

IGBT BASED DC SOLID-STATE RELAY



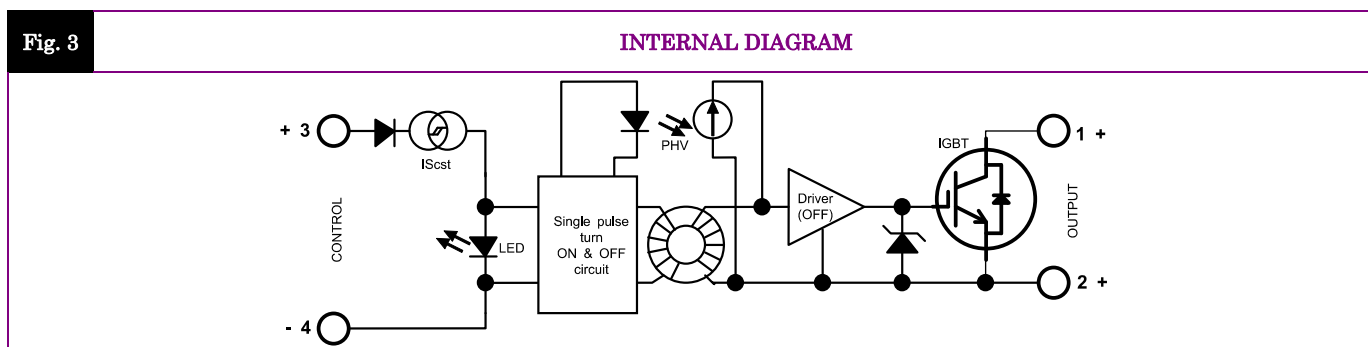
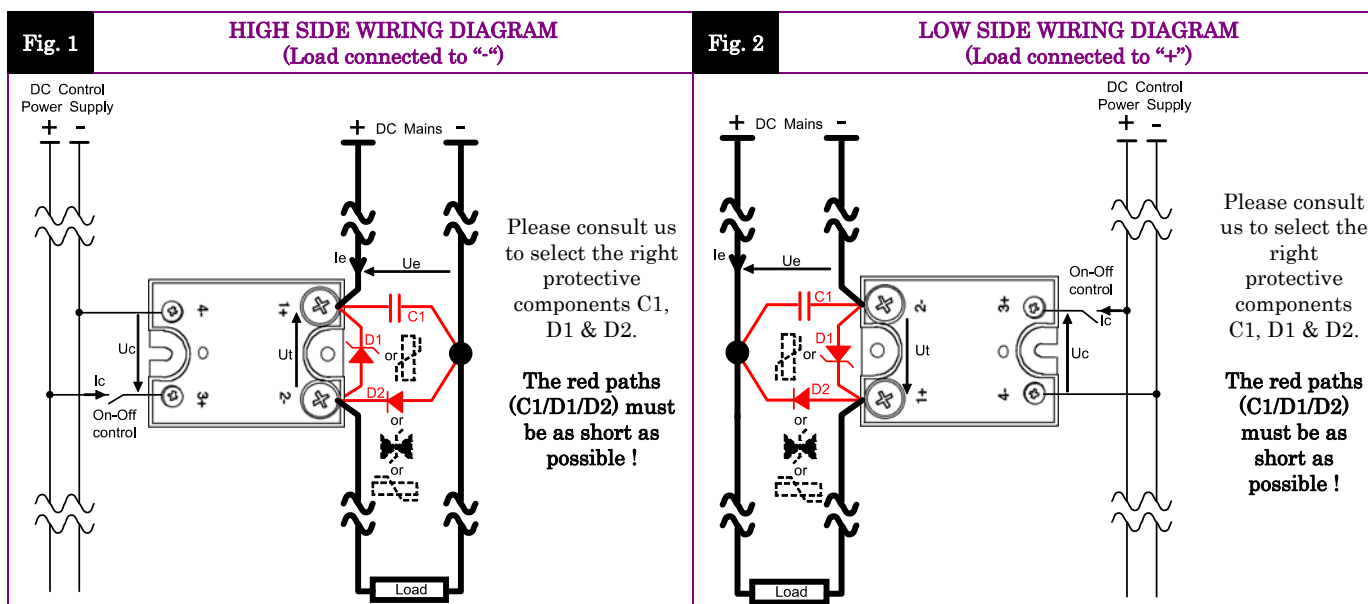
- ▶ Latest high voltage IGBT technology generation.
- ▶ New innovative isolated driver ensuring fast power transistor turn on and off therefore low power transient.
- ▶ Ultra low output leakage current
- ▶ Low control current consumption
- ▶ Triggered control input to avoid linear control risks
- ▶ Low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

