



**PRELIMINARY DATA**

**IGBT BASED  
DC SOLID-STATE RELAY**

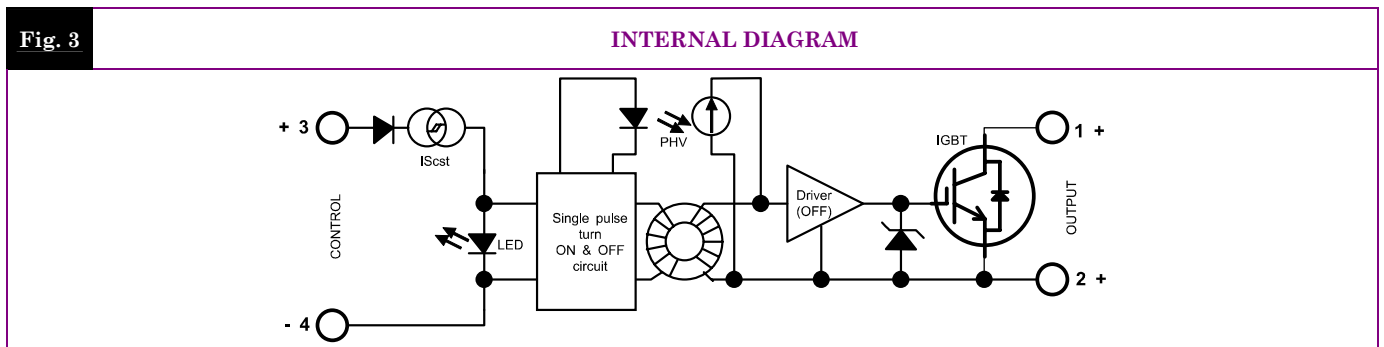
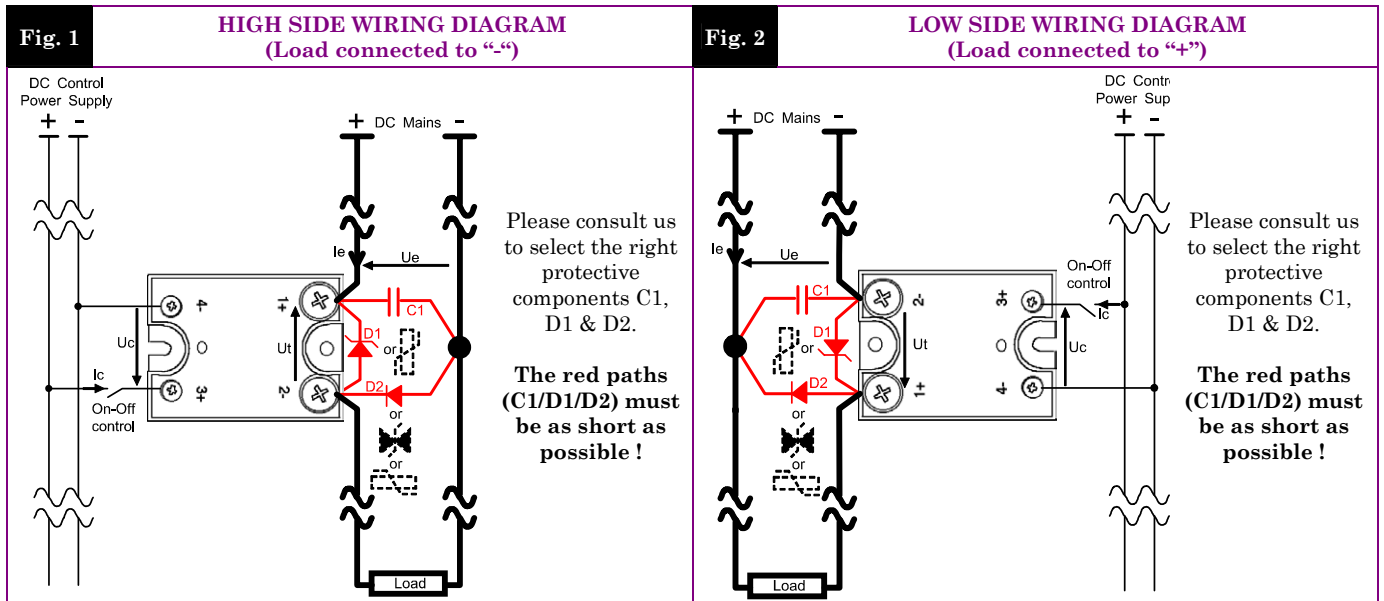
- ▶ Latest high voltage IGBT technology generation.
- ▶ New innovative isolated driver ensuring fast power transistor turn on and off therefore low power transient.
- ▶ Ultra low output leakage current
- ▶ Low control current consumption
- ▶ Triggered control input to avoid linear control risks
- ▶ Low conducted and radiated disturbances

