

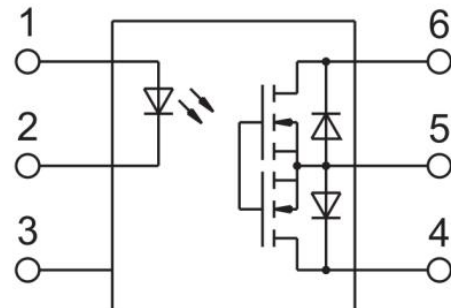
JOR214 Series

400V MOSFET Output Photorelay

Description

The JOR214 photorelay consists of infrared light-emitting diode, photoelectric generator, and optical MOSFET coupling.

Block Diagram and Package



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

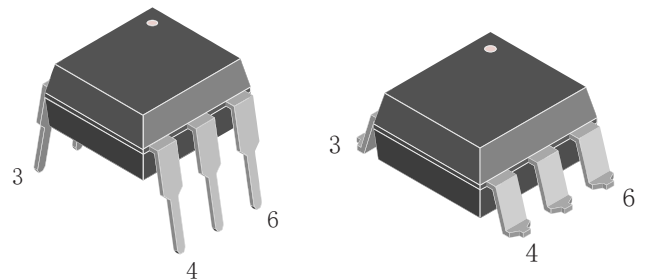
Features

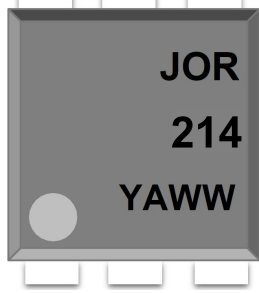

- Normally open, single pole single throw
- Control 400V AC or DC voltage
- Switch 130mA loads
- Controls low-level analog signals
- High sensitivity, low on resistance
- Low-level off-state leakage current
- High isolation voltage 5KV
- Pb free and RoHS compliant

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><b>JOR</b> : Company Abbr.  <b>214</b> : Part Number  <b>YAWW</b> : LOT NO.</p>
ORDERING INFORMATION	LABEL INFORMATION
<p><b>JOR214DX(Y)(Z)-G</b>  <b>JOR</b> – Company Abbr  <b>214</b> – Part Number  <b>D</b> – DIP or SMD Package  <b>X</b> – 6(Pin Count)  <b>Y</b> – Lead Form Option (SL/None)  <b>Z</b> – Tape and Reel Option (T1/T2)  <b>G</b> – Green</p>	

**Absolute Maximum Ratings (T<sub>A</sub>=25°C)**

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

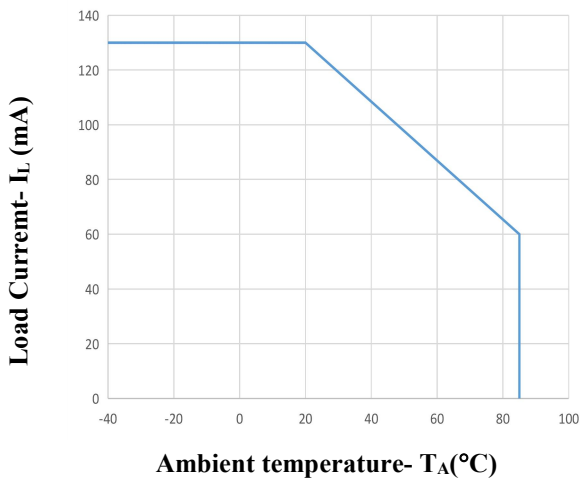
**Electro-optical Characteristics (Ta=25°C)**

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	$\Omega$
	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			M $\Omega$

