



JOR21X Series

Rev.A.1.0

DESCRIPTION:

The products are 4-pin optical relays. The device consists of an AlGaAs infrared emitting diode input stage optically coupled to a high-voltage output detector circuit in a plastic SOP4 package. The detector consists of a high-speed photovoltaic diode array and driver circuitry. The products are widely used in measuring and testing equipment, security and disaster prevention market, industrial machinery and equipment.

MAIN FEATURES

High isolation 3750 Vrms

Wide variation of load voltage 60V to 600V

Operating temperature range -40°C to 110°C

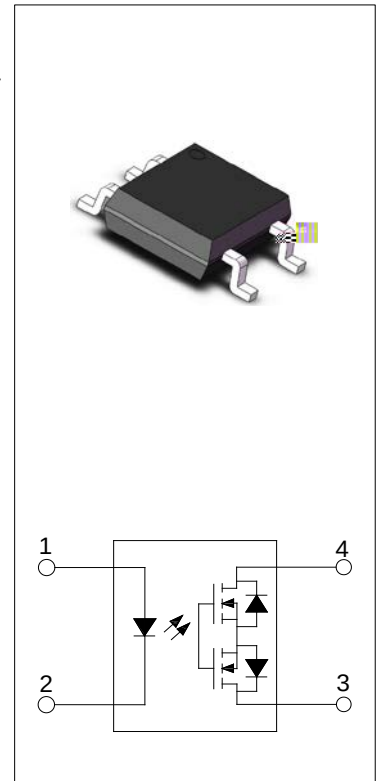
REACH & RoHS compliance

HBM: H3A; MM: M4; CDM: C3

CQC approved

VDE approved

UL approved



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Parameter		Symbol	Value	Unit
Input	Forward Current	I_F	50	mA
	Peak Forward Current	I_{FP}	1	A
	Reverse Voltage	V_R	6	V
	Input Power Dissipation	P_D	75	mW
Output	Load Voltage	JOR212	60	V
		JOR213	100	
		JOR217	200	
		JOR214	400	
		JOR216	600	
	Continuous load current	JOR212	1.25	A
		JOR213	1.25	
		JOR217	0.3	
		JOR214	0.1	
		JOR216	0.05	
	Output Power Dissipation	P_O	300	mW

Total Power Dissipation	P_{tot}	375	mW
Isolation Voltage	V_{iso}	3750	Vrms
Operating Temperature	T_{opr}	-40~110	
Junction Temperature	T_j	125	
Storage Temperature	T_{stg}	-55~125	
Soldering Temperature	T_{sol}	260	

NOTE1 100 μ s pulse, 100Hz frequency

NOTE2 AC for 1 minute, R.H.=40~60%

ELECTRICAL CHARACTERISTICS (Temperature=25°C)

Parameter			Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage		V_F	$I_F=10mA$	-	1.3	1.5	V
	Reverse Current		I_R	$V_R=6V$	-	-	1	A
	Action Current		$I_{F(ON)}$	$I_O=I_{O(MAX)}$	-	0.9	3	mA
	Reset Current		$I_{F(OFF)}$	$I_O=I_{O(MAX)}$	0.4	0.8	-	mA
Output	On Resistance	JOR212	R_{on}	$I_F=5mA$ $I_O=Max.$ Within 1s on time	-	0.2	0.4	
		JOR213			-	0.15	0.4	
		JOR217			-	2	4	
		JOR214			-	20	30	
		JOR216			-	30	40	
	Off State Leakage Current		I_{Leak}	$I_F=0mA$, $V_O=Max.$	-	-	1	A
	Output Capacitance		C_{OFF}	$V_{OFF}=0V$, $f_o=1MHz$	10	-	1000	pF
Switching Characteristics	Isolation Resistance		R_{ISO}	DC500V 40~60%R.H.	10^{12}	-	-	
	Floating Capacitance		C_{IO}	$V=0$, $f=1MHz$	-	0.8	-	pF
		JOR212			-	0.6	2	
Turn On Time		t_{on}		$I_F=5mA$, $I_O=Max.$				ms

