



JOR416 Series

400V MOSFET Output Photorelay

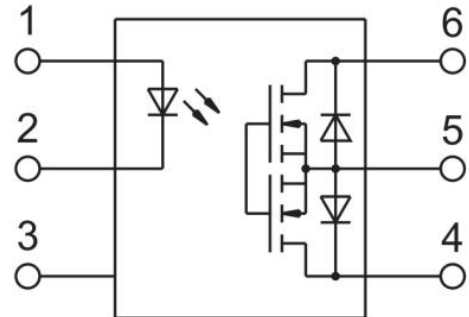
Description

The JOR416 photorelay consists of infrared light-emitting diode, photoelectric generator, and optical MOSFET coupling.

Features

- Normally open, single pole single throw
- Control 400V AC or DC voltage
- Switch 130mA loads
- Controls low-level analog signals
- High sensitivity, low on resistance
- Low-level off-state leakage current
- High isolation voltage 5KV
- Pb free and RoHS compliant

Block Diagram and Package

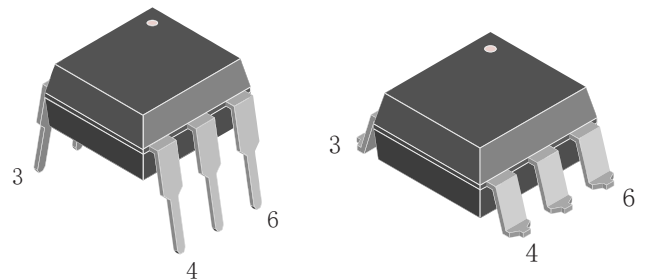


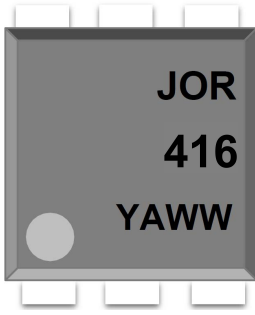

- 1: Anode (LED)
- 2: Cathode (LED)
- 3: NC
- 4,5,6: Drain (MOSFET)

PACKAGE OUTLINE

Application

- Telecommunications(PC, electronic notepad)
- Modem/Sensors
- Telephone /Security equipment
- Measuring and testing equipment
- Factory automation equipment
- High speed inspection machines



ORDERING AND MARKING INFORMATION	
MARKING INFORMATION	
	<p>JOR : Company Abbr. 416 : Part Number Y : Fiscal Year A : Manufacturing Code WW : Work Week</p>
ORDERING INFORMATION	LABEL INFORMATION
JOR416DX(Y)(Z)-G	
<p>JOR – Company Abbr 416 – Part Number D – DIP or SMD Package X – 6(Pin Count) Y – Lead Form Option (SL/ None) Z – Tape and Reel Option (T1/ T2) G – Green</p>	

Absolute Maximum Ratings (T_A=25°C)

	Parameter	Symbol	Rating	Unit	Note
Input	LED Forward Current	I _F	50	mA	
	LED Reverse Voltage	V _R	3	V	
	Peak Forward Current	I _{FP}	1	A	f =100 Hz, Duty cycle= 0.1%
	Power Dissipation	P	75	mW	
Output	Load Voltage (peak AC)	V _L	400	V	
	Continuous Load Current (peak AC)	I _L	0.13	A	
	Peak Load Current	I _{peak}	0.3	A	100 ms (1 shot), V _L = DC
	Power Dissipation	P _{out}	500	mW	
Temperature Limits	Operating Temperature	T _{opr}	-40 ~ + 85	°C	Non-condensing at low temperatures
	Storage Temperature	T _{stg}	-40 ~ + 100		
	I/O isolation voltage	V _{iso}	5,000	V _{rms}	

Electro-optical Characteristics (Ta=25°C)

Parameter		Symbol	Condition	Min	Typ	Max	Unit
Input	LED turn on current	I _{Fon}	I _L =0.13A	-	0.6	3	mA
	LED turn off current	I _{Foff}	I _L =0.13A	-	0.4	3	mA
	LED dropout voltage	V _F	I _F =5mA	1	1.3	1.4	V
Output	On resistance	R _{on}	I _F =5mA, I _L =0.13A, Within 1s on time	-	14	30	Ω
	Off state leakage current	I _{Leak}	I _F =0mA, V _L =400V	-	-	1000	nA
Transfer Characteristics	Turn on time	T _{on}	I _F =5mA, I _L =0.13A	10	137	2000	us
	Turn off time	T _{off}	I _F =5mA, I _L =0.13A	10	23	1000	us
	I/O Isolation capacitance	C _{iso}	f=1MHz, V _B =0		0.8	1.5	pF
	Initial I/O Isolation resistance	R _{iso}	500V DC	1,000			MΩ

Note: Recommended LED Forward Current I_F=5 to 10mA.

