

● Features

- No moving parts
- High reliability
- Arc-Free with no snubbing circuits
- 1500Vrms Input / Output isolation
- Tape & Reel version available
- Low driver power requirements (TTL/CMOS Compatible)
- SOP package 4 Pin type in miniature design
(4.4 x 4.3 x 2.0mm)



● Description

- The PMA225 is a miniature 1-Form A solid state relay in a 4 pin SOP package that employs optically coupled MOSFET technology to provide 1500V of input to output isolation. The optically coupled input is controlled by a highly efficient GaAlAs infrared LED and MOS FETs on the output side.

● Application

- Telecommunications (PC, Electronic notepad) / Measuring and Testing Equipment / Industrial Control / Security Equipments / High Speed Inspection Machine, etc.

● Absolute Maximum Ratings (Ambient Temperature: 25°C)

| Item | | Symbol | Value | Units | Note |
|-------|-------------------------|----------|-------|-------|---------------------|
| Input | Continuous LED Current | I_F | 50 | mA | |
| | Peak LED Current | I_{FP} | 1000 | mA | f=100Hz, duty=1% |
| | LED Reverse Voltage | V_R | 5 | V | |
| | Input Power Dissipation | P_{In} | 75 | mW | |

Photo DMOS - FET Relay | PMA225



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● Absolute Maximum Ratings (Ambient Temperature: 25°C)

| Item | | Symbol | Value | Units | Note |
|---------------------------|--------------------------|------------|-------------|-------------------|-----------------|
| Output | Load Voltage | V_L | 100 | V (AC peak or DC) | |
| | Load Current | I_L | 1.25 | A | |
| | Peak Load Current | I_{Peak} | 3.0 | A | 100ms (1 pulse) |
| | Output Power Dissipation | P_{out} | 350 | mW | |
| Total Power Dissipation | | P_T | 400 | mW | |
| I/O Breakdown Voltage | | $V_{I/O}$ | 1500 | Vrms | RH=60%, 1min |
| Operating Temperature | | T_{Opr} | -40 to +85 | °C | |
| Storage Temperature | | T_{Stg} | -40 to +100 | °C | |
| Pin Soldering Temperature | | T_{Sol} | 260 | °C | 10 sec max. |

● Electrical Specifications (Ambient Temperature: 25°C)

| Item | | Symbol | MIN. | TYP. | MAX. | Units | Note |
|--------------|---------------------------|-------------|-----------|------|------|----------|---|
| Input | LED Forward Voltage | V_F | | 1.2 | 1.5 | V | $I_F=10mA$ |
| | Operation LED Current | $I_{F On}$ | | 0.5 | 3.0 | mA | |
| | Recovery LED Current | $I_{F Off}$ | 0.1 | 0.35 | | mA | |
| | Recovery LED Voltage | $V_{F Off}$ | 0.7 | | | V | |
| Output | On-Resistance | R_{On} | | 0.13 | 0.25 | Ω | $I_F=5mA$, $I_L=100mA$, Time to flow is within 1 sec. |
| | Off-State Leakage Current | I_{Leak} | | | 1 | μA | $V_L=Rating$ |
| | Output Capacitance | C_{Out} | | 115 | | pF | $V_L=0$, $f=1MHz$ |
| Transmission | Turn-On Time | T_{On} | | 1.0 | 3.0 | ms | $I_F=5mA$, |
| | Turn-Off Time | T_{Off} | | 0.06 | 0.3 | ms | $I_L=100mA$, |
| Coupled | I/O Isolation Resistance | $R_{I/O}$ | 10^{10} | | | Ω | DC500V |
| | I/O Capacitance | $C_{I/O}$ | | 0.8 | 1.5 | pF | $f=1MHz$ |

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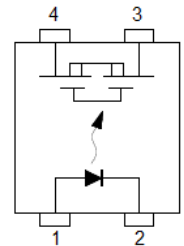
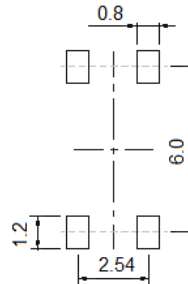
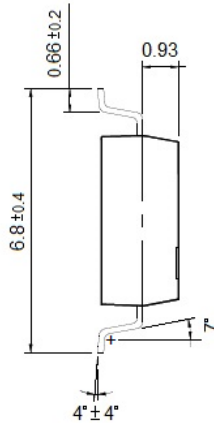
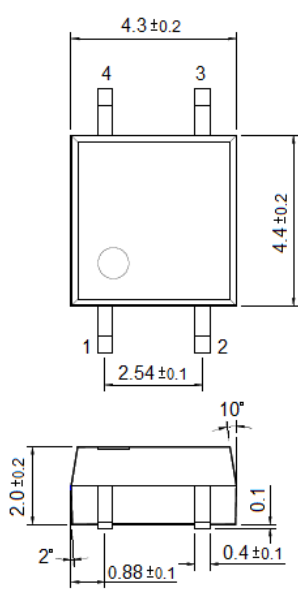


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● Dimensions (UNIT: mm)

