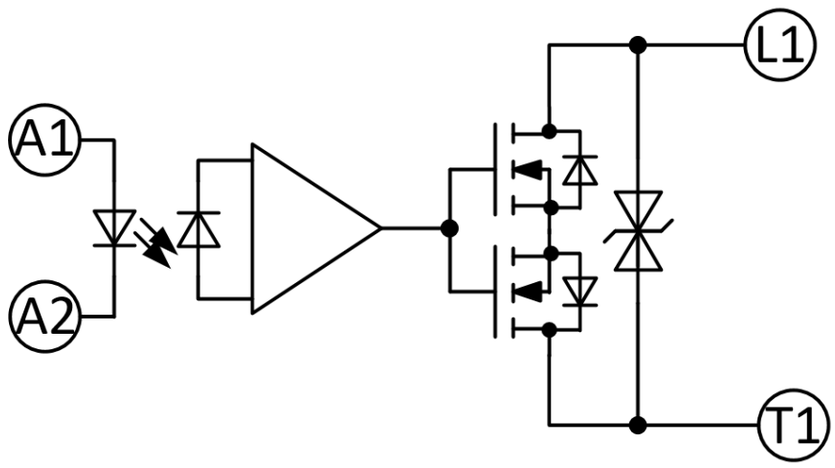
Solution brief

Semiconductor contactor 1-phase

DEMO_COOLMOS_SSR_250V_Gen2

Recent advancements in superjunction FET technologies enable the implementation of low-cost, low $R_{DS(on)}$, high-voltage MOSFETs. With the introduction of the CoolMOS™ S7 static switching products, circuit designers now have the essential power elements to implement highly reliable, feature-rich and unprecedentedly compact solid-state relays (SSR) at a highly competitive price.

Typical application circuit



Key features

Design and replace legacy electromechanical relays with Infineon's Super Solid-State Relay solutions (S4)

- Best-in-industry SJ technology enables low- and high power relays in compact form factor (23 mm DIN-rail housing)
- Up to 32 A / 250 VAC / DC, no voltage de-rating for DC operation
- Significantly reduced power dissipation compared to traditional SSRs
- No external supply necessary, simple connection with screw terminals
- Reinforced isolation between control and power side
- Safe, robust and reliable operation

General data	
Function	Single phase semiconductor contactor
Power dissipation at nominal current	
› AC 20 Arms	5 W
› DC 20 A	5 W
› No load (typical)	< 0.1 W
Isolation voltage	5 kVrms

Fuses

Relay

www.infineon.com/s4

Mounting data	
Mounting	35 mm DIN rail vertical mounting
IP rating	IP20
Side-by-side mounting on rail	Yes
Height	99 mm
Width	22.5 mm
Depth	89 mm

Control contact data	
Voltage	DC
On-voltage range	15 … 24 V
Maximum voltage	30 V
Current consumption	< 5 mA
Switch-on delay time	< 5 ms
Switch-off delay time	< 1 ms

Main contact data	
Number of contacts	1 (normally open)
Operating voltage (AC)	
› At 50 Hz	0 ... 250 V
› At 60 Hz	0 ... 250 V
Operating voltage (DC)	0 … 325 V
Operating frequency (AC)	50 … 60 Hz
Nominal current	
› AC-7a	15 A
› AC-7b	15 A
› AC-51	15 A
› DC-1	15 A
› DC-13	15 A
De-rating temperature	40° C
Maximum inrush current	200 A
I2t value	Tbd.

Terminal data	
Terminals	
› main terminals	Screw-in contact
› control terminals	Screw-in contact
Wire dimensions	
› main terminals	0.5 … 2.5 mm^2
› control terminals	0.5 … 2.5 mm^2
Environmental conditions	
Altitude max.	2000 m
Temperature	-25° C … +50°C
Humidity	0% … 95% non-condensing

Terminal connections				
Top	N/C	N/C	N/C	In / L1
	GND / A2	GND / A2	N/C	N/C
Bottom	N/C	N/C	N/C	N/C
	N/C	N/C	N/C	Out / T1

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