

RoHS
Compliant

Features

- Product Temperature withstand 150°C.
- "19.5 & 22.5 MM SLIM Height" SSR Design.
- "31 MM Height" Inbuilt "C-56" Heat sink SSR Design.
- With easy open & lock IP 20 protection Flaps on I/P & O/P Terminals.
- Zero Voltage Turn-On SSR.
- Rating from 16 Amp to 200 Amp @25°C 24-600V AC.
- Short Circuit Protected SSR up to 115 Amp per phase current by help of suitable "B cule MCB.
- No need to use semiconductor Fuse due to short circuit protected SSR.
- Fire Retardant Plastic as per UL94 VO GRADE.
- New improved SEMS Screw -Washers input & Output terminals.
- Improved Direct Bonded Copper (DBC) for higher Amp Relays.
- High resistance to aggressive chemicals and dust due to special Potting.
- Logic compatibility, Fast switching, Low coupling capacitance
- Inbuilt transient voltage suppressor.

Advantages Of SSR Over Contractor / Mechanical

- Zero Voltage Turn-On
- High resistance to shock, vibration and abrasion
- High resistance to aggressive chemicals and dust
- No electromechanical or acoustical noise
- Logic compatibility
- Low coupling capacitance
- Long life cycle . Up to 10¹¹ cycles
- Increased system temperature accuracy
- Improved system reliability because SSRs have no moving parts or contacts to degrade
- No contact arcing, low electromagnetic interference, high surge capability
- Solid state Relays offer a very fast response time with absolutely NO contact bounce
- SSRs are typically smaller than EMRs, conserving valuable real estate in printed-circuit board applications
- SSRs can be provided as surface-mount technology (SMT)parts, which means lower cost and easier SMT printed-circuit board manufacture
- Do not generate electrical noise

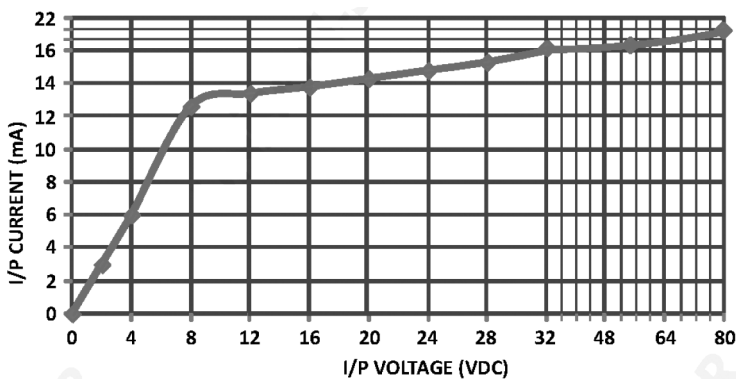
General Specification

Max Barrier Layer Temperature (T _{max})	: < 125°C
Ambient Temperature Range (T _{amb})	: 0-85°C
SSR Storage Temperature Range (T _{st})	: -40°C to 80°C
Input Terminal Screw Torque Range	: T = 1.6 N.m (Max.)
Output Terminal Screw Torque Range	: T = 2.5 N.m (Max.)
Power Factor COSφ @ Max. Load @ 480V AC	: >0.55
Housing Material	: UL-94 V0 Grade
Base Plate	: 5mm Aluminium, 2mm Copper, C-56 Heat Sink
SSR Weight	: ≤ 120 grams
Control Input Electrical Wire Size (Max.)	: Up to 2.1 sq mm (14 AWG)
Power Output Electrical Wire Size (Max.)	: Up to 33.6 sq mm (2 AWG)

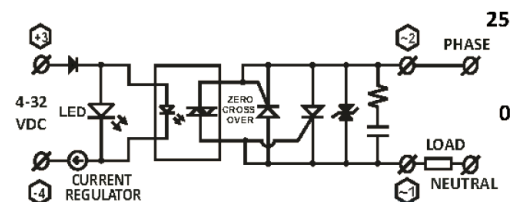
Input Technical Specifications

Parameters	Unit	ZDA
Control Voltage Range	V	4-32V DC
Input Frequency Range	Hz	--
Control Supply Current Consumption	mA	4-16 mA
Input Impedance (Current Regulator Circuit Impedance)	Ω	1k Ω -2k Ω
Minimum Turn ON Voltage	V DC	3.5V DC
Turn OFF Voltage	VDC	<3.25V DC
Control Input Status Indication	-	Green LED Indication
Maximum Turn ON Time	ms	$\leq 1/2$ Cycle (10 mS)
Maximum Turn ON Time	ms	$\leq 1/2$ Cycle (10 mS)

