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[1)]**
- **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[2)]
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^{-1}
Operate/release time max., incl bounce time	18/15ms

Contact ratings[2)]

Type	Contact	Load	Cycles
TUV			
T9SV1K18-12T	A (NO)	35A, 277VAC, resistive, room Temp.	30x10^3
Internal test			
T9SV1K18-12T	A (NO)	35A, 250VAC, resistive, 85°C	1x10^3
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	Hold Voltage VDC
12	see note[1)]	9.6	0.8	64	2.25 min./ 0.35 Hold	4.7Min.[4)] 6.0Min.[4)]

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$_{rms}$
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^{9}Ω
between contact and coil	1x10^{9}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

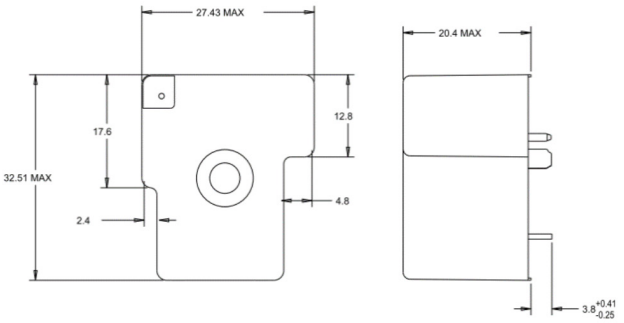
Other Data

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customersupport/rohssupportcenter	
Ambient temperature	-40 to +85°C[2)]
Category of environmental protection	
IEC 61810	RTII - flux proof
Vibration resistance (functional)	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[2)]
Mounting distance	≥10mm
Weight	appr. 30g
Resistance to soldering heat THT	
IEC 60068-2-20	260°C/5s
Packaging unit	box/500 pcs.

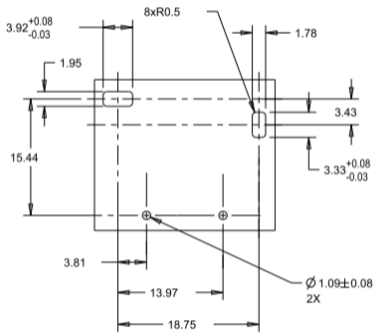
1) Rated Voltage: 12VDC. After the energization time of 100ms with 12 VDC the coil requires a reduction of the coil voltage to 4.7... 6.0 VDC.
2) The relay connections and wiring have to be designed with an adequate cross sections to ensure the current flow and heat dissipation.
3) Contact ratings with relay properly vented.
4) The temperature of hold voltage: 4.7 VDC Min. at room temperature, and 6 VDC Min. at 85°C.

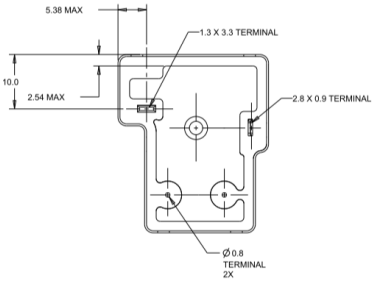
Power PCB Relay T9S Solar (2.1mm gap) (Continued)

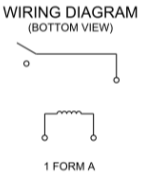
Dimensions



PCB layout / terminal assignment
Bottom view on solder pins







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**

Type
T9S Power Relay T9S Series

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

Contact arrangement
1 1 Form A (1NO)

Coil input
K DC coil, 2.25W

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

Contact material
8 Ag alloy

Coil voltage
Coil code: Please refer to coil version table

Contact gap
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.