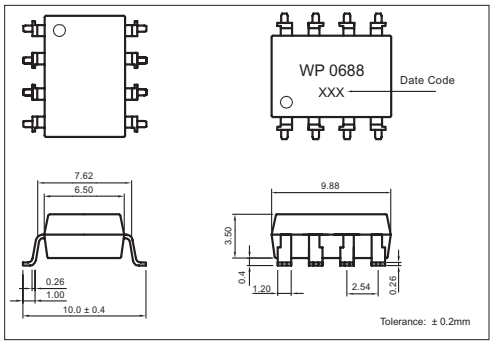
USR/CNR Listed (File# E223388)

## Features

1. Normally open, single pole single throw.
2. Control 200VAC or DC voltage.
3. Switch 180mA loads.
4. LED control current, 5mA.
5. Low ON-resistance.
6. dv/dt, >500V/mS.
7. Isolation test voltage, 1500VRMS.

**Part Numbering System & Part Marking System:** Page 3 & 4.

**WPPM-0688A**

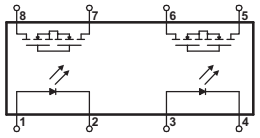



## Absolute Maximum Ratings

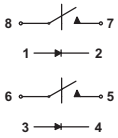
(Ta = 25°C)

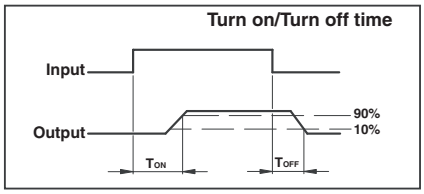
| Emitter (Input) | Detector(Output) |
|---|---|
| Reverse Voltage.....5.0V | Output Breakdown Voltage .....±60V |
| Continuous Forward Current .....50mA | Continuous Load Current .....±400mA |
| Peak Forward Current .....1A | Power Dissipation .....500mW |
| Power Dissipation .....100mW | |
| Derate Linearly from 25°C.....1.3mW/°C | |
| **General Characteristics** | |
| Isolation Test Voltage ..... 3750VRMS | Storage Temperature Range ...-40°C to +150°C |
| Isolation Resistance, | Operating Temperature Range ..-40°C to +85°C |
| VIO = 500V, TA = 25°C.....>$10^{10}\Omega$ | Junction Temperature ..... 100°C |
| Total Power Dissipation .....550mW | Soldering Temperature, |
| Derate Linearly from 25°C.....2.5mW/°C | 2mm from case, 10 sec. ..... 260°C |

## Contact Form




DUAL 1 FORM A
NORMALLY OPEN



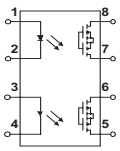
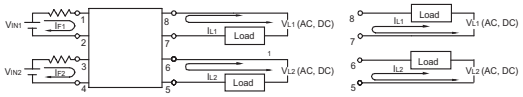
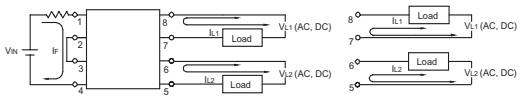




## Electro-optical Characteristics

(Ta = 25°C)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| *Emitter (Input)* | | | | | | |
| Forward Voltage | VF | IF = 10mA | - | 1.2 | 1.5 | V |
| Operation Input Current | IFON | VL = ±20V, IL = 100mA, t = mS | - | - | 5 | mA |
| Recovery Input Current | IFOFF | VL = ±20V, IL = <5uA | 0.2 | - | - | mA |
| *Detector(output)* | | | | | | |
| Output Breakdown Voltage | VB | IB = 50uA | 60 | - | - | V |
| Output Off-State Leakage | ITOFF | VT = 100V, IF = 0mA | - | 0.2 | 1 | uA |
| I/O Capacitance | CISO | IF = 0, f = 1MHz | - | 6 | - | pF |
| ON Resistance | RON | IL = 100mA, IF = 10mA | - | 0.83 | 2.50 | Ω |
| Turn-On Time | TON | IF = 10mA, VL = ±20V | - | 0.2 | 1.5 | mS |
| Turn-Off Time | TOFF | t = 10mS, IL = ±100mA | - | 0.3 | 1.5 | mS |

## MOS Relay Schematic and Wiring Diagrams

| Type | Schematic | Output Configuration | Load | Connection | Wiring Diagrams |
|---|---|---|---|---|---|
| 0688A |  | 2a | AC/DC | - | 1) Two independent 1 Form A use  2) 2 Form A use  |

