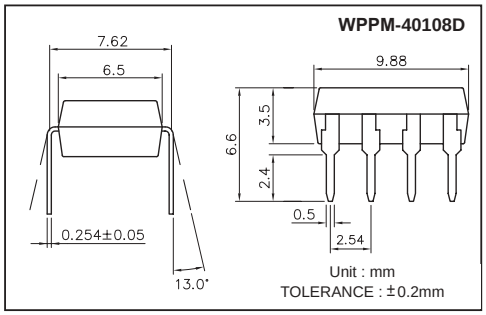
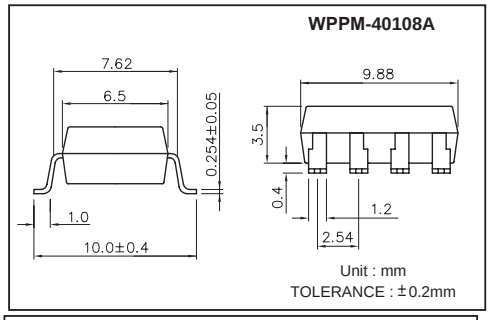
USR/CNR Listed (File # 223388)

Features

1. Normally closed, single pole single throw.
2. Control 400VAC or DC voltage.
3. Switch 130mA loads.
4. LED control current, 5mA.
5. Low ON-resistance.
6. dv/dt, >500V/mS.
7. Isolation test voltage, 3750V_{RMS}.



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

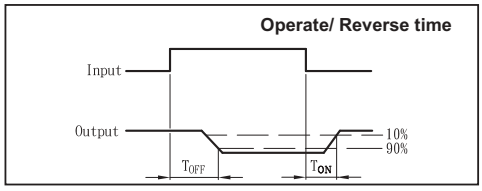


Absolute Maximum Ratings

(Ta=25°C)

Emitter (Input)	Detector (Output)
Reverse Voltage……5.0V	Output Breakdown Voltage ……±400V
Continuous Forward Current ……50mA	Continuous Load Current ……±130mA
Peak Forward Current ……1A	Power Dissipation ……500mW
Power Dissipation ……100mW	
Derate Linearly from 25°C ……1.3mW/°C	

General Characteristics	
Isolation Test Voltage…….…. 3750V_{RMS}	Storage Temperature Range …-40°C to +125°C
Isolation Resistance	Operating Temperature Range…-30°C to +85°C
V_{IO} = 500V, T_A = 25°C …….…….≥10^{10}Ω	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

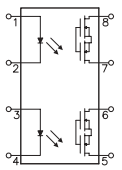
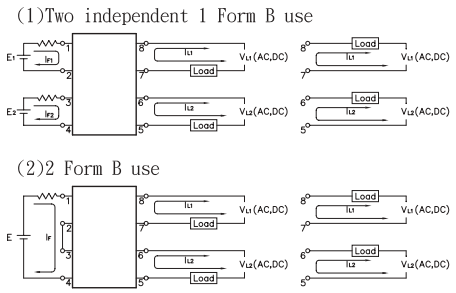


Electro-optical Characteristics

(Ta=25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Emitter (Input)						
Forward Voltage	V_F	I_F =10mA		1.2	1.5	V
Operation Input Current	I_{FOFF}	V_L =±20V, I_L ≤ 5uA			5	mA
Recovery Input Current	I_{FON}	V_L =±20V, I_L =100mA, t =10mS	0.2			mA
Detector (Output)						
Output Breakdown Voltage	V_B	I_B=50uA	400			V
Output Off-State Leakage	I_{TOFF}	V_T =100V, I_F =0mA		0.2	2	uA
I/O Capacitance	C_{ISO}	I_F =0, f =1MHz		6		pF
ON Resistance	R_{ON}	I_L =100mA, I_F =0mA		40	50	Ω
Reverse (ON) Time	T_{ON}	I_F =10mA, V_L =±20V		0.6	1.5	mS
Operate (OFF) Time	T_{OFF}	t =10mS, I_L =±100mA		0.3	1.0	mS

MOS Relay Schematic and Wiring Diagrams

Type	Schematic	Output configuration	Load	Connection	Wiring Diagrams
40108D & 40108A		2b	AC/DC	–	

Data Curve

Fig.1 Load current vs. ambient temperature
Allowable ambient temperature:
-40°C to +85°C

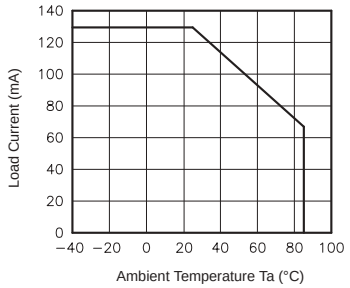


Fig.2 On resistance vs. ambient temperature
Across terminals 5,7 and 6,8 pin
LED current: 0mA
Continuous load current: 130mA(DC)

