

● 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 PMA227 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 | PMA227



RELAY / ISO9001 / IATF16949 CERTIFIED

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

Item		Symbol	Value	Units	Note
Output	Load Voltage	V_L	600	V (AC peak or DC)	
	Load Current	I_L	80	mA	
	Peak Load Current	I_{Peak}	1.0	A	100ms (1 pulse)
	Output Power Dissipation	P_{out}	450	mW	
Total Power Dissipation		P_T	500	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	1.4	V	$I_F=10mA$
	Operation LED Current	$I_{F On}$		0.5	2.0	mA	
	Recovery LED Current	$I_{F Off}$		0.35	0.5	mA	
	Recovery LED Voltage	$V_{F Off}$	0.7			V	
Output	On-Resistance	R_{On}		35	50	Ω	$I_F=5mA$, $I_L=100mA$, Time to flow is within 1 sec.
	Off-State Leakage Current	I_{Leak}		0.2	1	μA	$V_L=Rating$
	Output Capacitance	C_{Out}		115		pF	$V_L=0$, $f=1MHz$
Transmission	Turn-On Time	T_{On}		0.3	1.0	ms	$I_F=5mA$,
	Turn-Off Time	T_{Off}		0.02	0.2	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	$f=1MHz$

Photo DMOS - FET Relay I PMA227

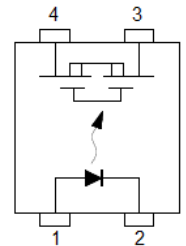
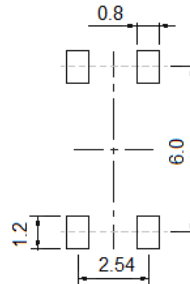
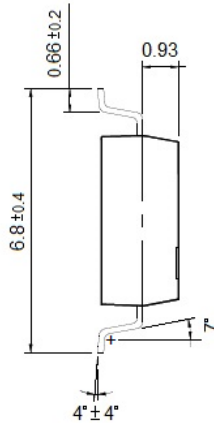
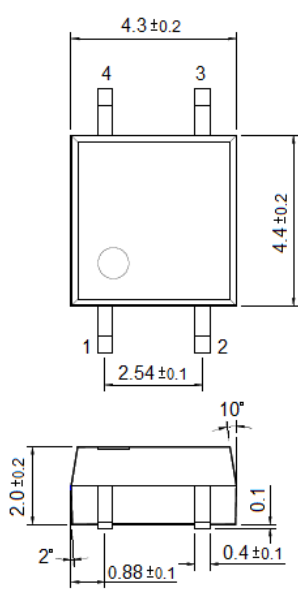


RELAY / ISO9001 / IATF16949 CERTIFIED

● Dimensions (UNIT: mm)