## Data Curves

**Fig. 1** Load Curent vs. Ambient Temperature
Allowable ambient temperature:
-40˚C to + 85˚C

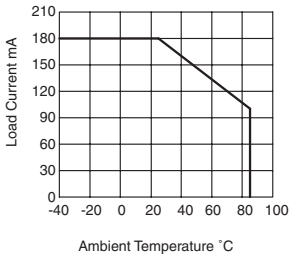



**Fig. 2** On Resistance vs. Ambient Temperature
Across Terminals 3 and 4 pin
LED current: 5mA
Continuous load current: 180mA (DC)

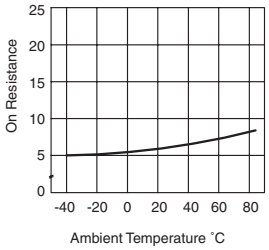



**Fig.3** Turn on time vs. Ambient Temperature
Load voltage: 200V(DC)
LED current: 5mA
Continuous load current: 180mA(DC)

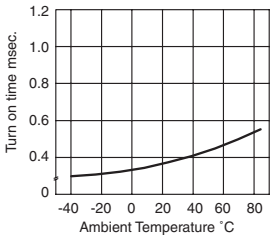



**Fig. 4** Turn off time vs. Ambient Temperature
LED current: 5mA
Load voltage: 200V(DC)
Continuous load current: 180mA(DC)

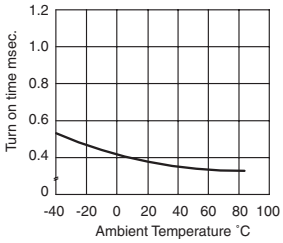



**Fig. 5** LED operate vs. Ambient Temperature
Load voltage: 200V(DC)
Continuous load current: 180mA(DC)

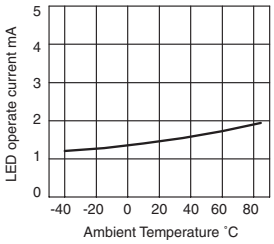



**Fig. 6** LED turn off current vs. Ambient Temperature
Load voltage: 200V(DC)
Continuous load current: 180mA(DC)

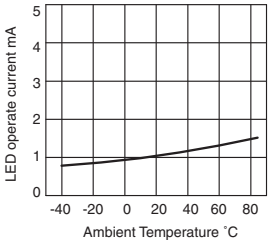



**Fig. 7** LED Dropout Voltage vs.
Ambient Temperature
LED current: 5 to 50mA

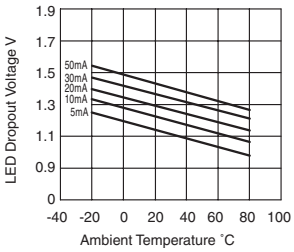



**Fig. 8** Voltage vs. Current Characteristics
of output at MOSFET portion
Measured portion:
Across terminals 3 & 4pin
Ambient Temperature: 25˚C

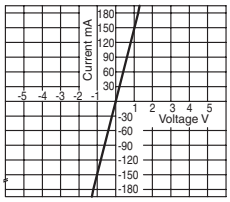



**Fig. 9** LED forward current vs. turn on time
Across terminals 3 and 4 pin
Load voltage: 200V(DC)
Continuous load current: 180mA(DC)
Ambient Temperature: 25˚C

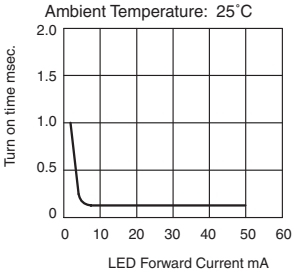



**Fig. 10** Off State Leakage Current
Across terminals 3 and 4 pin
Ambient Temperature: 25˚C

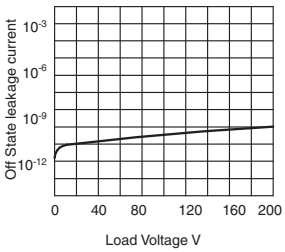



**Fig. 11** LED forward current vs. turn off time
Across terminals 3 and 4 pin
Load voltage: 200V(DC)
Continuous load current: 180mA(DC)
Ambient Temperature: 25˚C

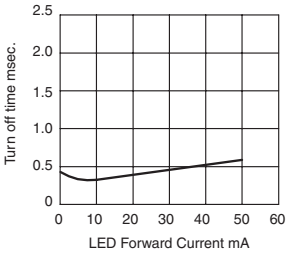



**Fig. 12** Applied voltage vs. Output Capacitance
Across terminals 3 and 4 pin
Frequency: 1MHz
Ambient Temperature: 25˚C