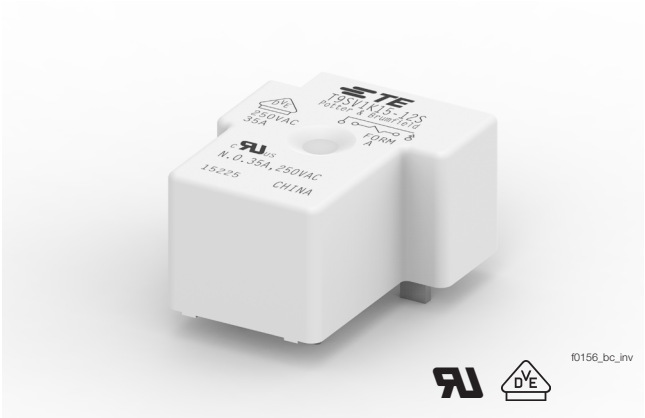
Power PCB Relay T9S

- **1 pole 35A, 1 form A (NO) contact**
- **Contact gap >1.5/1.8/2.1 mm options available**
- **350mW hold power[1)]**
- **Ambient temperature up to 85°C at 35A**
- **Meet VDE 0126-1-1 and IEC 62109-2**
- **Product in accordance to IEC 60335-1**
- **EN61095: AC7a at 85°C**



Typical applications
Photovoltaic inverter
Electrical vehicle loading stations
Electrical vehicle

Approvals

VDE 40030974, UL E58304, TUV R50369970

Technical data of approved types on request

Contact Data

Contact arrangement	1 form A (NO)		
Contact gap	>1.5mm	>1.8mm	>2.1mm
Rated voltage	250/277VAC, 30VDC		
Rated current	35A[2)]		
Breaking capacity max.	9695VA, 1200W		
Contact material	Ag alloy		
Initial contact resistance	75mΩ max. at 1A 6VDC		
Frequency of operation, with/without load	6 cycles / min = with 300 cycles / min = without		
Operate/release time max., incl bounce time	18/15ms		

Contact ratings [3)]

Type	Load	Cycles
IEC 61810		
1.5mm gap (Suffix blank)		
NO	35A, 250VAC, resistive, 85°C	$30x10^3$
1.8mm gap (Suffix S)		
NO	35A, 250VAC, resistive, 85°C	$20x10^3$
NO	40A, 30VDC, 70°C	$60x10^3$
2.1mm gap (Suffix T)		
NO	35A, 277VAC, resistive	$30x10^3$
UL 508		
1.5mm gap (Suffix blank)		
NO	35A, 277VAC, resistive, 85°C	$30x10^3$
1.8mm gap (Suffix S)		
NO	35A, 250VAC, resistive, 85°C	$20x10^3$
NO	40A, 30VDC, 70°C	$60x10^3$

Mechanical endurance, DC coil	$5x10^5$

Coil Data

Rated coil voltage	12VDC
Coil insulation system according UL	class F

Coil versions, DC coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power W
12	see note[1)]	9.6	0.8	64+10%	2.25 / min. 0.35 hold

All figures are given for coil without pre-energization, at ambient temperature +23°C.
Other coil voltages on request.

Insulation Data

Initial dielectric strength	
between open contacts	$2500V_{rms}$
between contact and coil	$4000V_{rms}$
Initial surge withstand voltage	
between contact and coil	6kV (1.2 /50 uS)
Initial insulation resistance (at 500VDC)	
between open contacts	$1X10^9Ω$
between contact and coil	$1X10^9Ω$
Clearance/creepage	
between contact and coil	
>1.5/1.8 mm type	3/4mm
>2.1 mm type	4.2/5.6mm

Other Data

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customersupport/rohssupportcenter	
Ambient temperature	-40 to +85°C[2)]
Category of environmental protection	
IEC 61810	RTII - flux proof RTIII - wash tight
Vibration resistance (functional)	10-50Hz double amplitude 1.5mm
Shock resistance (functional)	10g
Shock resistance (destructive)	100g
Terminal type	PCB-THT
Mounting	see note[2)]
Weight	appr. 30g
Resistance to soldering heat THT	
IEC 60068-2-20	260°C/10s
Packaging unit	box/500 pcs.