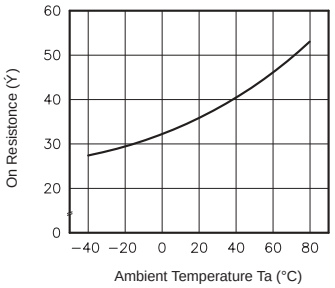


Fig.3 Operate (OFF) time vs. ambient temperature Load voltage: 400V(DC)
LED current: 5mA
Continuous load current: 130mA(DC)

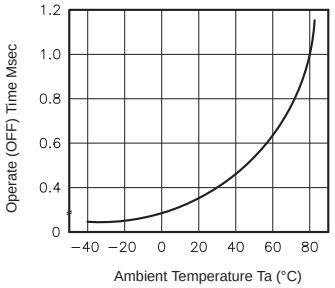


Fig.4 Reverse (ON) time vs. ambient temperature LED current: 5mA
Load voltage: 400V(DC)
Continuous load current: 130mA(DC)

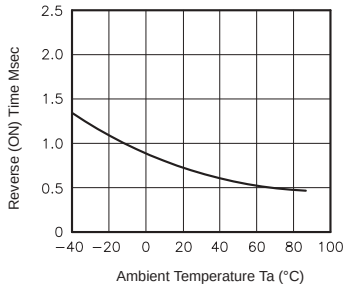


Fig.5 LED operate (OFF) vs. ambient temperature
Load voltage: 400V(DC)
Continuous load current: 130mA(DC)

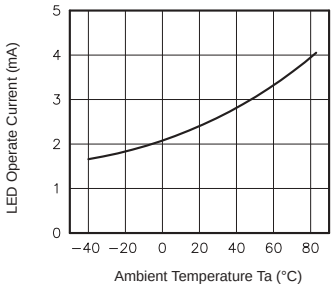


Fig.6 LED reverse (ON) current vs. ambient temperature
Load voltage: 400V(DC)
Continuous load current: 130mA(DC)

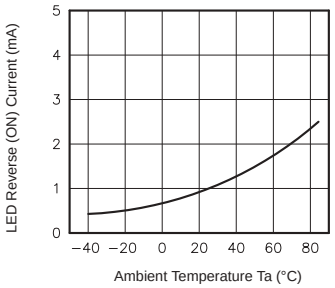


Fig.7 LED dropout voltage vs. ambient temperature
LED current: 5 to 50mA

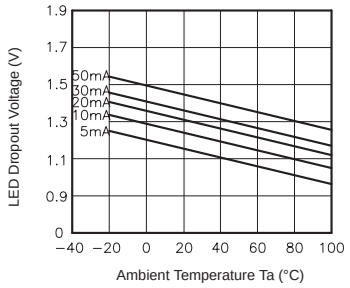


Fig.8 Voltage vs. current characteristics of output at MOS FET portion
Measured portion: across terminals 5,7 and 6,8 pin
Ambient temperature: 25°C

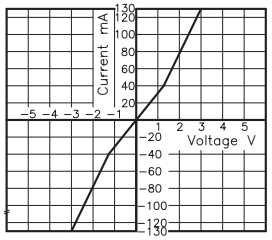


Fig.9 Off state leakage current
Across terminals 5,7 and 6,8 pin
Ambient temperature: 25°C

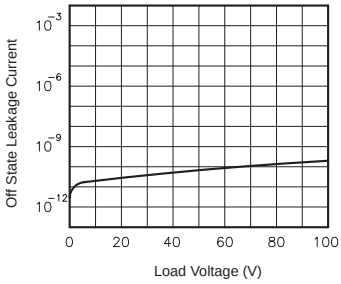


Fig.10 LED forward current vs. operate (OFF) time Across terminals 5,7 and 6,8 pin;
Load voltage: 400V (DC);
Continuous load current: 130mA (DC);
Ambient temperature: 25°C

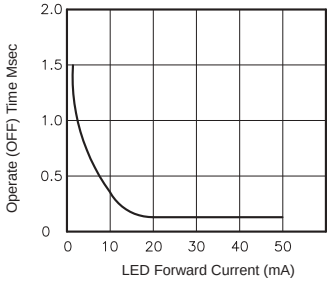


Fig.11 LED forward current vs. reverse time
Across terminals 5,7 and 6,8 pin;
Load voltage: 400V (DC);
Continuous load current: 130mA (DC);
Ambient temperature: 25°C

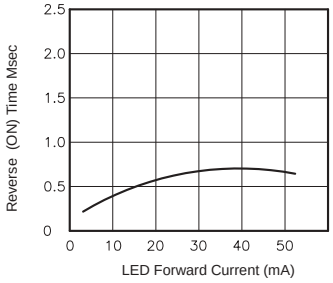


Fig.12 Applied voltage vs. output capacitance
Across terminals 5,7 and 6,8 pin
Frequency: 1MHz
Ambient temperature: 25°C