ORDERING AND MARKING INFORMATION

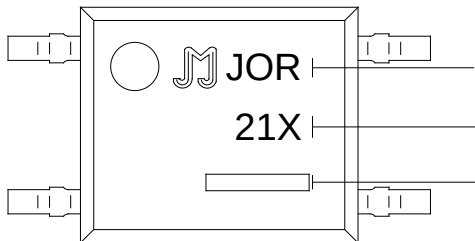
MARKING INFORMATION			
		: Company Abbr. : Part Number & Rank : Production Information Code	
Packing Quantity			
Option	Quantity	Quantity – Inner box	Quantity –Outer box
SOP4	3000 Units/Reel	2 Reels/Inner box	5 Inner box/Outer box =30k Units

FIG.7: Turn On Time vs. Ambient Temperature

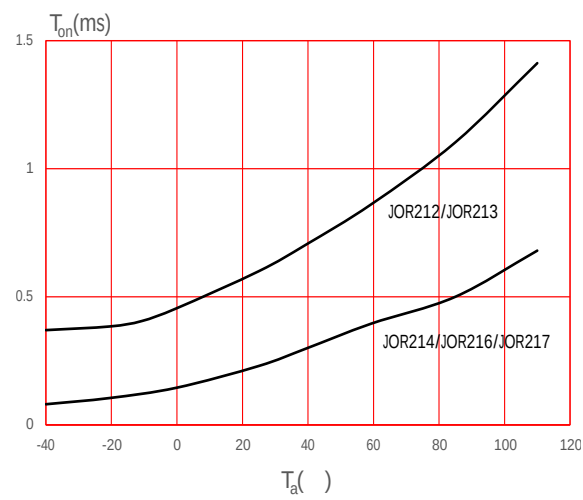
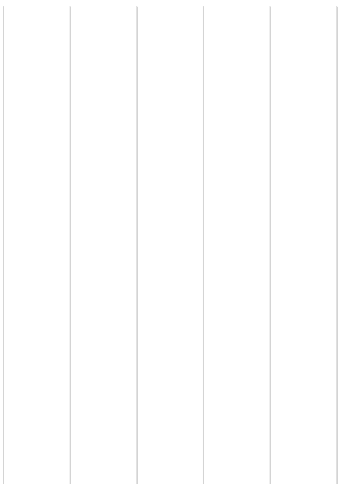
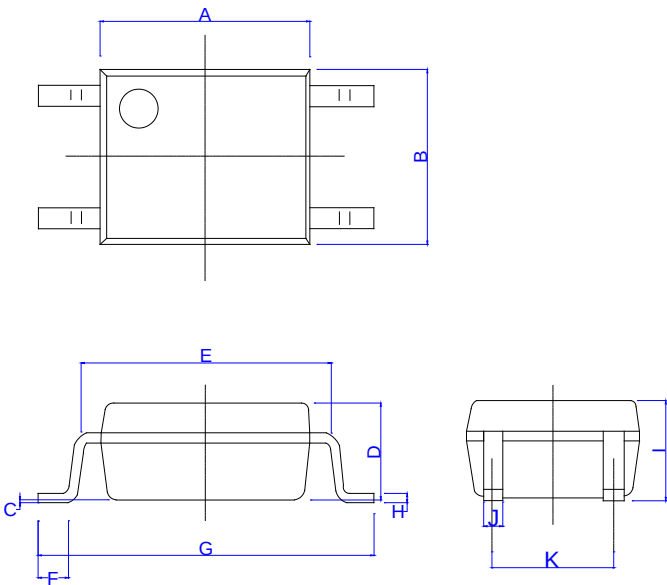


FIG.8: Turn Off Time vs. Ambient Temperature

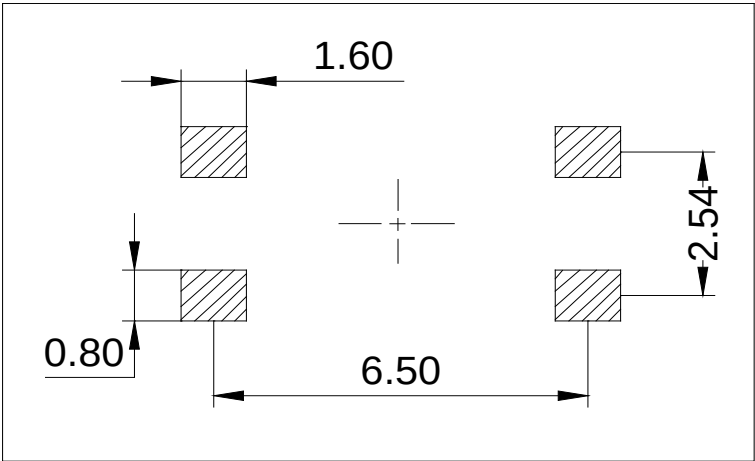


Package Dimension (Unit:mm)