**SCI0100600**



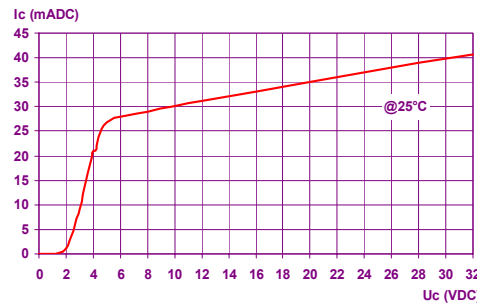
Control voltage range	<b>4.5-32VDC</b>
Max transient peak voltage	<b>600V</b>
Advised max. DC Mains peak voltage	<b>350VDC</b>
Max. Load Current (with heatsink)	<b>100ADC</b>

DC Mains voltage range	Load current range	Control input voltage range	In & case / Out Insulation	Connections	Dimensions (WxHxD)	Weight
350VDC Max Advised (Depends on protection clamping voltage)	0 to 100A (with heatsink)	4.5-32VDC	4kV	M3 round tabs M5 round tabs	44.5 x 58.2 x 27 (mm)	100g

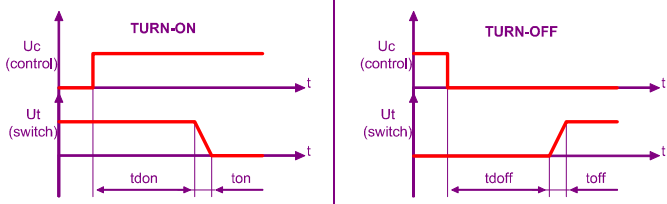


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**CONTROL INPUT CHARACTERISTICS**

INPUT CIRCUIT	CHARACTERISTIC	LABEL	VALUE	INFO.	<b>Fig. 4</b> <b>CONTROL CURRENT vs. CONTROL VOLTAGE</b> 
	Nom. Control voltage	<b>Ucnom</b>	12-24VDC		
	Nom. Control current	<b>Icnom</b>	35mADC		
	Control voltage range	<b>Uc</b>	4.5 – 32VDC	typical=4.3V	
	Control current consumption	<b>Ic</b>	25 – 42mADC	See curve	
	Releasing control voltage	<b>Ucoffmax</b>	1VDC	Typical= 3.5V	
	Max. reverse control voltage	<b>-Ucmax</b>	32VDC	-Icmax <100µA	
	Input impedance	<b>Rin</b>	Current limitation	See curve	

**TIME CHARACTERISTICS**

TIME CHARACT.	CHARACTERISTIC	LABEL	VALUE		
	Turn on time	<b>ton</b>	10µs		
	Turn on delay	<b>tdon</b>	600µs		
	Turn off time	<b>toff</b>	10µs		
	Turn off delay	<b>tdoff</b>	100µs		
Max. On-Off frequency	<b>F(on-off)</b>	700Hz			