Typical Performance Curves

Fig.1 Load Current--Ambient temperature

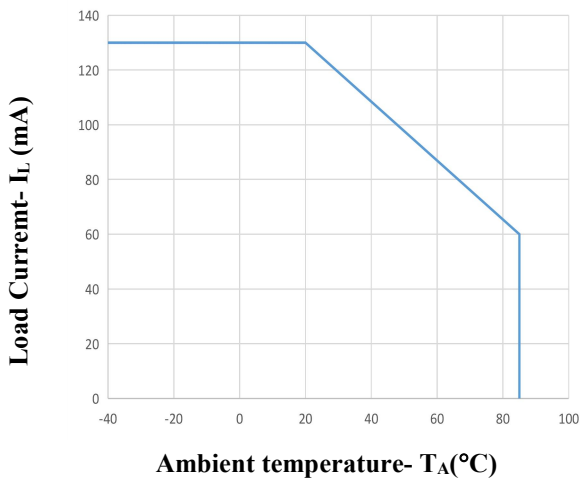


Fig.2 On resistance--Ambient temperature

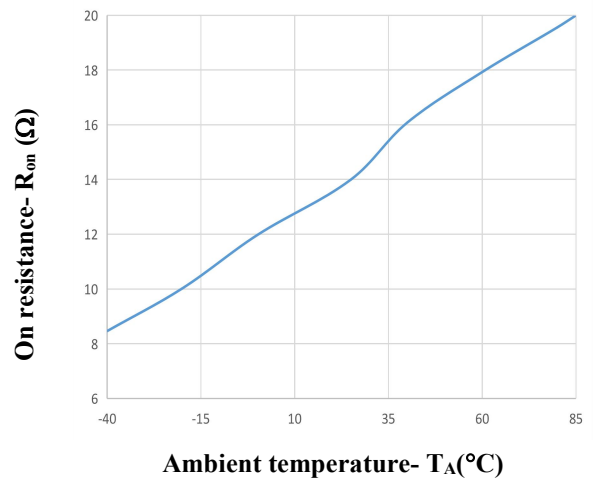


Fig.3 Turn on time--Ambient temperature

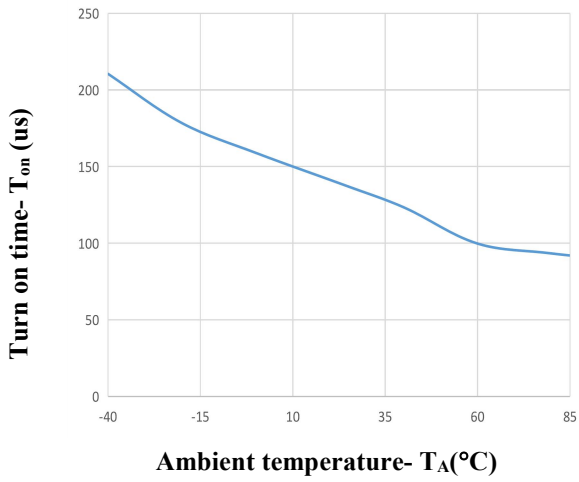


Fig.4 Turn off time--Ambient temperature

