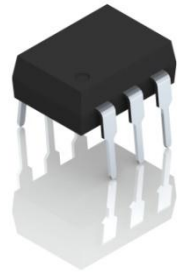
Features



- No moving parts
- High reliability
- Arc-Free with no snubbing circuits
- 3750Vrms Input / Output isolation
- Low driver power requirements (TTL/CMOS Compatible)
- DIP package 6 Pin type in miniature design (6.4 x 8.8 x 3.4 mm)

Description

The PMA815 is a 1-Form A solid state relay in a 6 pin DIP package that employs optically coupled MOSFET technology to provide 3750V 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 with No Snubbing Circuits, etc.

Absolute Maximum Ratings (Ambient Temperature: 25℃)

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	

Absolute Maximum Ratings (Ambient Temperature: 25℃)

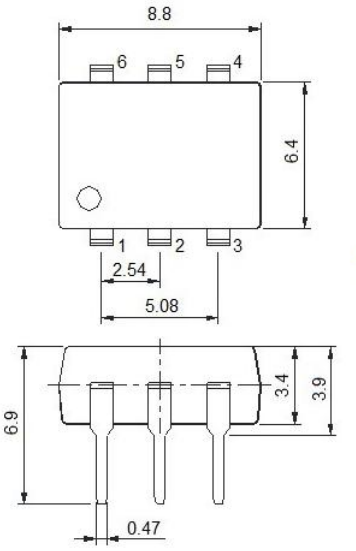
Item		Symbol	Value	Units	Note
Output	Load Voltage	V_L	60	V (AC peak or DC)	
	Load Current	I_L	400	mA	
	Peak Load Current	I_{Peak}	1.0	A	100ms (1 pulse)
	Output Power Dissipation	P_{out}	400	mW	
Total Power Dissipation		P_T	500	mW	
I/O Breakdown Voltage		$V_{I/O}$	3750	Vrms	RH=60%, 1min
Operating Temperature		T_{Opr}	-40 to +85	℃	
Storage Temperature		T_{Stg}	-40 to +100	℃	
Pin Soldering Temperature		T_{Sol}	260	℃	10 sec max.

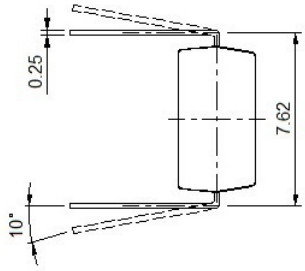
Electrical Specifications (Ambient Temperature: 25℃)

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	5.0	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}		1.0	1.4	Ω	I_F=5mA, I_L=100mA, Time to flow is within 1 sec.
	Off-State Leakage Current	I_{Leak}			1.0	uA	V_L=Rating
	Output Capacitance	C_{Out}		115		pF	V_L=0, f=1MHz
Transmission	Turn-On Time	T_{On}		0.5	0.8	ms	I_F=5mA,
	Turn-Off Time	T_{Off}		0.35	0.5	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

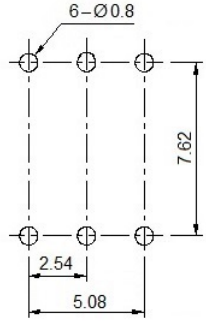
Dimensions (UNIT: mm)

Outline Dimensions

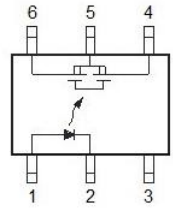




Recommended Mounting Pad



Wiring Diagram



1: Anode (LED)

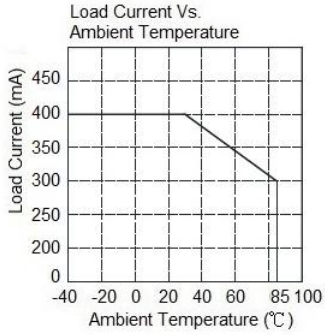
2: Cathode (LED)

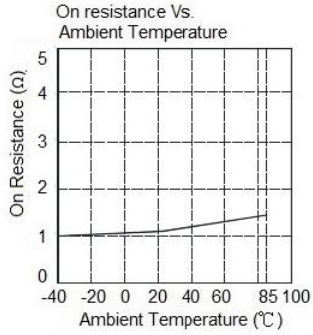
4: Drain (MOS FET)