**POWER OUTPUT CHARACTERISTICS**

POWER CIRCUIT	CHARACTERISTIC		LABEL	VALUE	INFO.						
	Mains voltage range		<b>Ut</b>   <b>Ue</b>	<b>Min = VCEsat</b> <b>Max (Advised) = 350VDC</b>	Depends on protection clamping voltage (D1)						
	Non-repetitive peak voltage		<b>Utp</b>	600V							
	Overvoltage protection		<b>D1</b>	Not integrated A voltage clamping mean must be connected across the terminals 1 & 2 (see fig 1 & 2)	Please consult us to select the right protective components						
	Off-state max reverse voltage drop (internal diode)		<b>-Ut</b>	1.4V	@Ie=100A						
	Maximum nominal currents		<b>Ie max</b>	<table border="1"> <tr> <th>Resistive</th> <th>Motor</th> </tr> <tr> <td>100A</td> <td>Please contact us</td> </tr> </table>	Resistive	Motor	100A	Please contact us	<b>See fig. 9</b>		
	Resistive	Motor									
	100A	Please contact us									
	Max. non-repetitive peak current		<b>Iepeak</b>	<table border="1"> <tr> <th>Switch OFF D&lt;1%</th> <th>Switch OFF Fmax</th> <th>ON-state</th> </tr> <tr> <td>100A</td> <td>100A</td> <td>550A</td> </tr> </table>	Switch OFF D<1%	Switch OFF Fmax	ON-state	100A	100A	550A	@Tc=100°C @Tj=175°C @Utp (See fig. 8)
	Switch OFF D<1%	Switch OFF Fmax	ON-state								
	100A	100A	550A								
	Min. load current		<b>Iemin</b>	0mA							
	Max. leakage current		<b>Ielk max</b>	1mA	@Utp @Tjmax						
	Max. on-state resistance		<b>VCEsat</b>	<table border="1"> <tr> <td>1.35V @Tj=25°C</td> <td>1.45V @Tj=125°C</td> </tr> </table>	1.35V @Tj=25°C	1.45V @Tj=125°C	@Iemax				
	1.35V @Tj=25°C	1.45V @Tj=125°C									
	Typ. output capacitance		<b>Cout</b>	300pF	@Utp						
	Junction/case thermal resistance		<b>Rthjc</b>	0.385K/W							
	Built-in heatsink thermal resistance vertically mounted		<b>Rthra</b>	10K/W	@ΔTra=75°C						
	Heatsink thermal time constant		<b>Tthra</b>	10 minutes	@ΔTra=60°C						
	Control inputs/power outputs insulation voltage		<b>Uimp</b>	4kV							
	Inputs/case insulation voltage		<b>Uimp</b>	4kV							
	Outputs/case insulation voltage		<b>Uimp</b>	4kV							
	Isolation resistance		<b>Rio</b>	1GΩ							
	Isolation capacitance		<b>Cio</b>	<8pF							
Maximum junction temperature		<b>Tjmax</b>	175°C								
Storage ambient temperature		<b>Tstg</b>	-40->+100°C								
Operating ambient temperature		<b>Tamb</b>	-40->+90°C	<b>See fig. 9</b>							
Max. case temperature		<b>Tc</b>	100°C								



