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Data sheet 3RF5125-1BA47

Siemens EcoTech

semiconductor relay 3RF5, 1-pole, width 22.5 mm, 17 A, 24-1350 V DC, 24 V DC, screw terminal



product brand name	SIRIUS
product designation	solid-state relay
design of the product	1-pole
product type designation	3RF51
manufacturer's article number	
● _1 of the accessories that can be ordered	3RF3900-0WA88
● _2 of the accessories that can be ordered	3RF3900-2TB88
product designation	
● _1 of the accessories that can be ordered	heat conducting foil for semiconductor relays
● _2 of the accessories that can be ordered	control connector
General technical data	
product function	instantaneous switching
power loss [W] for rated value of the current	
● at DC in hot operating state per pole	19 W
● without load current share typical	0.68 W
type of calculation of power loss current-dependent	linear
insulation voltage rated value	1 500 V
degree of pollution	3
impulse withstand voltage (Uimp)	10 kV
protection class IP on the front according to IEC 60529	IP20
shock resistance according to IEC 60068-2-27	15 g / 11 ms
vibration resistance according to IEC 60068-2-6	2 g
reference code according to IEC 81346-2:2019	Q
Substance Prohibitance (day/month/year)	03/27/2024
SVHC substance name	Lead CAS-No. 7439-92-1
Net Weight	0.065 kg
Main circuit	
number of poles for main current circuit	1
number of NO contacts for main contacts	1
number of NC contacts for main contacts	0
type of voltage of the operating voltage	DC
operating voltage	
● **at DC rated value**	24 ... 1 350 V
voltage peak maximum	1 500 V
duration of the voltage peak	20 ms
operational current rated value maximum	17 A

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operational current	
● at 25 °C rated value	18 A
● at 40 °C rated value	17 A
● at 70 °C rated value	9 A
operational current	
● according to UL 508 rated value	10.5 A
operational current minimum	1 mA
operational current at DC	
● rated value	17 A
● at 600 V rated value	17 A
● at 1100 V rated value	17 A
● at 1350 V rated value	11 A
derating temperature	40 °C
inductivity in the entire shunt circuit maximum	100 µH
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage at DC rated value	24 V
control supply voltage at DC full-scale value for signal<0> recognition	4 V
operating range factor control supply voltage rated value at DC	
● initial value	0.27
● full-scale value	1.25
control current at minimum control supply voltage at DC	8 mA
control current at DC rated value	9 mA
ON-delay time	12 ms
OFF-delay time	10 ms
Installation/ mounting/ dimensions	
fastening method side-by-side mounting	Yes
fastening method	screw fixing
design of the thread of the screw for securing the equipment	M4
tightening torque of fixing screw maximum	1.5 N·m
tightening torque [lbf·in] of fixing screw maximum	13 lbf·in
height	104 mm
width	22.5 mm
depth	51 mm
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection	
● for main current circuit	screw-type terminals
● for auxiliary and control circuit	screw-type terminals
type of connectable conductor cross-sections	
● for main contacts	
— solid	2x (1.5 ... 2.5 mm²), 2x (2.5 ... 6 mm²)
— finely stranded with core end processing	2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm²
● for AWG cables for main contacts	2x (14 ... 10)
connectable conductor cross-section for main contacts	
● solid or stranded	1.5 ... 6 mm²
● finely stranded with core end processing	1 ... 10 mm²
type of connectable conductor cross-sections	
● for auxiliary and control contacts	
— solid	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1 mm²)
— finely stranded with core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1 mm²)
— finely stranded without core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1 mm²)
● for AWG cables for auxiliary and control contacts	1x (20 ... 12)
AWG number as coded connectable conductor cross section for main contacts	14 ... 10
tightening torque	

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● for main contacts with screw-type terminals	2 ... 2.5 N·m
● for auxiliary and control contacts with screw-type terminals	0.5 ... 0.6 N·m
tightening torque [lbf·in]	
● for main contacts with screw-type terminals	7 ... 10.3 lbf·in
● for auxiliary and control contacts with screw-type terminals	4.5 ... 5.3 lbf·in
stripped length of the cable	
● for main contacts	7 mm
● for auxiliary and control contacts	7 mm
UL/CSA ratings	
operational current according to UL 508 rated value	10.5 A
Electrical Safety	
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
Ambient conditions	
installation altitude at height above sea level maximum	1 000 m
ambient temperature	
● during operation	-25 ... +60 °C
● during storage	-55 ... +80 °C
Electromagnetic compatibility	
conducted interference	
● due to burst according to IEC 61000-4-4	2 kV / 5 kHz, behavior criterion 2
● due to conductor-earth surge according to IEC 61000-4-5	2 kV, behavior criterion 2
● due to conductor-conductor surge according to IEC 61000-4-5	1 kV, behavior criterion 2
● due to high-frequency radiation according to IEC 61000-4-6	140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1
field-based interference according to IEC 61000-4-3	80 MHz ... 1 GHz 10 V/m, behavior criterion 1
electrostatic discharge according to IEC 61000-4-2	4 kV contact discharging / 8 kV air discharging, behavior criterion 2
conducted HF interference emissions according to CISPR11	Class A for industrial environment
field-bound HF interference emission according to CISPR11	Class B for the domestic, business and commercial environments

