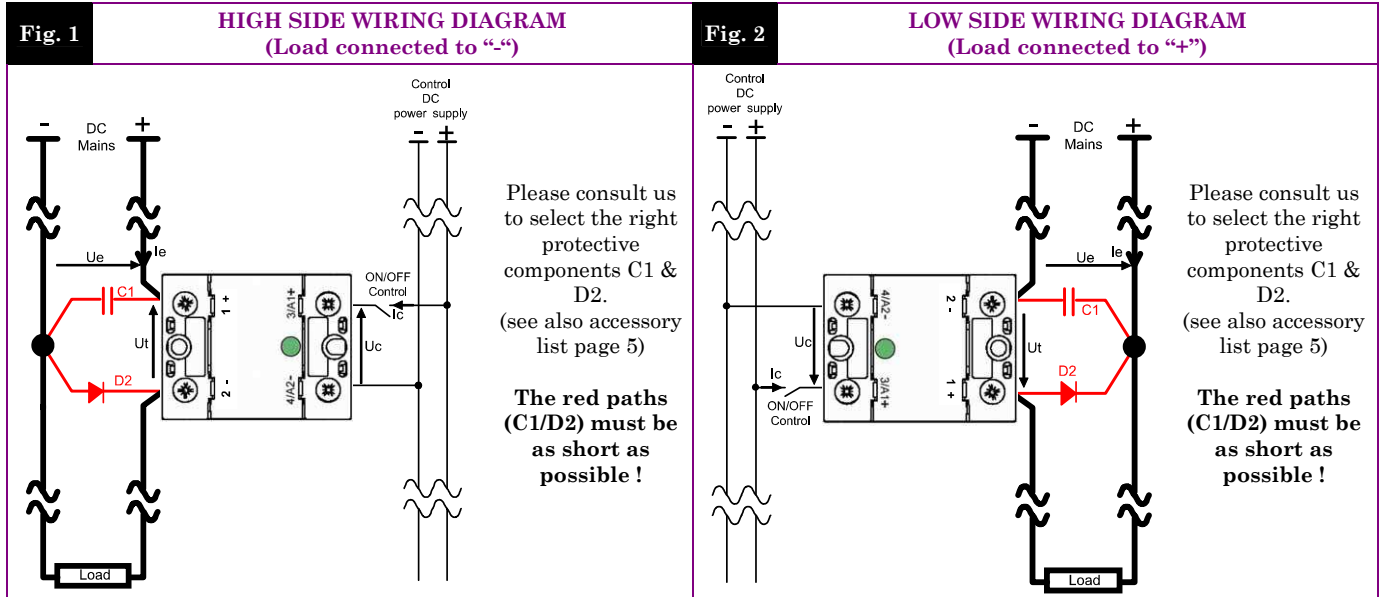
- ▶ Latest MOSFET technology generation.
- ▶ Ultra low on-state resistance.
- ▶ Low output leakage current.
- ▶ Low control current consumption.
- ▶ Built-in overvoltage protection (TVS)
- ▶ Reverse protected triggered control input to avoid linear control risks
- ▶ No radiated or conducted disturbances
- ▶ Touch protected housing IP20

SOM06075



Control voltage range	3.5-32VDC
Max transient peak voltage	75V
Max. DC Mains peak voltage	40VDC
Max. Load Current (with heatsink)	60ADC

DC Mains voltage range	Load current range	Control input voltage range	In & case / Out Insulation	Connections	Dimensions (WxHxD)	Weight
5-40VDC (75Vpeak)	Up to 60A (with heatsink)	3.5-32VDC	2.5kV	Screw terminals	45 x 58.5 x 30	80g



Proud to serve you

CONTROL INPUT CHARACTERISTICS

INPUT CIRCUIT	CHARACTERISTIC	LABEL	VALUE	INFO.	Fig. 4 CONTROL CURRENT vs. CONTROL VOLTAGE
	Nom. Control voltage	U_{cnom}	12-24VDC		
	Nom. Control current	I_{cnom}	35mADC	-100µA/°C	
	Control voltage range	U_c	3.5 – 32VDC	typical=3.3V	
	Control current consumption	I_c	32 – 35mADC	See curve	
	Releasing control voltage	U_{coffmax}	1VDC	Typical= 2.6V	
	Max. reverse control voltage	-U_{cmax}	32VDC	-I _{cmax} <100µA	
	Input impedance	R_{in}	Current limitation	See curve	