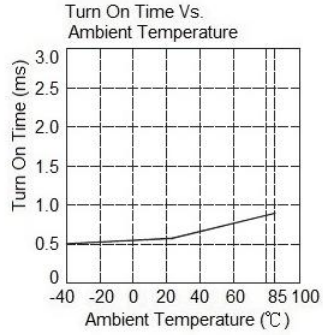
5: Source (MOS FET)

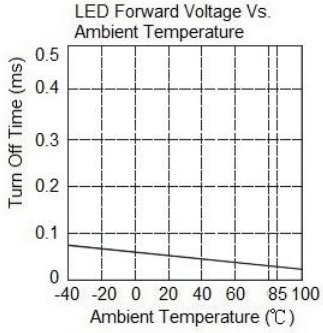
6: Drain (MOS FET)

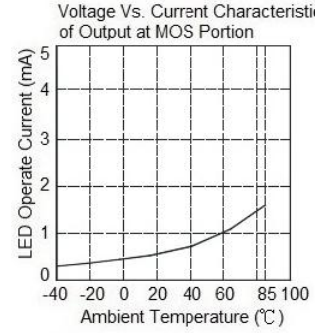
Engineering Data

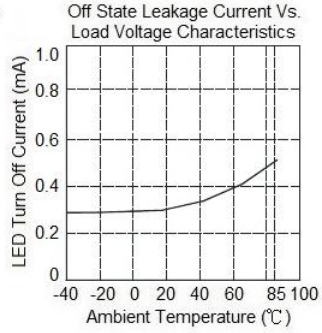












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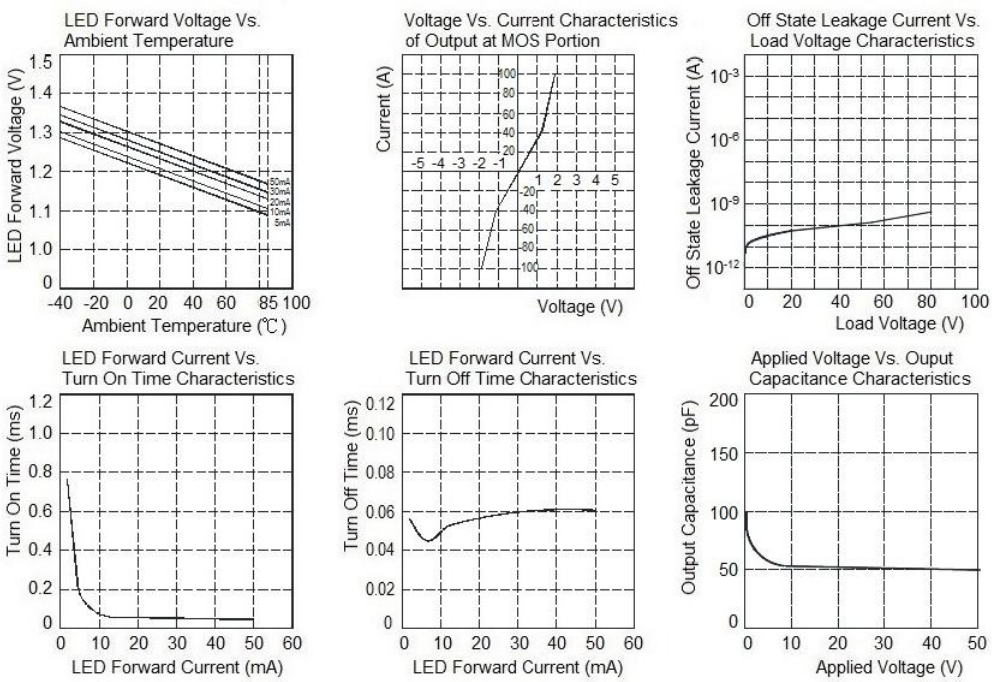

Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≦1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≦5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.5mm.

2) The tolerance without indicating for PCB layout is always ±0.1mm.

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.