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**

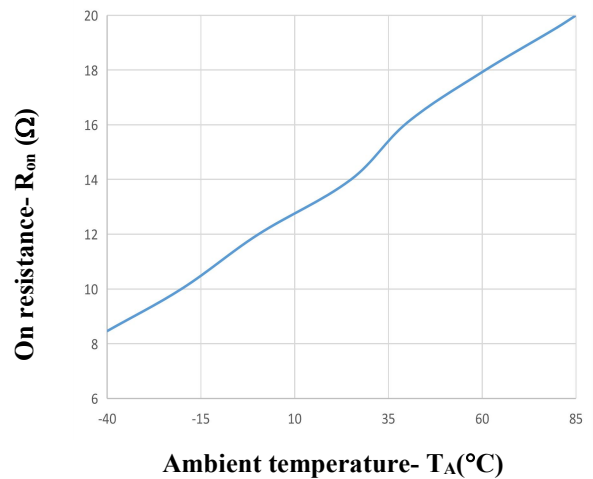


Fig.3 Turn on time--Ambient temperature

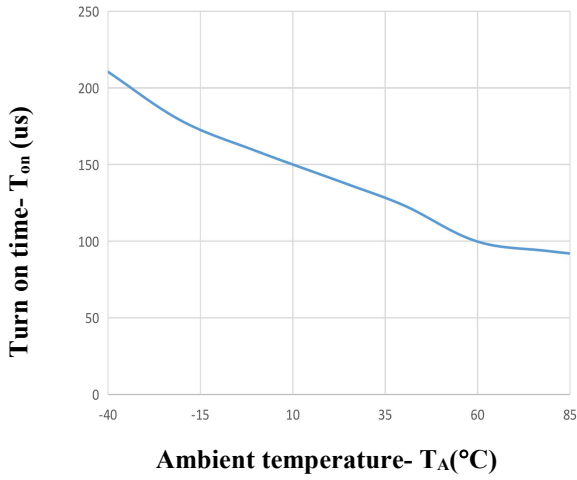


Fig.4 Turn off time--Ambient temperature

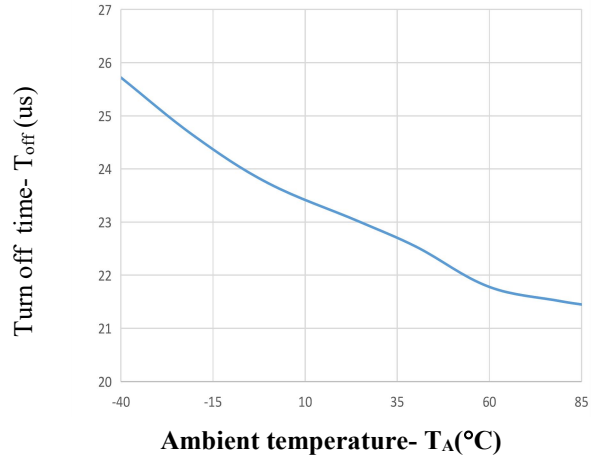


Fig.5 LED turn on current--Ambient temperature