OUTPUT SWITCH CHARACTERISTIC CURVES

Fig. 5 VOLTAGE DROP VS LOAD CURRENT

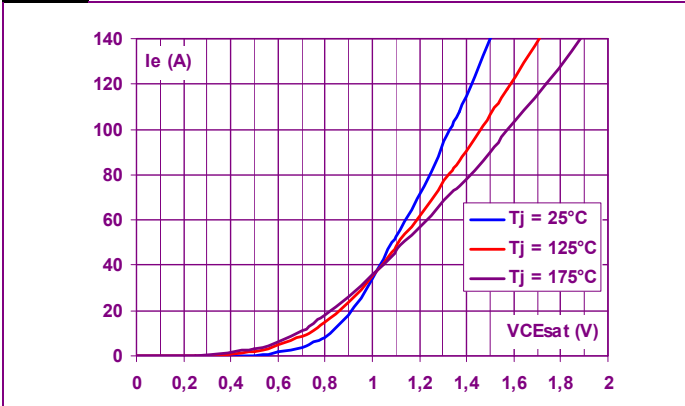


Fig. 6 REVERSE VOLTAGE DROP VS REVERSE CURRENT

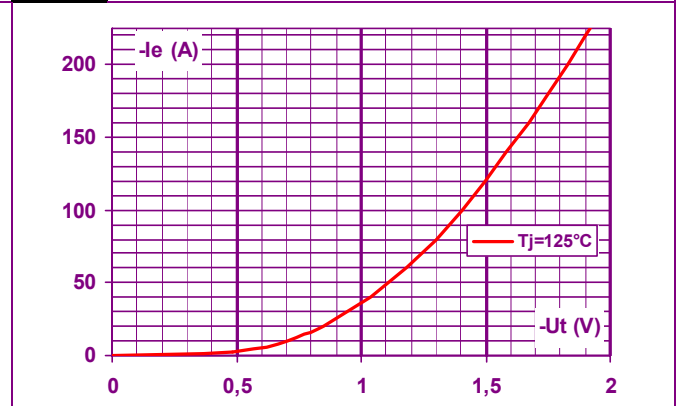


Fig. 7 POWER ELEMENT TRANSIENT THERMAL IMPEDANCE vs. PULSE DURATION

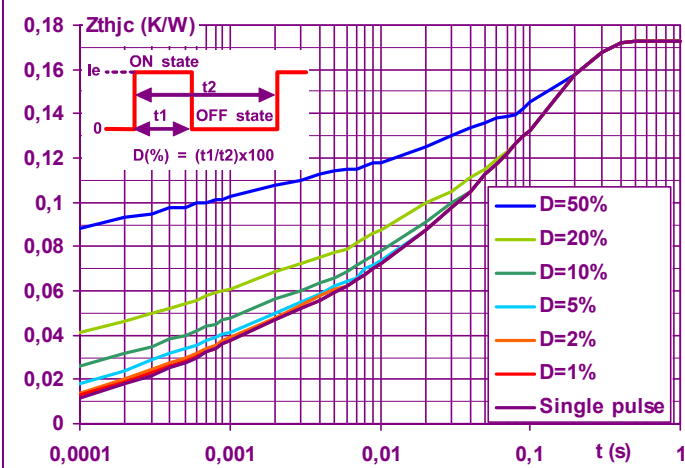


Fig. 8 ON-STATE PEAK OVERLOAD CURRENT vs. PULSE DURATION