Outline Dimensions

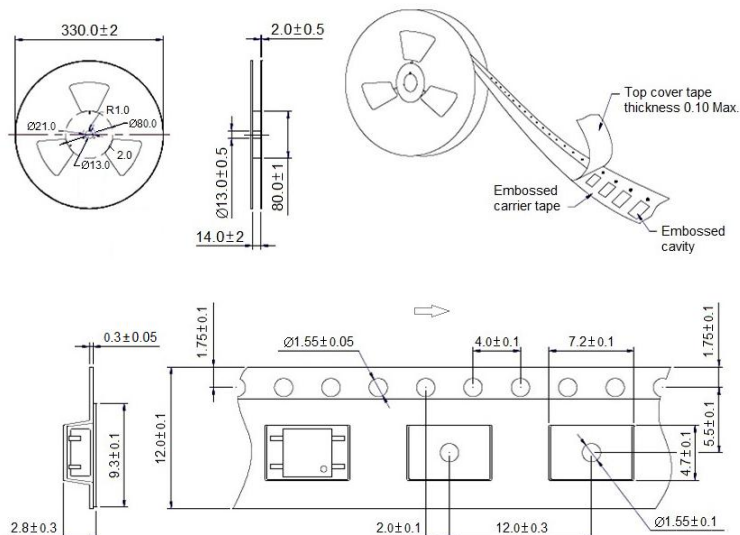
Recommended Mounting Pad Wiring Diagram



- 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

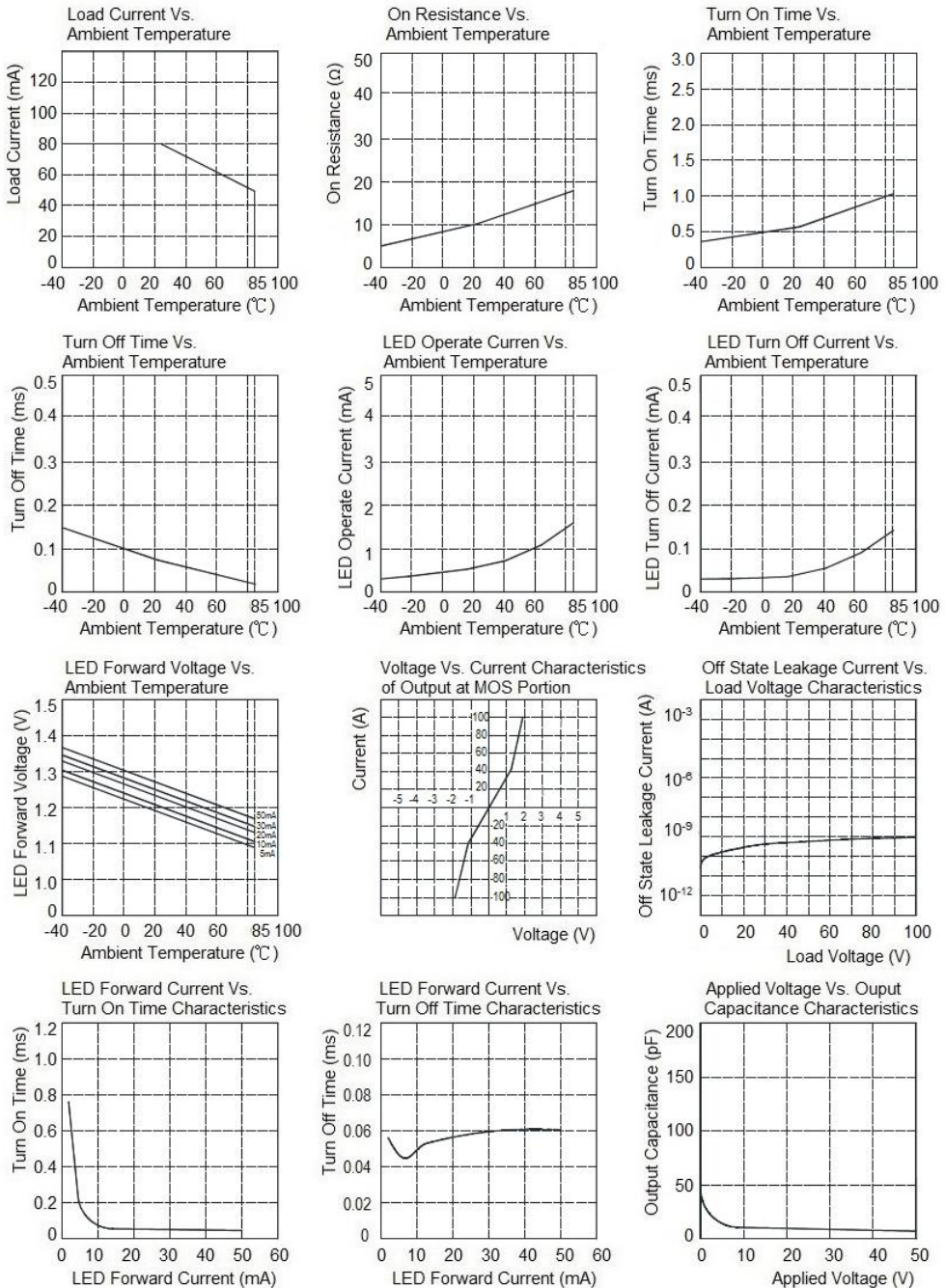


Photo DMOS - FET Relay I PMA227



RELAY / ISO9001 / IATF16949 CERTIFIED

- 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.

In & Out Electronic Corporation. All rights of IOEC are reserved.