SCI0501200



Control voltage range	4.5-32VDC
Max transient peak voltage	1200v
Advised max. DC Mains peak voltage	(Depends on protection clamping voltage)
Max. Load Current (with heatsink)	50ADC

DC Mains voltage range	Load current range	Control input voltage range	In & case / Out Insulation	Connections	Dimensions (WxHxD)	Weight
(Depends on protection clamping voltage)	0 to 50A (with heatsink)	4.5-32VDC	4kV	M3 round tabs M5 round tabs	44.5 x 58.2 x 27 (mm)	100g



Proud to serve you

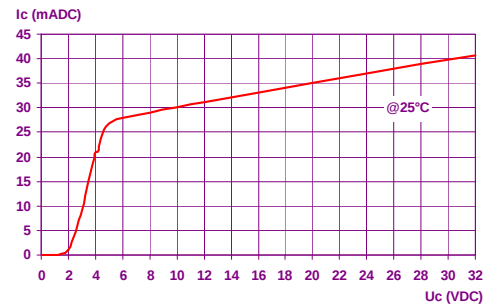
Data given at Tambient=25°C and subject to modification without previous notice

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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			
	Control voltage range	U_c	4.5 – 32VDC	typical=4.3V		
	Control current consumption	I_c	25 – 42mADC	See curve		
	Releasing control voltage	$U_{Coffmax}$	1VDC	Typical= 3.5V		
	Max. reverse control voltage	$-U_{Cmax}$	32VDC	$-I_{Cmax} < 100\mu A$		
	Input impedance	R_{in}	Current limitation	See curve		



TIME CHARACTERISTICS

TIME CHARACT.	CHARACTERISTIC	LABEL	VALUE		
	Turn on time	t_{on}	10 μs		
	Turn on delay	t_{don}	600 μs		
	Turn off time	t_{off}	50 μs		
	Turn off delay	t_{doff}	100 μs		
	Max. On-Off frequency	$F_{(on-off)}$	200Hz		

POWER OUTPUT CHARACTERISTICS

POWER CIRCUIT	CHARACTERISTIC	LABEL		VALUE	INFO.
	Mains voltage range	Ut	Ue	Min = VCEsat Max (Advised) = 650VDC	Depends on protection clamping voltage (D1)
	Non-repetitive peak voltage	Utp		1200V	
	Overvoltage protection	D1		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)	-Ut		1.4V	@Ie=50A
	Maximum nominal currents	Ie max	Resistive	Motor	See fig. 9
			50A	Please contact us	
	Max. non-repetitive non-switched peak current	Iepeak	320A		@Tc=100°C @Tj=175°C @Utp (See fig. 8)
	Min. load current	Iemin	0mA		@Tj=25°C
	Max. leakage current	Ielk max	1mA		@Utp @Tjmax
	Voltage drop : Resistance	rt	9mΩ		@Tj=125°C
	Voltage drop : Voltage	vt	0.8V		@Tj=125°C
	Max. on-state voltage (Vcesat = vt + rt . Ie)	VCEsat	1.5V @Tj=25°C	1.7V @Tj=125°C	@Iemax
	Typ. output capacitance	Cout	300pF		@Utp
	Junction/case thermal resistance	Rthjc	0.365K/W		
	Built-in heatsink thermal resistance vertically mounted	Rthra	10K/W		@ΔTra=75°C
	Heatsink thermal time constant	Tthra	10 minutes		@ΔTra=60°C
	Control inputs / power outputs / case insulation voltage	Uimp	4kV		
	Isolation resistance / capacitance	Rio / Cio	1GΩ / <8pF		
	Maximum junction temperature	Tjmax	Steady state = 125°C	Transient = 175°C	
	Storage ambient temperature	Tstg	-40->+100°C		
	Operating ambient temperature	Tamb	-40->+90°C		See fig. 9
	Max. case temperature	Tc	100°C		