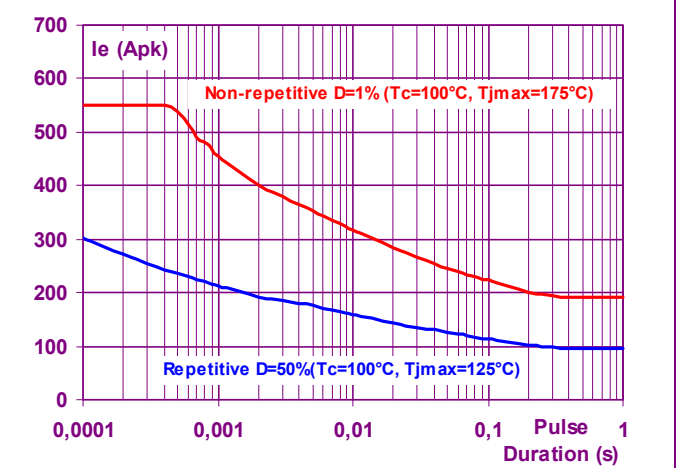
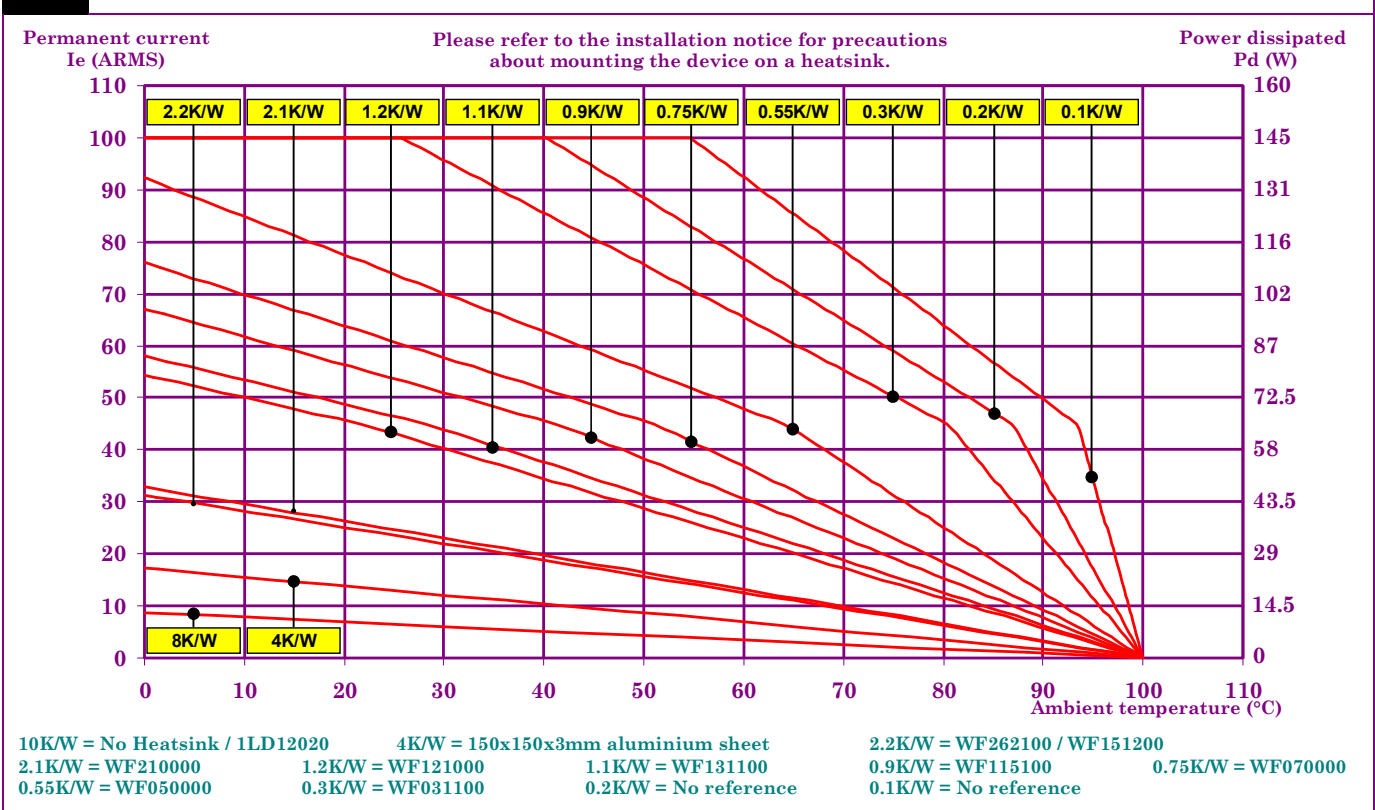


Fig. 9 POWER DISSIPATED AND LOAD CURRENT LIMIT VS TEMPERATURE





**PRELIMINARY DATA**

**GENERAL INFORMATION**

CONNECTIONS	Connections	Power	Control
	Screwdriver advised	Philips™ NR2	Philips™ NR1
	Min and max tightening torque	1.8 N.m	0.8 N.m
	Insulated crimp terminals (round tabs, eyelet type)	M5	M3