ZDA Type



Zero Cross Over DC to AC



Output Technical Specifications @ 25°C Unless Specified

Parameters	Symbol	Unit	25A	40A	50A	90A
Operating Voltage Range	V_{AC}	V_{RMS}	24-480V AC-3Q TRIAC	24-600V AC Back To Back SCR		
Operating Frequency Range	f	Hz	47-63 Hz			
Peak Inverse Voltage	PIV	V_{PK}	800	1600		
Max. Surge Voltage With Stand Capacity (<1 Second)	V_{Surge}	V_{RMS}	2700 V_{RMS} (3800 V_{PK})			
Rated Operational Current AC51a @ 20°C (Resistive Load)	I_T	Amp	25	40	50	90
Maximum Load Short Circuit Protection Current @ 55°C	I_{sc}	Amp	-	9	15	63
"B" Curve D.P. MCB Rating for Short Circuit Protection	--	Amp	-	10	16	63
NON Repetitive Surge Peak ON-State Current @ Rated V_{RRM} applied for 1/2 Cycle $t=10$ mS / $t=8.33$ mS (50Hz/60Hz)	I_{TSM} @50 Hz	AP	260	460	800	1200
	I_{TSM} @60 Hz	AP	273	490	840	1260

Solid State Relay

Max. I ² t for Fusing @ t=10 mS (50Hz)	I ² t	A ² S	340	1060	3000	7200
Max. I ² t for Fusing @ t=8.33 mS (60Hz)	I ² t	A ² S	305	996	2750	6510
Max. Peak ON-state voltage Drop at Full Control	V _{TM}	V _{RMS}	≤1.2			
Minimum Isolation Resistance between Input Terminals (+3,-4) to Output Terminals (~1,~2) @ 500V DC	Ω	GΩ	50			
Isolation Voltage Input Terminals (+3,-4) to Output Terminals (-1,-2)for 1 Minute (ZDA type)	V _{ISO}	kV	6	8		
Isolation Voltage Input & Output Terminals (+3,-4,-1,-2) to Body Isolationfor 1 Minute	V _{ISO}	kV	6			
Max. Rate of Rise OFF-State Voltage	dV/dt	V/μS	400	1000		
Max. Rate of Rise OFF-State Current	di/dt	A/μS	22	50	100	150
Max. Peak Repetitive Forward OFF-State Voltage	I _{DRM}	V	800	1200		1600
Max. Peak Repetitive Forward OFF-State current	I _{DRM}	mA	0.05	0.01		0.15
Max. Peak repetitive reverse off-state Voltage	V _{RRM}	V	800	1200		1600
Max. Peak repetitive reverse off-state current	I _{RRM}	mA	0.05	0.01		0.15
Max. DC Gate Trigger Voltage	V _{GT}	V	1.5			
Max. DC Gate Trigger Current	I _{GT}	mA	50			60
Turn OFF Time	t _q	μS	20	50	120	200
Maximum Latching Current	I _L	mA	100	150	160	200
Maximum Holding Current	I _H	mA	75		150	
Thermal Resistance Re (Junction to case)	R ^θ (j-c)	°C/W	1.7	1.3	0.65	0.02
OFF State SSR Leakage Current @ Rated Voltage & requency (Snubber Leakage)	I _{leak}	mA	For 230V AC < 1mA	For 230V AC <1.5mA		
			For 440V AC < 2mA	For 440V AC < 3 mA		
SCCR Current Rating (less than 100 1S)	I _{SCCR}	kA	--	--	10 kA	
Weight	W	gm	≤110	≤110		≤120

Part Number Table

Description	Part Number
Solid State Relay With Snubber, 4 to 32V DC, 24-480V AC, 25A	MP-ZDA 48 25 01 AL5
Solid State Relay without Snubber, 24 to 480V AC, 40A	MP-ZDA 48 40 00 AL5
Solid State Relay Without snybber, 24 to 600V AC, 50A	MP-ZDA 60 50 00 AL5
Solid State Relay Without snybber, 24 to 600V AC, 90A	MP-ZDA 60 90 00 CU2

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