TIME CHARACTERISTICS

TIME CHARACT.	CHARACTERISTIC	LABEL	VALUE	<p>For high frequency, take 2 x I_e to calculate the heatsink; the protections must be chosen carefully. Please consult us if any.</p>
	Turn on time	ton	20µs	
	Turn on delay	tdon	20µs	
	Turn off time	toff	20µs	
	Turn off delay	tdoff	20µs	
Max. On-Off frequency	F_(on-off)	>1000Hz		

POWER OUTPUT CHARACTERISTICS

POWER CIRCUIT	CHARACTERISTIC	LABEL	VALUE	INFO.						
	Nominal voltage	U_{enom}	24VDC							
	Voltage range	U_t U_e	5-40VDC	U _{tmax} =40VDC						
	Non-repetitive peak voltage	U_{tp}	75V							
	Overvoltage protection	D1	39V (Transient voltage suppressor)	1500W / 1ms See fig.10 & 11						
	Off-state max reverse voltage drop (internal diode)	-U_t	0.92V	@I _e =75A & @U _c =0 See fig. 6						
	Maximum nominal currents	I_{e max}	<table border="1"> <tr> <th>Resistive</th> <th>Motor</th> </tr> <tr> <td>60A</td> <td>Please contact us</td> </tr> </table>	Resistive	Motor	60A	Please contact us	See fig. 9		
	Resistive	Motor								
	60A	Please contact us								
	Max. non-repetitive peak current	I_{epeak}	<table border="1"> <tr> <th>Switch OFF D<1%</th> <th>Switch OFF Fmax</th> <th>ON-state</th> </tr> <tr> <td>294A</td> <td>60A</td> <td>750A</td> </tr> </table>	Switch OFF D<1%	Switch OFF Fmax	ON-state	294A	60A	750A	@T _c =100°C @T _j =175°C @U _{tp} (See fig. 8)
	Switch OFF D<1%	Switch OFF Fmax	ON-state							
	294A	60A	750A							
	Min. load current	I_{emin}	5mA							
	Max. leakage current	I_{elk max}	3mA	@U _{tmax} @T _{jmax}						
	Max. on-state resistance	RD_{son}	4.5mOhms @T _j =25°C	8.2mOhms @T _j =125°C	@I _{emax}					
	Typ. output capacitance	C_{out}	1.5nF		@U _{tp}					
	Junction/case thermal resistance per power element	R_{thjc}	1.2K/W							
	Built-in heatsink thermal resistance vertically mounted	R_{thra}	10K/W		@ΔT _{ra} =75°C					
	Heatsink thermal time constant	T_{thra}	10 minutes		@ΔT _{ra} =60°C					
	Control inputs/power outputs insulation voltage	U_{imp}	2.5kV							
	Inputs/case insulation voltage	U_{imp}	2.5kV							
	Outputs/case insulation voltage	U_{imp}	2.5kV							
	Isolation resistance	R_{io}	1GΩ							
	Isolation capacitance	C_{io}	<8pF							
	Maximum junction temperature	T_{jmax}	175°C							
Storage ambient temperature	T_{stg}	-40->+100°C								
Operating ambient temperature	T_{amb}	-25->+90°C		See fig. 9						
Max. case temperature	T_c	100°C								