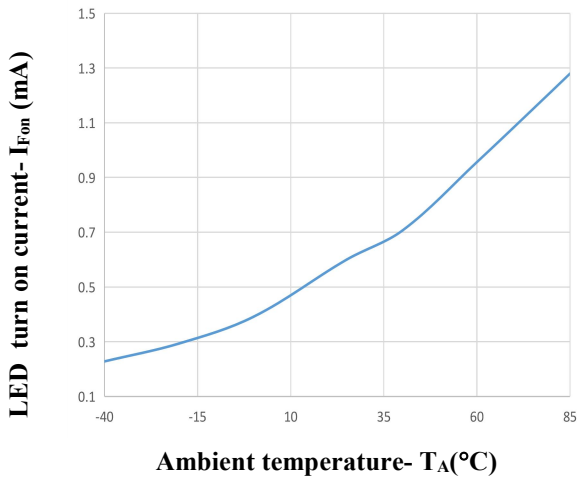


Fig.6 LED turn off current--Ambient temperature

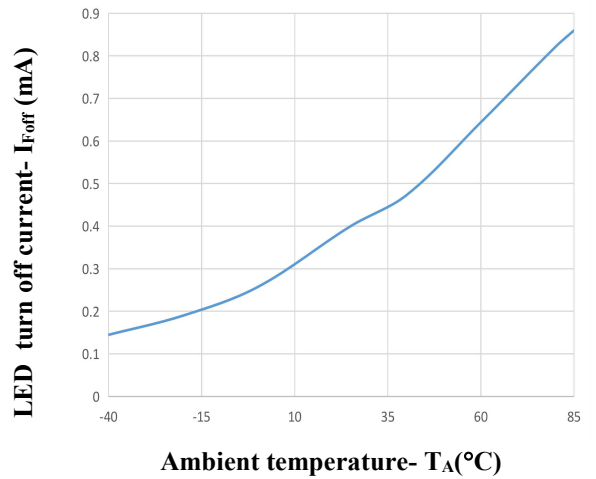


Fig.7 LED Forward Voltage--Ambient temperature

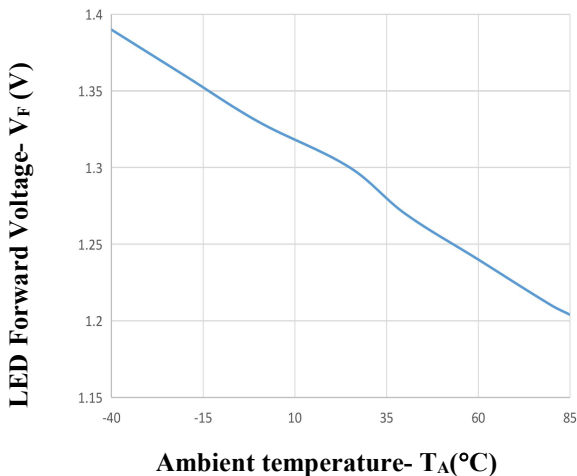
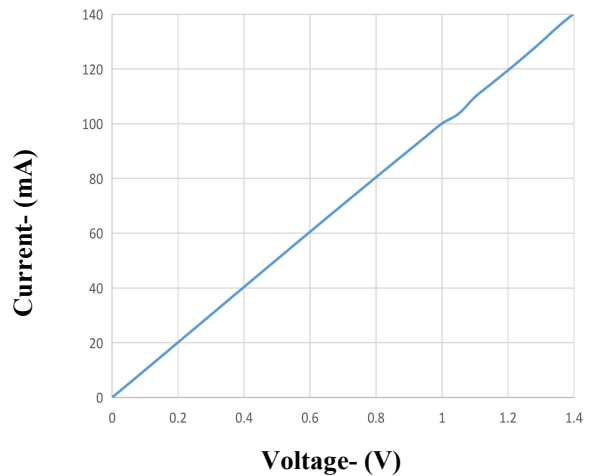
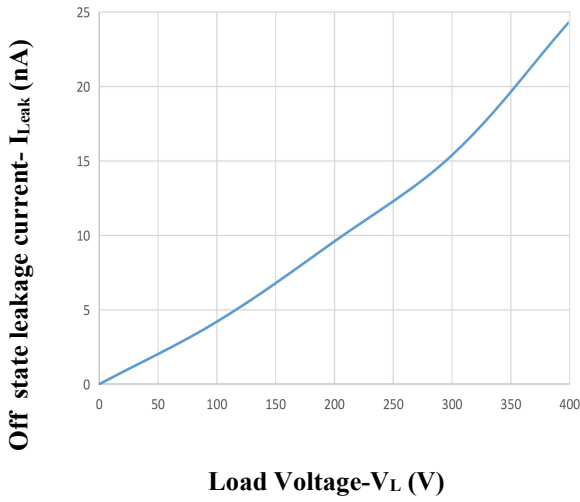