1) Rated Voltage: 12VDC. After the energization time of 100ms with 12 VDC the coil requires a reduction of the coil voltage to **4.7...6.0** VDC.
2) The relay connections and wiring have to be designed with an adequate cross sections to ensure the current flow and heat dissipation.
3) Contact ratings with relay properly vented. Only typical ratings listed, more ratings on request.

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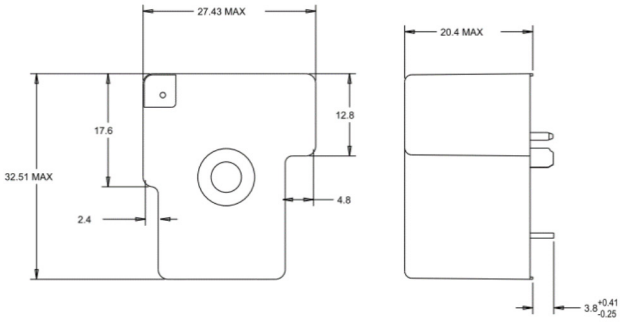
Datasheets and product specification according to IEC 61810-1 and to be used only together with the 'Definitions' section.

Datasheets and product data is subject to the terms of the disclaimer and all chapters of the 'Definitions' section, available at http://relays.te.com/definitions

Datasheets, product data, 'Definitions' section, application notes and all specifications are subject to change.

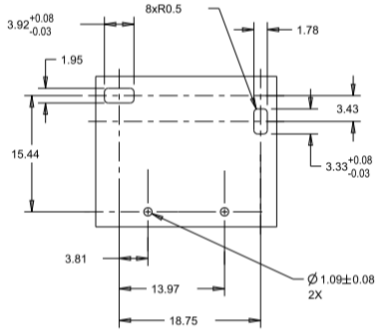
Power PCB Relay T9S (Continued)

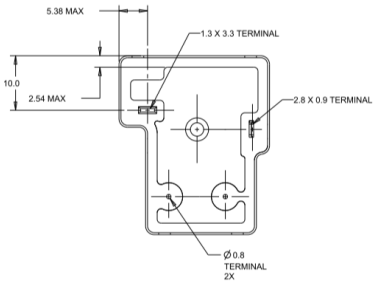
Dimensions



PCB layout / terminal assignment

Bottom view on solder pins





WIRING DIAGRAM
(BOTTOM VIEW)

1 FORM A

Notes

1) General tolerance

Diagram Dimension	Tolerance
< 1 mm	±0.1
1 ~ 3 mm	±0.2
> 3 mm	±0.3

2) Dimensions of the pins after tin soldering
a) +0.4 for the width and the thickness
b) +1.0 for the length

Product code structure

Typical product code **T9S V 1 K 1 5 -12 S**

Type
T9S Power Relay T9S Series

Enclosure
V Flux-proof plastic case **S** Wash tight

Contact arrangement
1 1 Form A (1 NO)

Coil Input
K DC coil, 2.25W

Mounting and termination
1 PCB mounting; PCB terminals for coil and contacts

Contact material
5 AgNi **8** Special Ag Alloy

Coil voltage
Coil code: Please refer to coil version table

Contact Gap
blank 1.5mm contact gap **S** 1.8mm contact gap **T** 2.1mm contact gap

Product code	Version	Contact arrangement	Contact material	Contact gap	Coil	Part Number
T9SV1K15-12	PCB, flux proof	1 form A (NO) contact	AgNi	>1.5mm	12VDC	2027395-1
T9SV1K15-12S				>1.8mm		2027395-3
T9SS1K15-12S	PCB, wash tight			>1.8mm		2027395-6
T9SV1K18-12T	PCB, flux proof		Special Ag alloy	>2.1mm		2027395-7

Note: only typical PN listed, other types on request.

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