OUTPUT SWITCH CHARACTERISTIC CURVES

Fig. 5 VOLTAGE DROP VS LOAD CURRENT

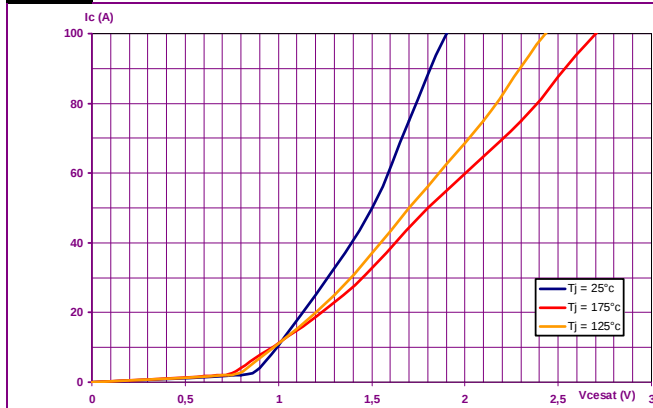


Fig. 6 REVERSE VOLTAGE DROP VS REVERSE CURRENT

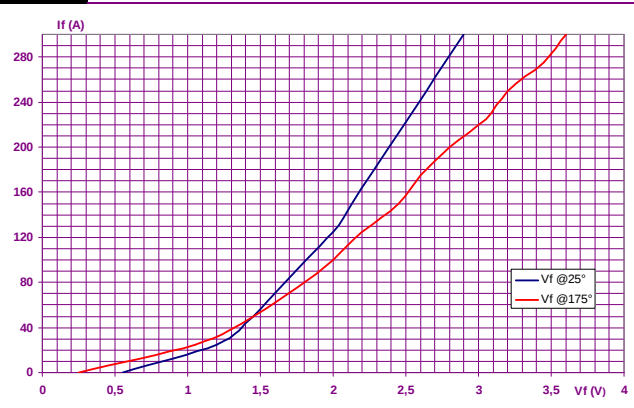