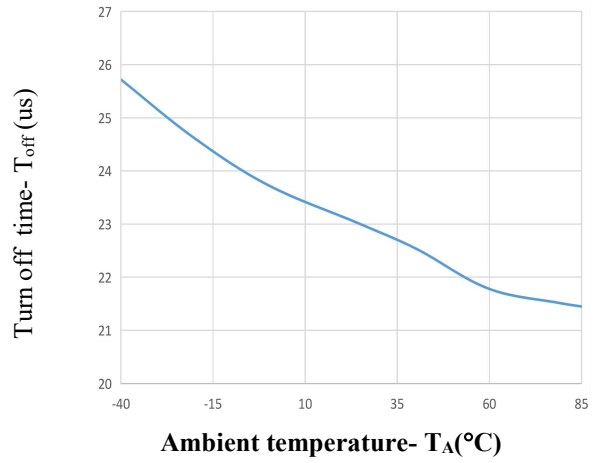


Fig.5 LED turn on current--Ambient temperature

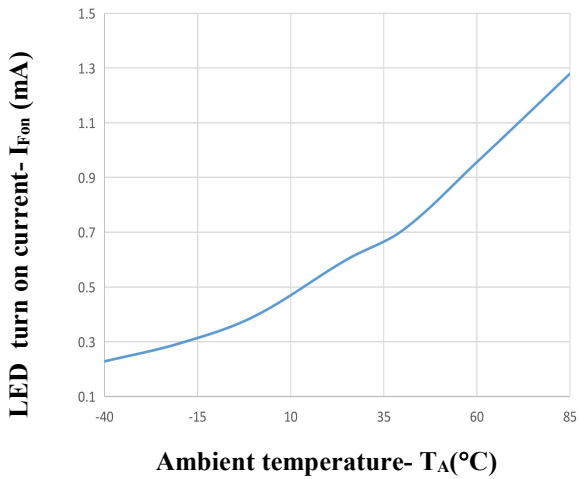


Fig.6 LED turn off current--Ambient temperature

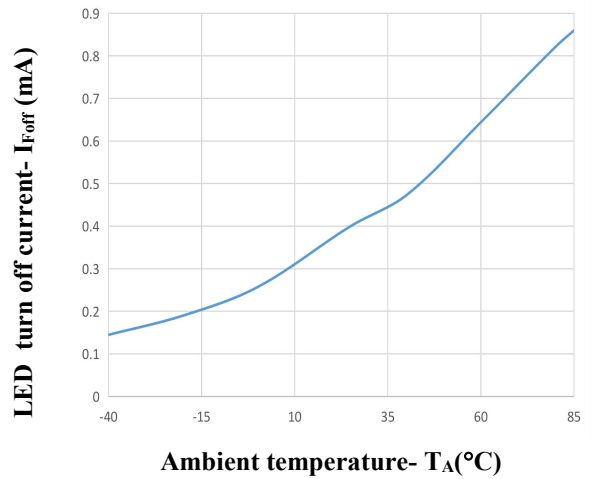


Fig.7 LED Forward Voltage--Ambient temperature

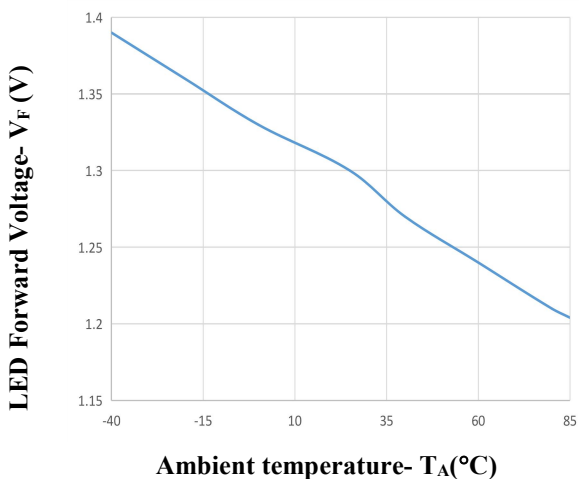