MISC.	Display	Green LED (indicates relay has switched ON)	
	Housing	UL94V0	
	Mounting	2 screws (M4x12mm)	See mounting sheet
	Noise level	No audible noise	
	Weight	100g	

**STANDARDS**

GENERAL	Standards	IEC60947-1
	Protection level	IP00
	Protection against direct touch	None
	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	No effect
	Electric chocks	EN61000-4-5	Pending	?
	Voltage drop	EN61000-4-11	-	

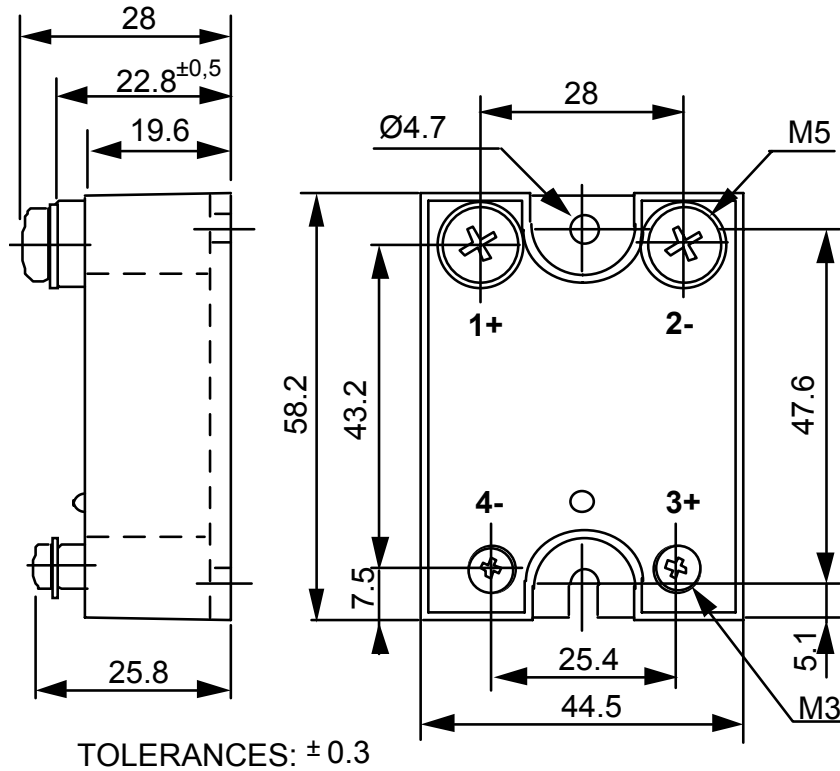
E.M.C. EMISSION	Radiated and conducted disturbances	NFEN55011	Pending
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**DIMENSIONS AND ACCESSORIES**

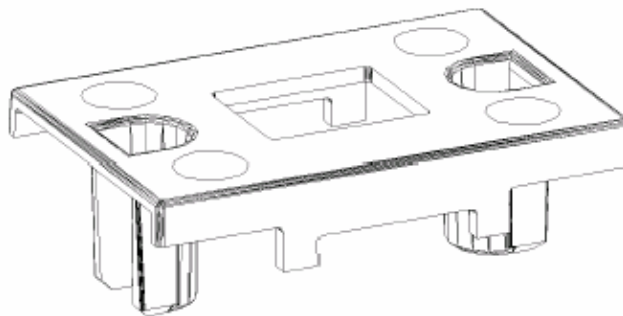
Fig. 10

DIMENSIONS (mm)



ACCESSORIES

PROTECTIVE COVER  
1K470000



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



ISO 9001  
N° 1993/1106a

ASSOCIATION  
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LA QUALITÉ