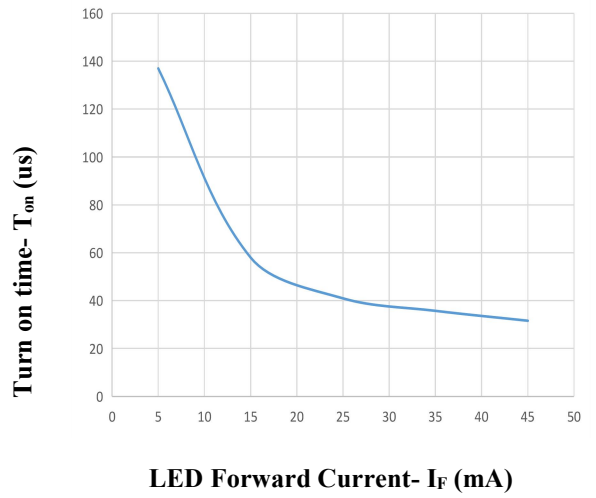
Fig.8 Output current--Voltage characteristics



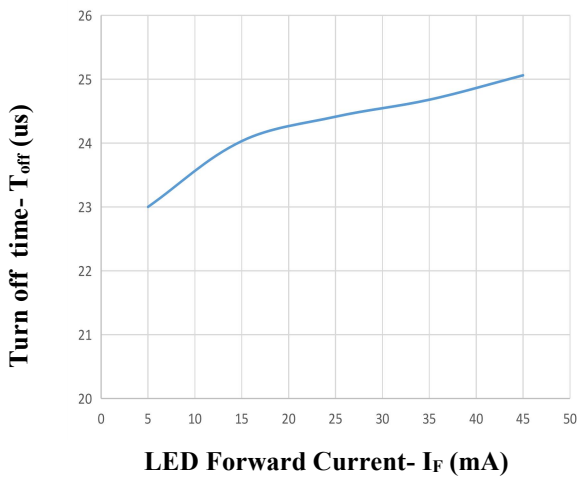
**Fig.9 Off state leakage current--Load Voltage**



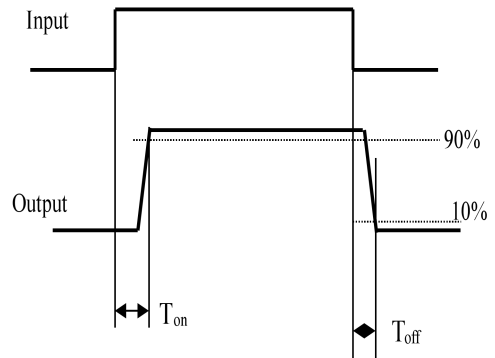
**Fig.10 Turn on time--Forward Current**