Approvals Certificates

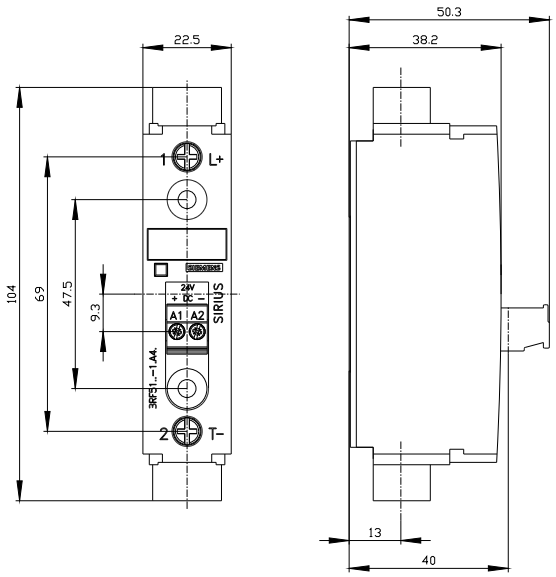
Environment	General Product Approval
Environmental Confirmations	

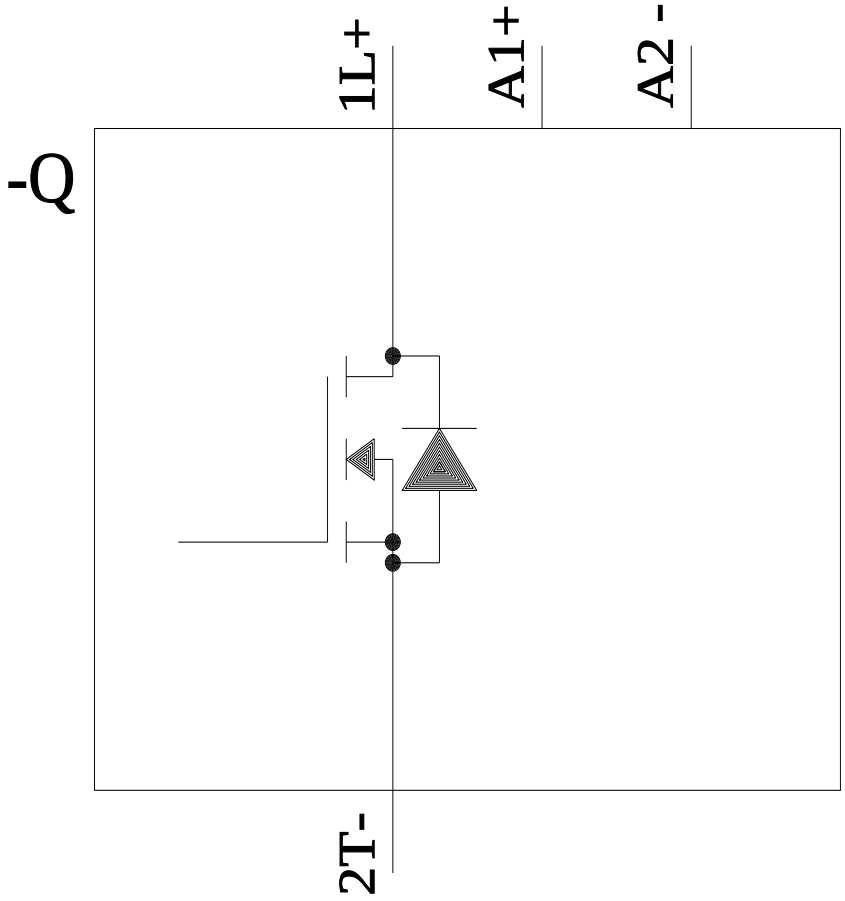
EMV	other	
	Confirmation	Confirmation

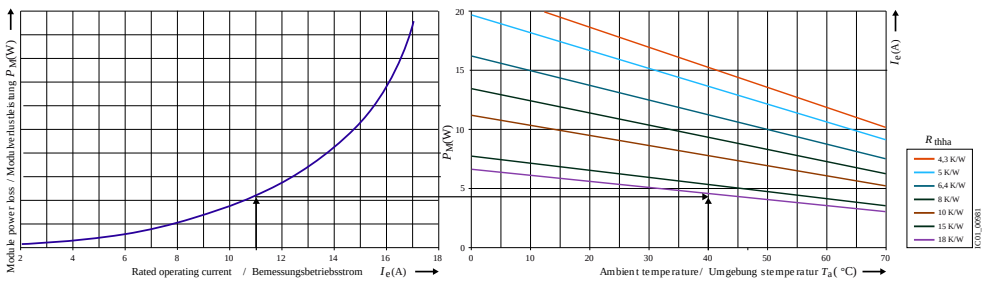
Further information

Information on the packaging
https://support.industry.siemens.com/cs/ww/en/view/109813875
Information for data generation and storage
https://support.industry.siemens.com/cs/ww/en/view/109995012
Information- and Downloadcenter (Catalogs, Brochures,…)
https://www.siemens.com/ic10
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF5125-1BA47
Cax online generator
https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF5125-1BA47
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RF5125-1BA47
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF5125-1BA47&lang=en

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