OUTPUT SWITCH CHARACTERISTIC CURVES

Fig. 5 ON RESISTANCE VS JUNCTION TEMPERATURE

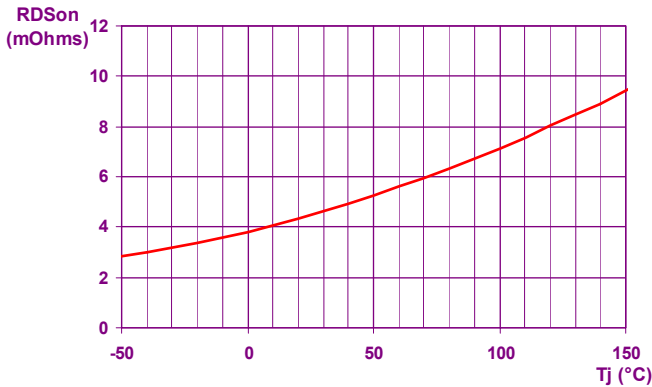


Fig. 6 REVERSE VOLTAGE DROP VS REVERSE CURRENT

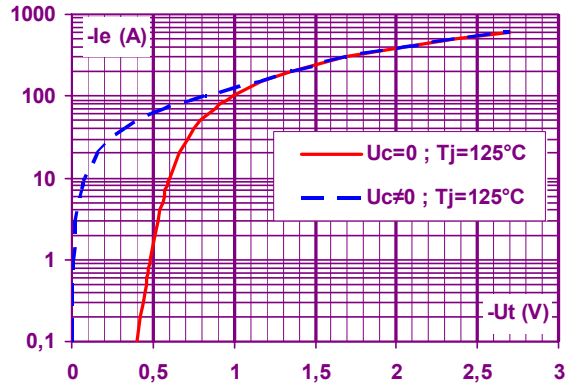


Fig. 7 POWER ELEMENT TRANSIENT THERMAL IMPEDANCE vs. PULSE DURATION

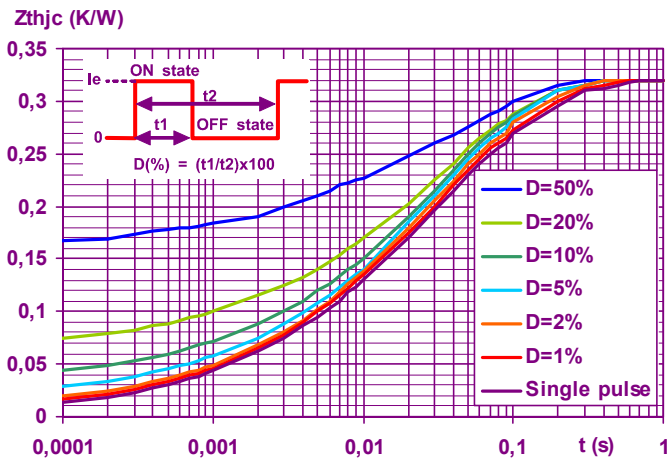


Fig. 8 ON-STATE PEAK OVERLOAD CURRENT vs. PULSE DURATION

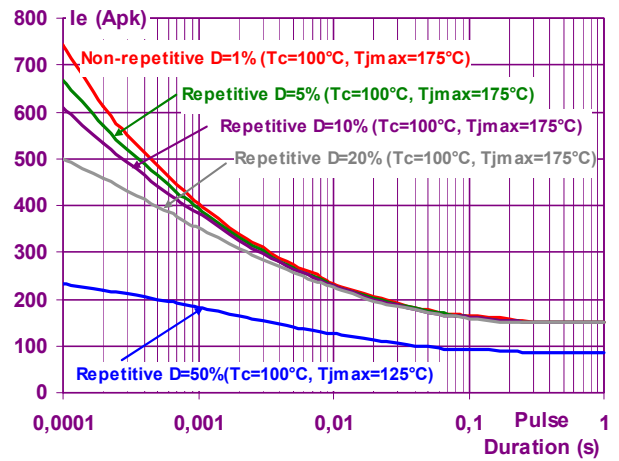
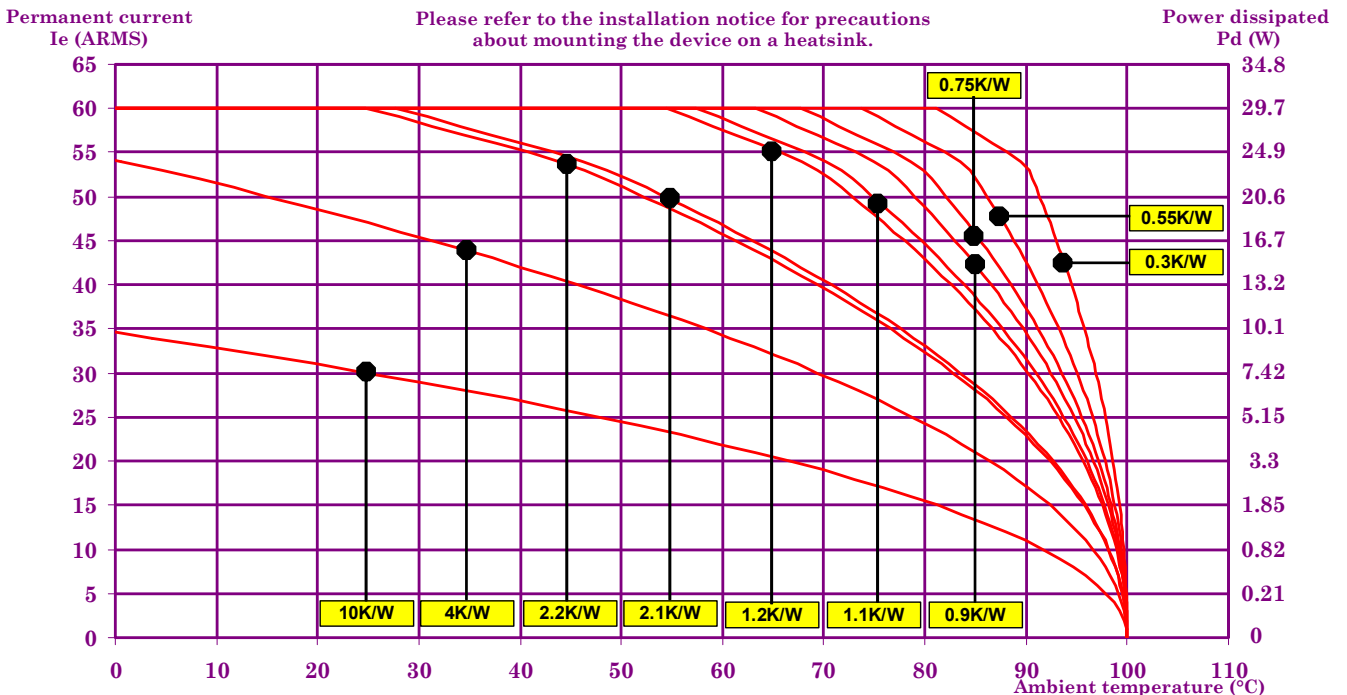