Fig.8 Output current--Voltage characteristics

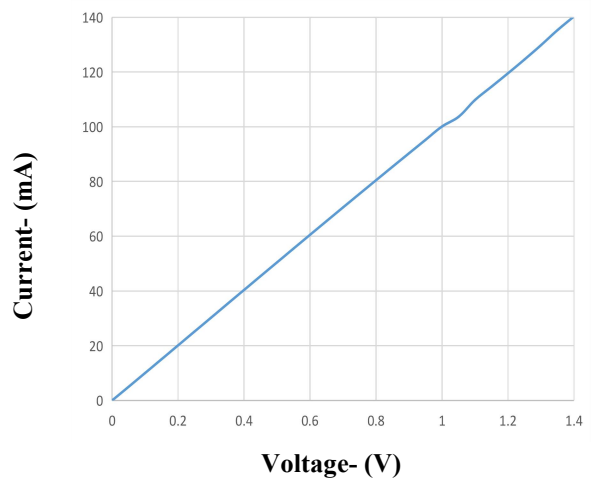


Fig.9 Off state leakage current--Load Voltage

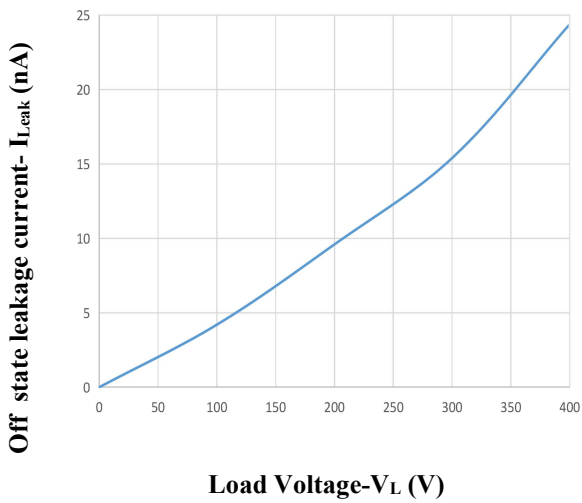


Fig.10 Turn on time--Forward Current

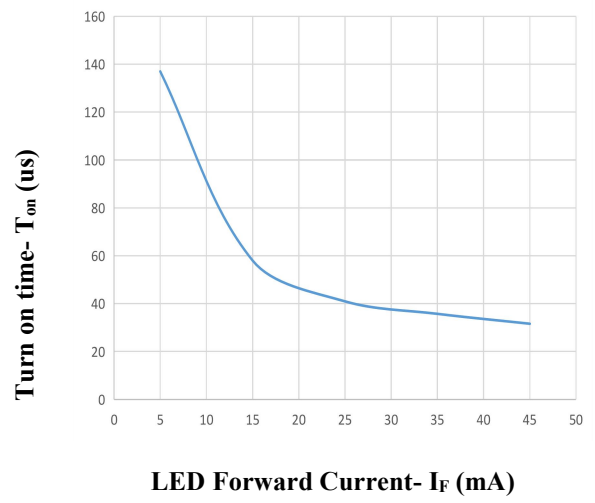
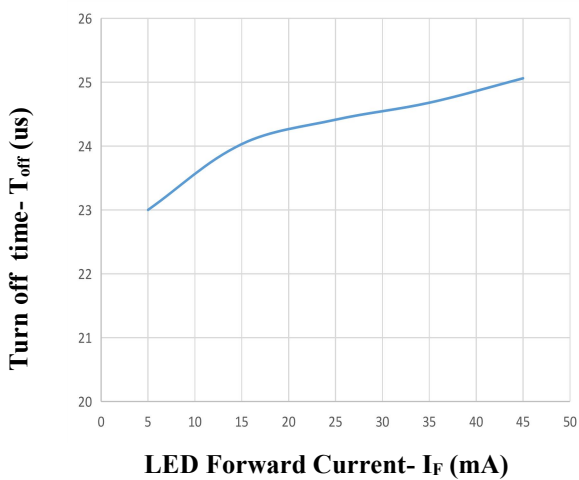
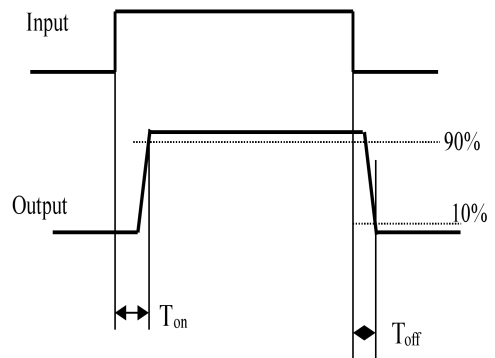