Outline Dimensions

Recommended Mounting Pad Wiring Diagram



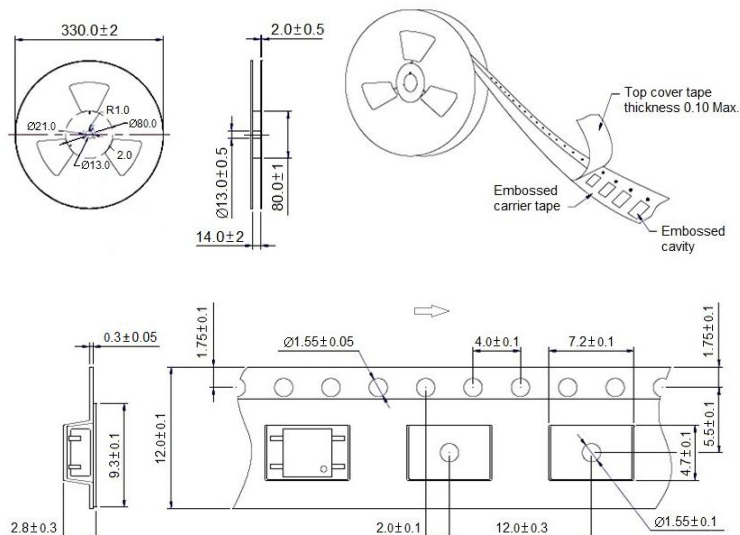
1: Anode (LED)

2: Cathode (LED)

3, 4: Drain (MOS FET)

● Tape Packing

Direction of Relay Insertion



2,000pcs per reel, 2 reel per box, 5boxes per carton.

Engineering Data

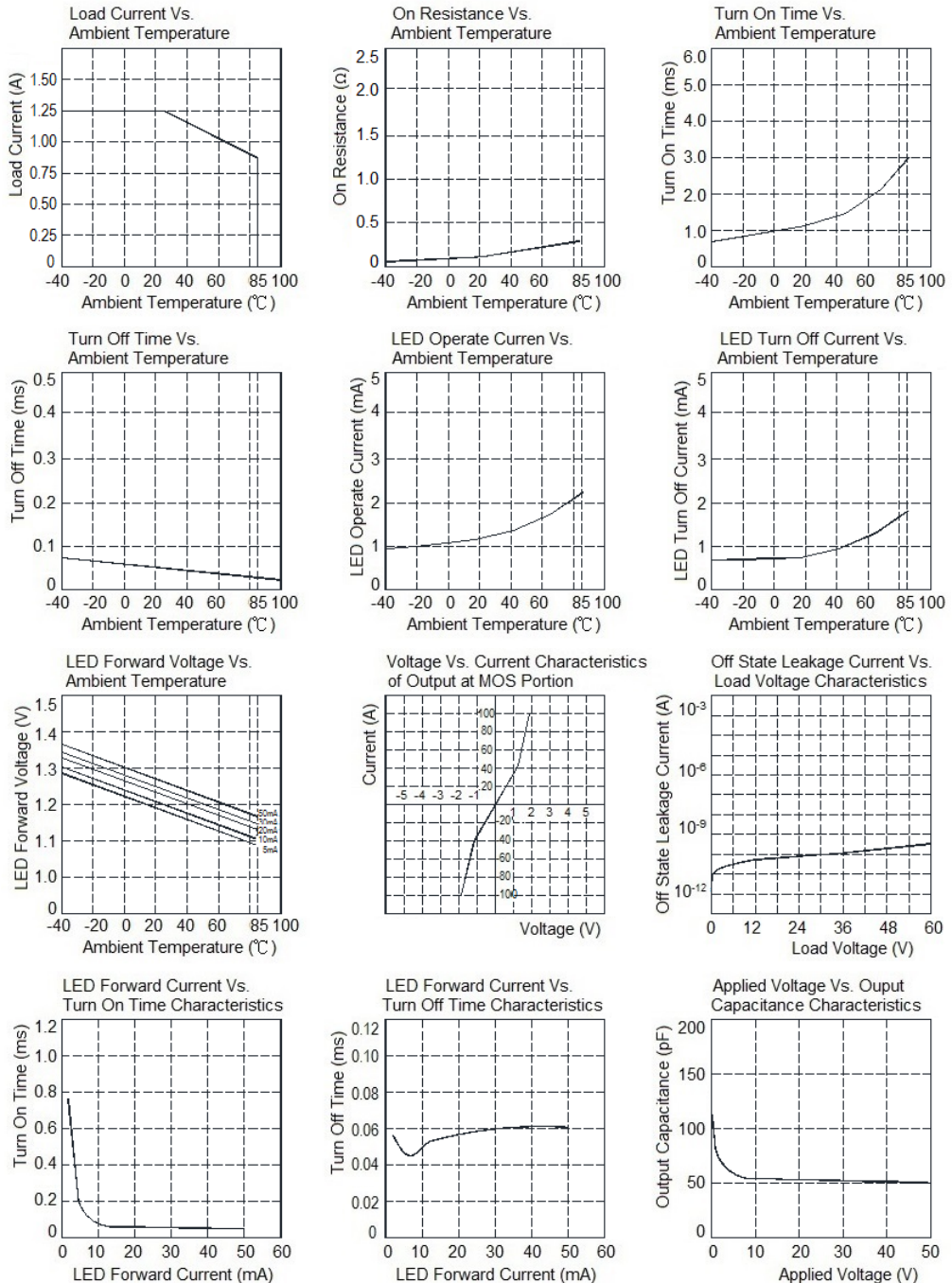


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- Note:
1. There shall be leader of 230 mm minimum which may consist of carrier and or cover tape follower by a minimum of 160 mm of carrier tape sealed with cover tape.
 2. There shall be a minimum of 160 mm of empty component pockets sealed with cover tape.
 3. Devices are pockets in accordance with EIA standard EIA-481-A and specifications given above.

Remark: 1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $>1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $>5\text{mm}$, tolerance should be $\pm 0.5\text{mm}$.

2) The tolerance without indicating for PCB layout is always $\pm 0.1\text{mm}$.

Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact IOEC for the technical service. However, it is the user's responsibility to determine which product should be used only.

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