Fig. 9 POWER DISSIPATED AND LOAD CURRENT LIMIT VS TEMPERATURE



10K/W = No Heatsink / 1LD12020
2.1K/W = WF210000
0.9K/W = WF115100

4K/W = 150x150x3mm aluminium sheet
1.2K/W = WF121000
0.75K/W = WF070000

2.2K/W = WF262100 / WF151200
1.1K/W = WF131100
0.55K/W = WF050000

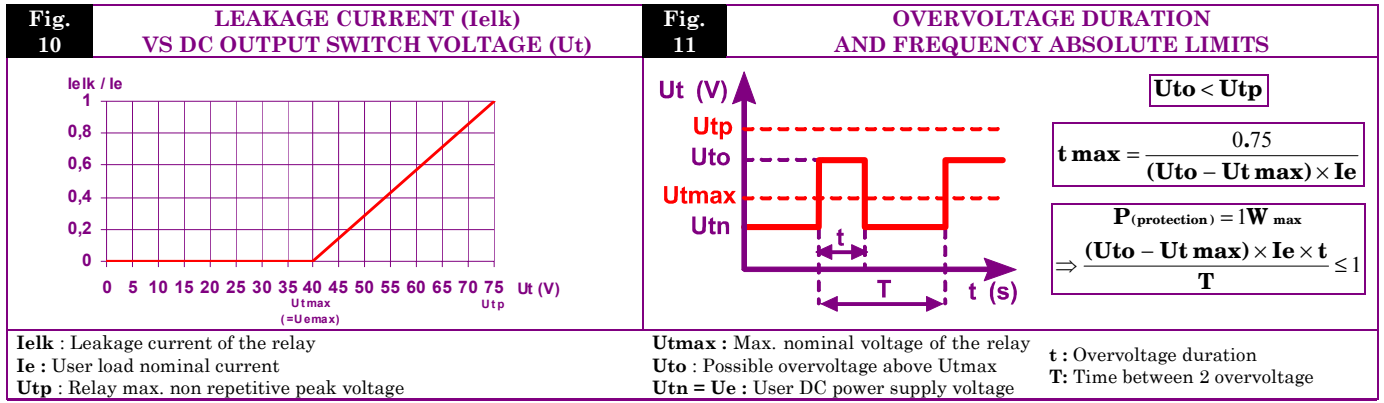
0.3K/W = WF031100

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



PRELIMINARY DATA

BUILT-IN OVERVOLTAGE PROTECTION CHARACTERISTICS



GENERAL INFORMATION

CONNECTIONS	Connections		Power	Control	
	Screwdriver advised		POZIDRIV2		
	Min and max tightening torque		2 N.m	1.2 N.m	
	Insulated crimp terminals (round tabs, eyelet type)		M5	M4	
MISC.	Display		Green LED (indicates relay has switched ON)		
	Housing		UL94V0		
	Mounting		2 screws (M4x12mm ; tightening = 1.2N.m)		See mounting sheet
	Noise level		None		
	Weight		80g		

