

SSR PWM AMPLIFIER

Function-specific Modules



The **SSR PWM Amplifier** is a compact solid-state relay designed for automotive applications, offering PWM compatibility up to 5 kHz. Serving as a PWM signal amplifier capable of handling currents up to 8 A, it enables the control of higher-power loads such as lamps or motors. This makes the SSR PWM Amplifier an ideal power solution to boost the PWM capability of ECUs with low-power PWM outputs.

Applications

- Lamp rail dimming control
- Motor drive with smooth-start functionality
- Variable duty-cycle amplification

Technical information

General information	
Housing	4 pins Mini ISO relay (PA66GF30)
Connector	Mini ISO relay 4 x 6.3 mm blade
Dimensions	30 x 30 x 41.4 (30) mm
Weight	~ 20 g
Operating temperature	-40 °C to 85 °C
Storage temperature	-40 °C to 85 °C
Ingress protection	IP53
EMC	ECE R10: 10 R – 07 10743
Operating voltage	9 – 32 V
Overvoltage protection	33 V (Transil diode)
Pre-fusing	10 A recommended
Current rating	8 A
PWM consumption	Frequency up to 5 KHz
Current consumption	< 0.2 mA

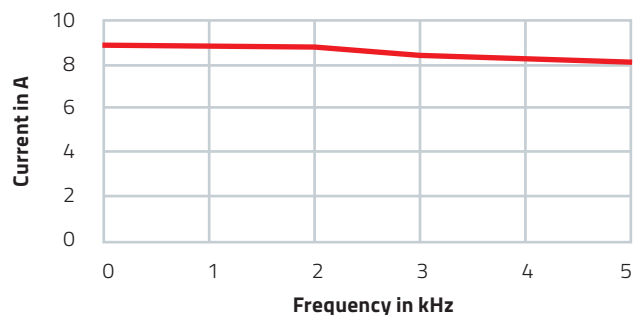
Input / output specification	
Digital input (15)	
Impedance	4.8 KΩ
Switch ON	> 2.9 V ± 0.5 V
Switch OFF	< 2.8 V ± 0.5 V
PWM output (87)	
PWM mode	< 5 KHz
Duty cycle	5 to 95 %
Max current	8 A at 5 KHz, 80 % d-cycle, 85 °C 9 A in static mode

Pin assignment

Pin	Description	Function
2	KL 30	Power supply (9 – 32 V)
4	KL 15	Input signal
6	KL 31	Ground
8	87	Output

Derating

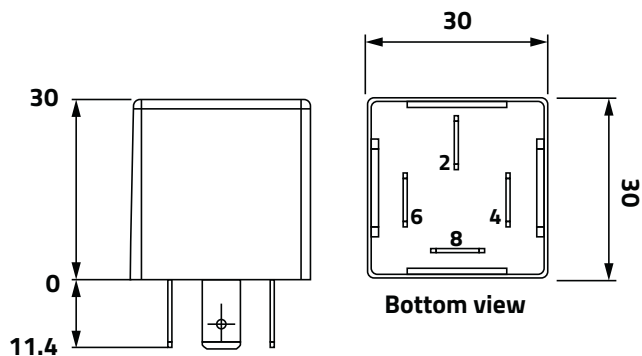
Load curve at 85 °C
(without duty cycle derating)



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Dimensions



Protection & Tests	
Protection	<ul style="list-style-type: none"> ■ Short circuit ■ Reverse polarity* ■ Overload (temperature) ■ Overvoltage including load dump ■ Inductive load
Acc. ISO 7637-2	Pulse 1, 2a, 2b, 3a, 3b, severity level III
Acc. ISO 10605	ESD: ± 8 kV (pins) ESD: ± 15 kV (housing)
Acc. ISO 16750	<ul style="list-style-type: none"> ■ Supply voltage ■ Long-term overvoltage at T_{max} -20°C ■ Superimposed alternating voltage ■ Slow decrease / increase of supply voltage ■ Short-term voltage drop ■ Start profile (Pulse 4 acc. to ISO 7637) ■ Load dump (US=174 V US_{clamped}=58 V_p, T₁=60s, R_i = 6 Ω) ■ Reverse polarity ■ Pin interruption ■ Connector interruption ■ Short circuit ■ Storage test at T_{min} and T_{max} ■ Functional test at T_{min} and T_{max} ■ Temperature steps

* During reverse polarity, the Power MOSFET will be turned on automatically to minimise power dissipation

Order information

Product information	
SSR PWM Amplifier 8 A	ICS-105634

This item is a standard product, please consider the relevant datasheet notes. The user is responsible for the product's functionality in its purposed system environment. Technical content may be modified and changed by Würth Elektronik ICS GmbH & Co. KG without any notice.

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