Fig. 7 POWER ELEMENT TRANSIENT THERMAL IMPEDANCE vs. PULSE DURATION

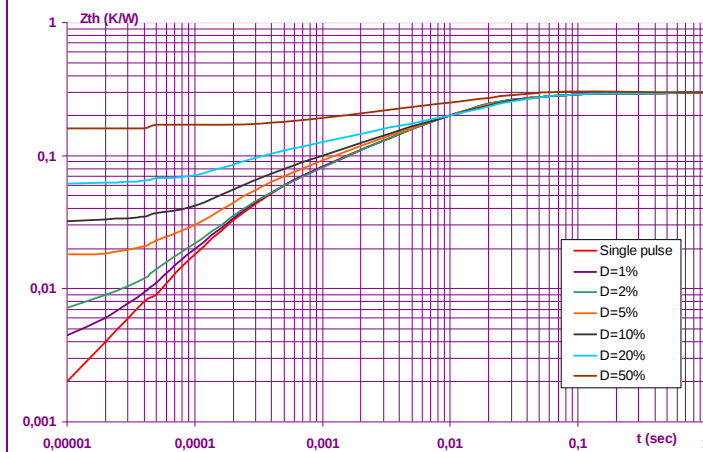


Fig. 8 ON-STATE PEAK OVERLOAD CURRENT vs. PULSE DURATION

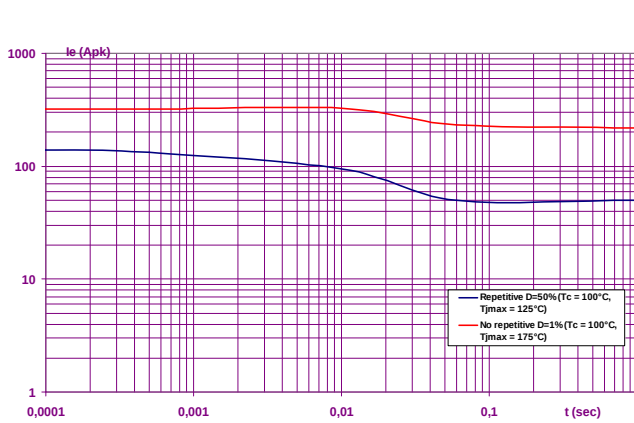
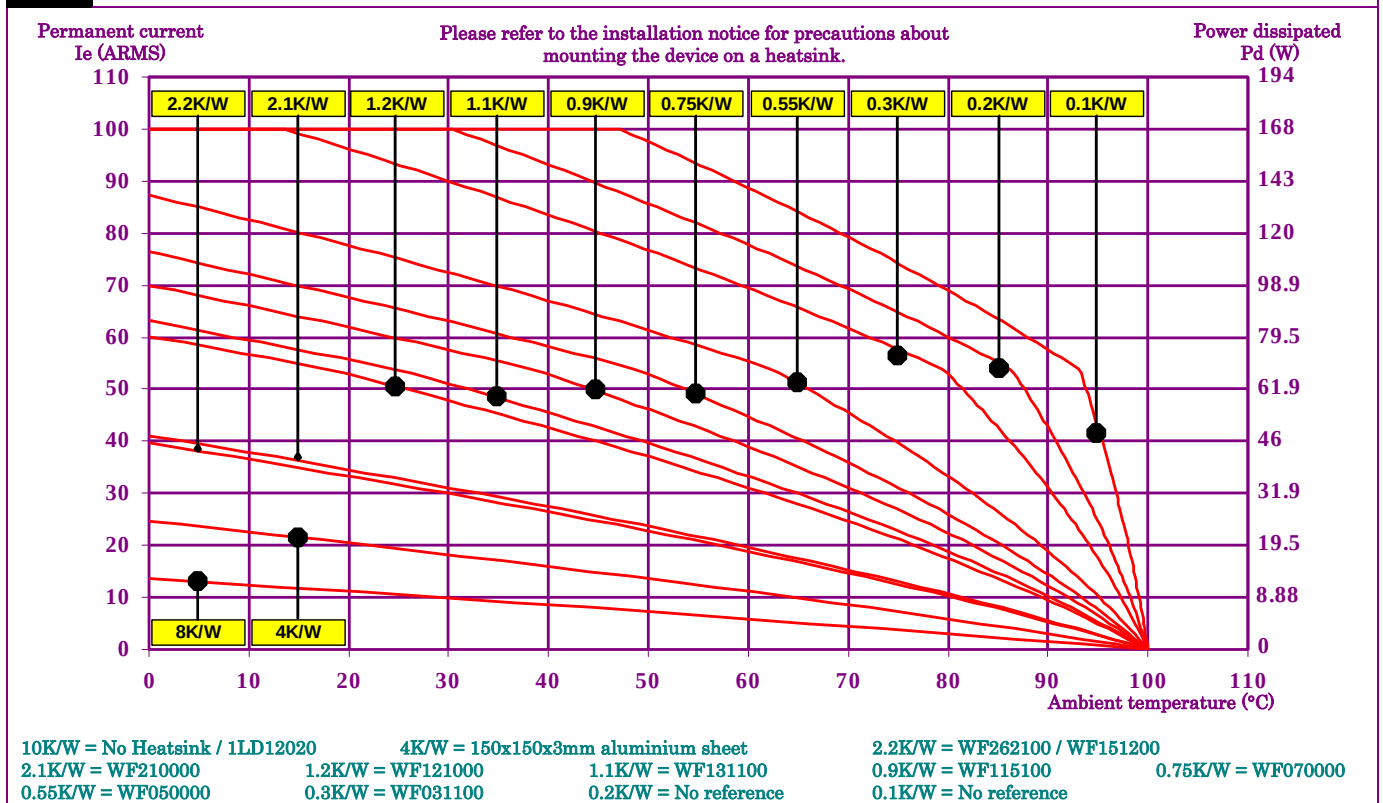