STANDARDS

GENERAL	Standards		IEC60947-1		
	Protection level		IP20		
	Protection against direct touch		Yes		
	CE marking		Yes		
	UL, cULUS and VDE approvals		Pending		

E.M.C. IMMUNITY	TYPE OF TEST	STANDARD	LEVEL	EFFECT
	E.S.D. (Electrostatic discharges)	EN61000-4-2	Pending	?
	Radiated electromagnetic fields	EN61000-4-3	Pending	?
	Fast transients bursts	EN61000-4-4	Pending	?
	Electric chocks	EN61000-4-5	Pending	?
	Voltage drop	EN61000-4-11	-	

E.M.C. EMISSION	Radiated and conducted disturbances	NFEN55011	Pending	
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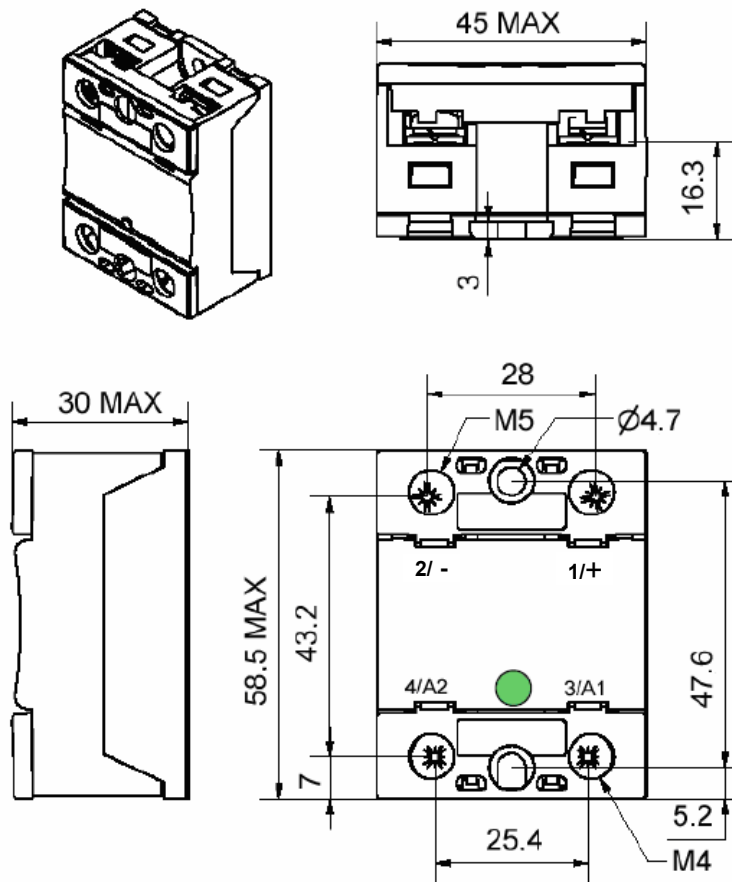


PRELIMINARY DATA

DIMENSIONS AND ACCESSORIES

Fig. 12

DIMENSIONS (mm)



ACCESSORIES

FLAT TAB CONNECTION ADAPTORS
1L587000

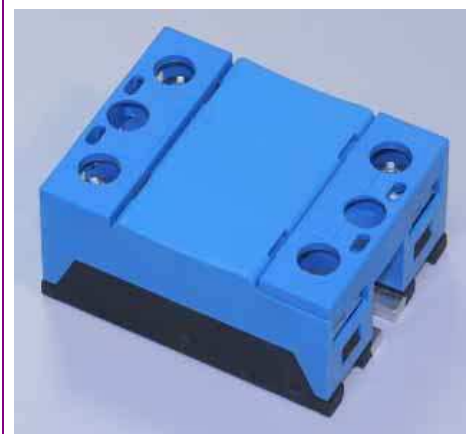


READY TO USE OVERVOLTAGE PROTECTION
ESO01000

(Please check our website for availability)

This device includes a diode (D2) and a capacitor (C1) suitable for most of the DC application.

To be mounted close to the SOM.



Please consult our website for other accessory references (Heatsinks, mounting adaptors, thermal grease...)



ISO 9001
N° 1993/1106a

ASSOCIATION
FRANÇAISE POUR
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LA QUALITÉ