

**Power PCB Relay T9S Solar (2.1mm gap)**

- 1 pole 35A, 1 form A (NO) contact
- Contact gap > 2.1mm (suffix T)
- 350mW hold power<sup>1)</sup>
- Ambient temperature up to 85°C at 35A
- Product in accordance to IEC 60335-1



Typical applications  
Electrical vehicle loading stations  
Electrical vehicle  
Photovoltaic inverter

**Approvals**

TUV R50369970

**Contact Data**

Contact arrangement	1 form A (NO)
Contact gap	>2.1mm
Rated voltage	277VAC (2.1mm gap)
Rated current	35A <sup>2)</sup>
Switch capacity max.	35A 277VAC
Contact material	Ag alloy (Cd free)
Initial contact resistance	75mΩ max. at 1A 6VDC 3mΩ max. at 20A
Frequency of operation, with/without load	6/300min <sup>-1</sup>
Operate/release time max., incl bounce time	18/15ms

**Contact ratings<sup>2)</sup>**

Type	Contact	Load	Cycles
T9SV1K18-12T	A (NO)	35A, 277VAC, resistive, room Temp.	30x10 <sup>3</sup>

**Internal test**

T9SV1K18-12T	A (NO)	35A, 250VAC, resistive, 85°C	1x10 <sup>3</sup>
Mechanical endurance, DC coil			5x10 <sup>5</sup>

**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	Hold Voltage VDC
12	see note <sup>1)</sup>	9.6	0.8	64	2.25 min./ 0.35 Hold	4.7Min. <sup>4)</sup> 6.0Min. <sup>4)</sup>

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

**Insulation Data**

Initial dielectric strength (1 minute)	
between open contacts	2500V <sub>rms</sub>
between contact and coil	4000V <sub>rms</sub>
Initial surge withstand voltage	
between contact and coil	6kV (1.2 /50 uS)
Initial insulation resistance (at 500VDC)	
between open contacts	1x10 <sup>9</sup> Ω
between contact and coil	1x10 <sup>9</sup> Ω
Clearance/creepage	
between contact and coil	4.2/5.6mm
Material group of insulation parts	III
Tracking index of relay base	PTI 325
Flame resistance of plastic parts	UL94 V-0

**Other Data**

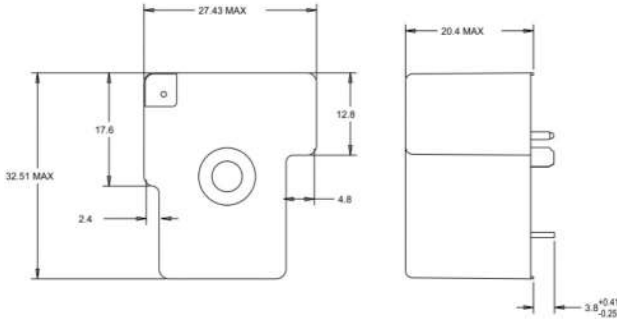
Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at [www.te.com/customer-support/rohssupportcenter](http://www.te.com/customer-support/rohssupportcenter)

Ambient temperature	-40 to +85°C <sup>2)</sup>
Category of environmental protection	IEC 61810
Vibration resistance (functional)	RTII - flux proof 10-50HZ double amplitude 1mm
Vibration resistance (destructive)	10-50HZ double amplitude 1.5mm
Shock resistance (functional)	10g
Shock resistance (destructive)	100g
Terminal type	PCB-THT
Mounting	see note <sup>2)</sup>
Mounting distance	≥10mm
Weight	appr. 30g
Resistance to soldering heat THT	IEC 60068-2-20 260°C/5s
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.
- 4) The temperature of hold voltage: 4.7 VDC Min. at room temperature, and 6 VDC Min. at 85°C.

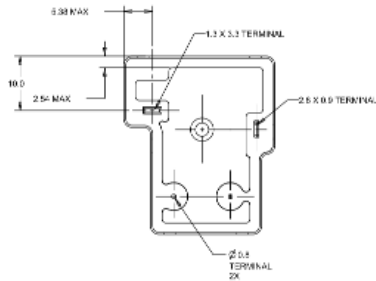
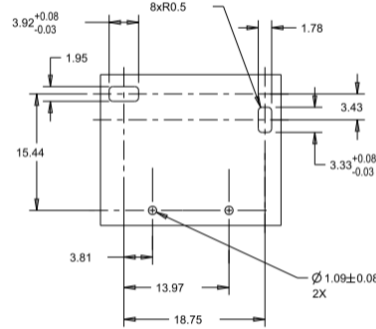
**Power PCB Relay T9S Solar (2.1mm gap)** (Continued)

**Dimensions**



**PCB layout / terminal assignment**

Bottom view on solder pins



WIRING DIAGRAM (BOTTOM VIEW)

**Note:**

**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 8 -12 T**

<b>Type</b> T9S Power Relay T9S Series									
<b>Enclosure</b> V Flux-proof plastic case									
								S	Wash tight
<b>Contact arrangement</b> 1 1 Form A (1NO)									
<b>Coil input</b> K DC coil, 2.25W									
<b>Mounting and termination</b> 1 PCB mounting; PCB terminals for coil and contacts									
<b>Contact material</b> 8 Ag alloy									
<b>Coil voltage</b> Coil code: Please refer to coil version table									
<b>Contact gap</b> T 2.1 mm contact gap									

Product code	Version	Contact arrangement	Contact material	Contact gap	Coil	Part Number
T9SV1K18-12T	PCB, flux tight	1 form A (NO) contact	Ag alloy	>2.1mm	12VDC	2027395-7

Note. This list represents the most common types and does not show all variants covered by this datasheet, other types on request.