Fig. 9 POWER DISSIPATED AND LOAD CURRENT LIMIT VS TEMPERATURE



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 the power element is controlled)		
	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		Yes	

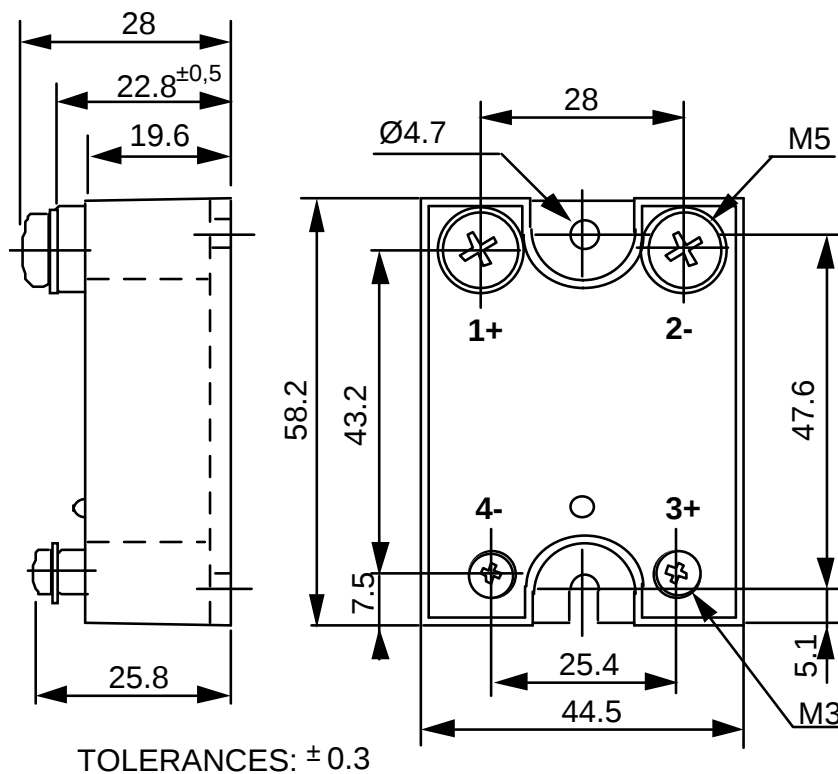
E.M.C. IMMUNITY	TYPE OF TEST	STANDARD	LEVEL	EFFECT
	E.S.D. (Electrostatic discharges)	EN61000-4-2	Pending	?
	Radiated electromagnetic fields	EN61000-4-3	Pending	?
	Fast transients bursts	EN61000-4-4	Pending	No effect
	Electric chocks	EN61000-4-5	Pending	?
	Voltage drop	EN61000-4-11	-	

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

DIMENSIONS AND ACCESSORIES

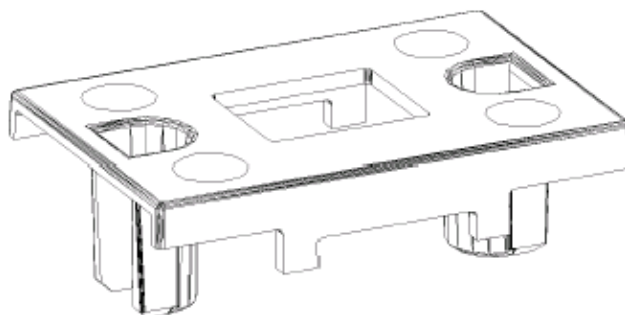
Fig.
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DIMENSIONS (mm)



ACCESSORIES

PROTECTIVE COVER 1K470000



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