



# Automotive Relay TR81

## MAIN FEATURES

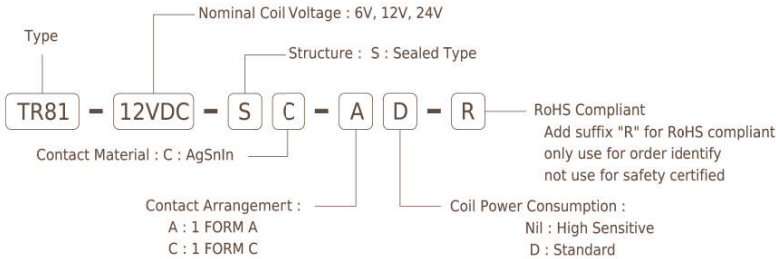
- Subminiature, Light Weight
- Big Gap Type Available for Heavy Motor Load Switching
- Improved Resistance to Shock and Vibration
- High Contact Current Capacity
- Automotive-Oriented design



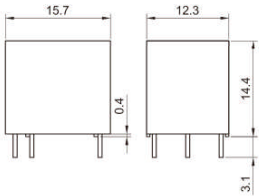
## APPLICATIONS

• Interval Wipers	• Wiper Motor Reverse
• Door Lock	• Automatic Mirror Adjustment
• Window Lifter	• Fuel Pump Control
• Alarm System	• Belt Tension Adjustment

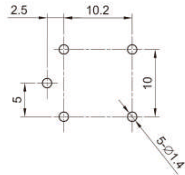
## ORDERING INFORMATION



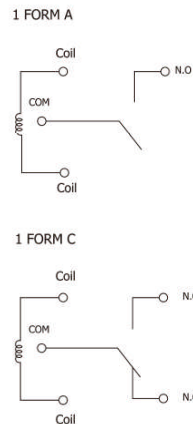
## DIMENSION(unit:mm)



## DRILLING(unit:mm)



## WIRING DIAGRAM



## COIL DATA CHART(at 20°C)

Coil Sensitivity	Nominal Voltage (VDC)	Nominal Current (mA)	Coil Resistance (Ω) ±10%	Power Consumption (W)	Pull-In Voltage (VDC)	Drop-Out Voltage (VDC)	Max-Allowable Voltage (VDC)
TR81 (High Sensitivity)	6	100	60	abt. 0.6	80% Max.	5% Min.	110%
	9	66.7	135				
	12	50	240				
	24	25	960				
TR81 -D (Standard)	6	133.3	45	abt. 0.8	80% Max.	5% Min.	110%
	9	90	100				
	12	66.7	180				
	24	33.3	720				

## CONTACT RATING

Item	TR81 (High Sensitivity)	TR81 -D (Standard)
Contact Capacity Resistive Load (cosφ=1)	N/O : 20A/14VDC 10A/120VAC N/C : 15A/14VDC 10A/120VAC	20A/14VDC
Inductive Load (cosφ=0.4 L/R=7msec)	6A/14VDC	
Rated Carrying Current	25A/hr	
Max. Allowable Voltage	250VAC 30VDC	
Max. Allowable Current	20A	
Max. Allowable Power Force	1200VA 280W	
Referenced Min. Applicable Load	10mA, 5VDC	
Contact Material	Silver Alloy	

## PERFORMANCE(at initial value)

Item	TR81
Contact Resistance	100 mΩ Max.
Operation Time	10msec
Release Time	5msec
Dielectric Strength Between coil & contact Between contacts	500VAC 50/60Hz (1 minute) 500VAC 50/60Hz (1 minute)
Surge Resistance	1500V
Insulation Resistance	100 MΩ Min. (at 500VDC)
Max. ON/OFF Switching Mechanically Electrically	300 operation/min 30 operation/min
Operating Ambient Temperature	-40°C to +85°C (No water condensation and no water drop)
Operating Humidity	45% to 85% RH
Coil Temperature Rise	40 deg. Max. (at rated coil voltage)
Vibration Endurance Error Operation	10 to 55Hz Double Amplitude 1.5mm 10 to 55Hz Double Amplitude 1.5mm
Shock Endurance Error Operation	100G Min. 10G Min.
Life Expectancy Mechanically Electrically	1 × 10 <sup>7</sup> ops. Min. (no load) 1 × 10 <sup>5</sup> ops. Min.
Weight	Abt. 6g.

1.Tolerance ±0.5mm on all dimensions unless otherwise stated.  
2. Tolerance ±0.1mm on PCB DRILLING dimension unless otherwise stated.