Fig.11 Turn off time--Forward Current

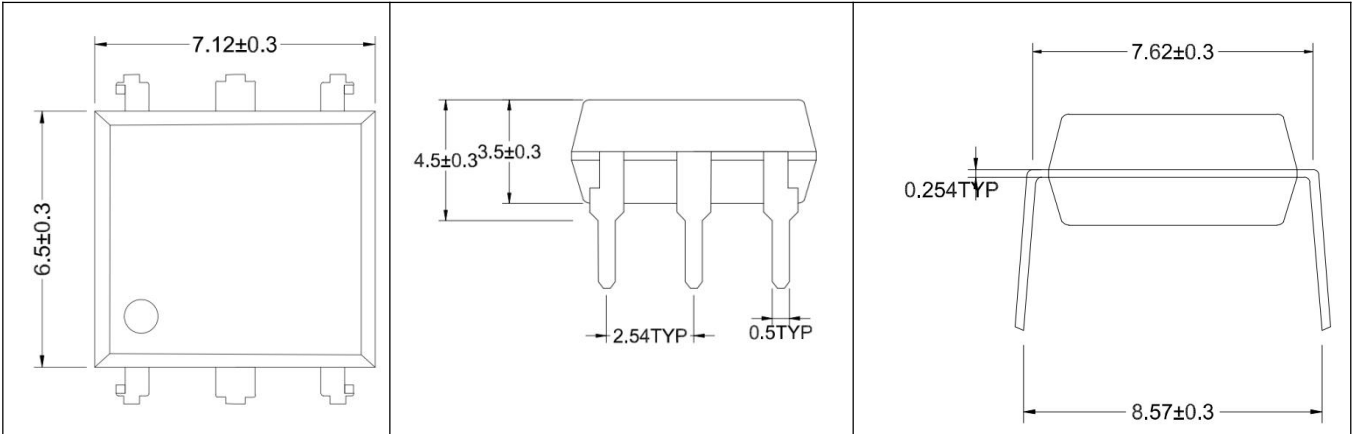


Turn on/off time

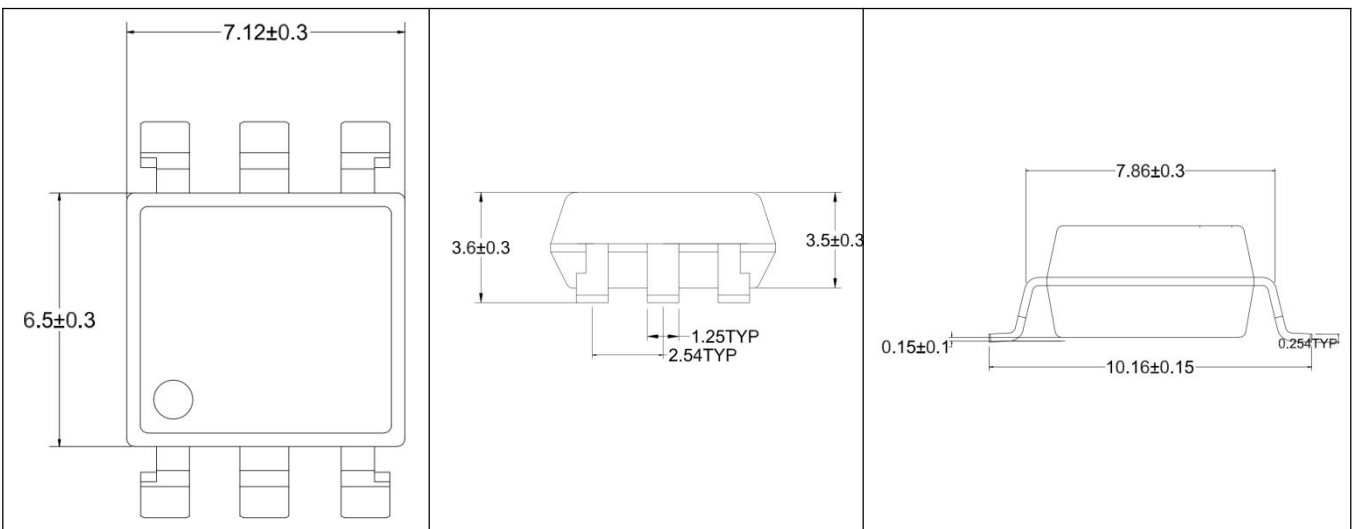


Package Dimensions

Unit: mm



6-pin DIP



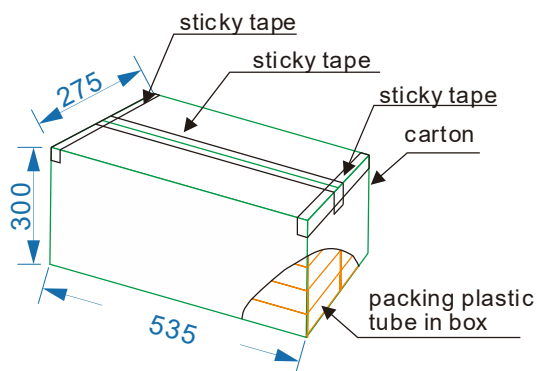
6-pin SMD

Packing

Package Type	Packing Form	Quantity per Reel	Quantity per Box	Quantity per Carton	Antistatic Bag Specification	Box Specification	Carton Specification	Note
SMD-6	Reel (ϕ 330mm Blue)	1k pcs/reel	2 reels /box	10 boxes /ctn	380*380mm	340*60*340 mm	620*360*365 mm	Guard band 200mm min.
DIP-6	Tube (500*12*11mm)	65 pcs /tube	50 tubes/box	10 boxes /ctn	NA	525*128*56 mm	535*275*300 mm	Use blue and white rubber stoppers for each tube, with the same direction

■ DIP-6 (Tube)

- 1) Qty/ctn: 32500pcs
- 2) Inner packing:
 - i. 65pcs/tube, antistatic tube, indication of trade mark and antistatic.
 - ii. 50tubes/box
- 3) Schematic: (Unit:mm)



■ SMD-6 (Reel)

- 1) Qty/reel: 1000pcs, Qty/ctn: 20000pcs
- 2) Inner packing: 1000pcs/reel
- 3) Schematic: (Unit:mm)