**Fig.11 Turn off time--Forward Current**

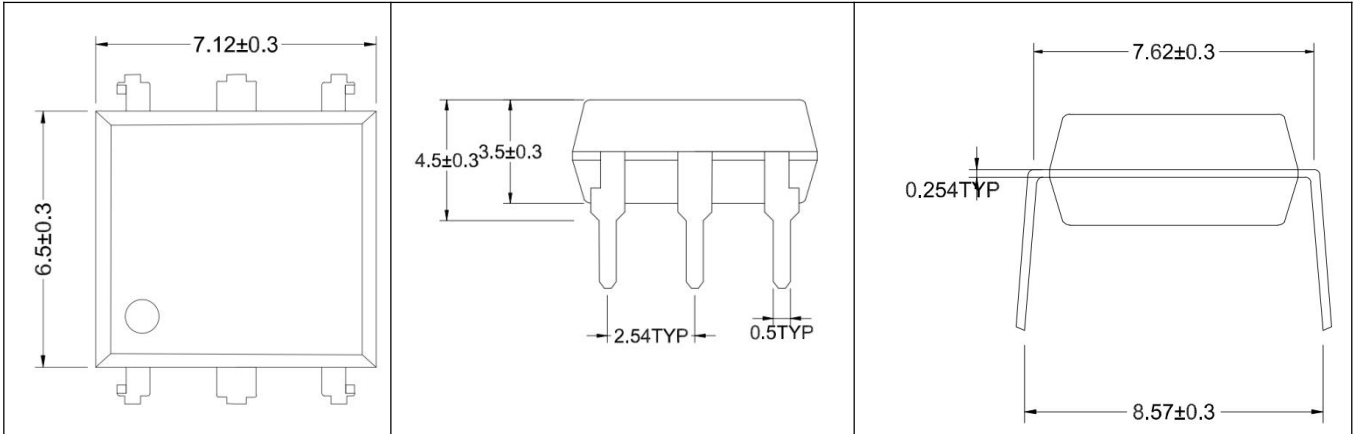


**Turn on/off time**

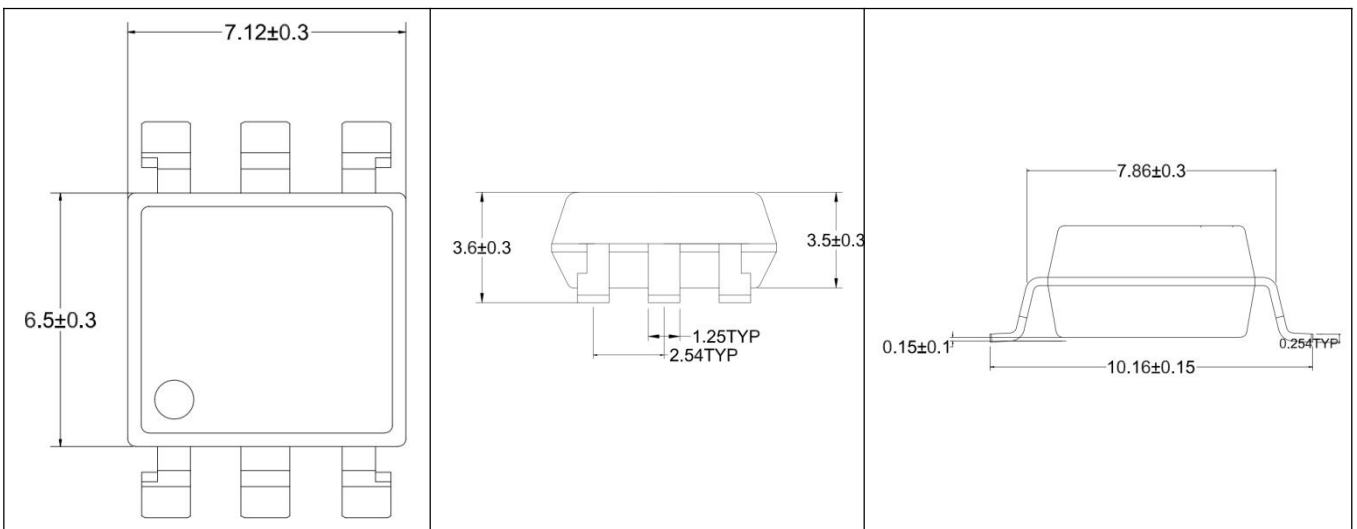


Package Dimensions

Unit: mm



6-pin DIP



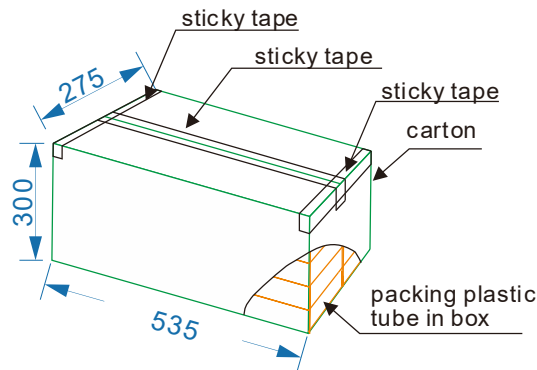
6-pin SMD

**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 ( $\phi$ 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)