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.80	0.173		0.189
B	3.60		4.20	0.142		0.165
C	0.00		0.20	0.000		0.008
D	1.90		2.30	0.075		0.091
E	5.00		5.60	0.197		0.220
F	0.34		0.94	0.013		0.037
G	6.70		7.30	0.264		0.287
H	0.10		0.30	0.004		0.012
I	2.00		2.40	0.079		0.094
J	0.25		0.55	0.010		0.022
K	2.29		2.79	0.090		0.110

RECOMMENDED SOLDER MASK DIMENSIONS (All dimensions in mm unless otherwise stated)

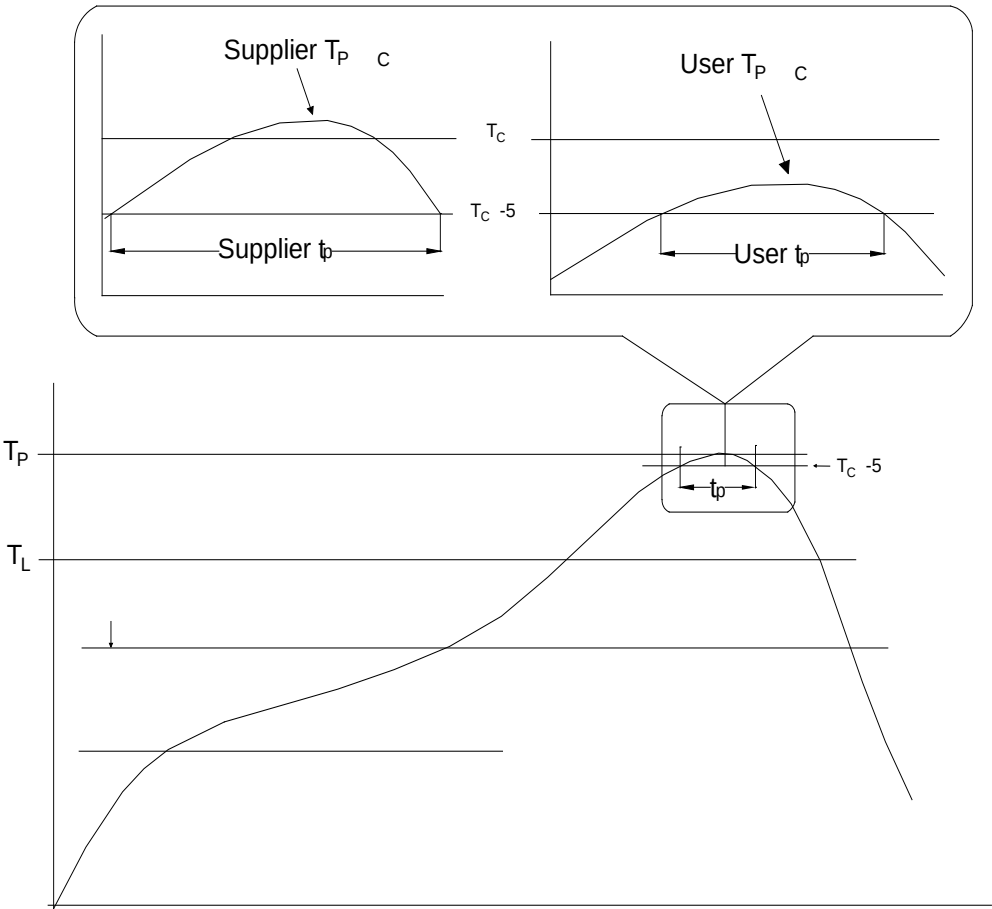


CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option T1



REFLOW INFORMATION p



Note:

1. Reflow soldering is recommended at the temperatures and times shown, no more than three times.
2. Avoid direct contact between the epoxy body and any tools or surfaces exceeding its maximum storage temperature.
3. Application of pressure on the epoxy body is prohibited at elevated temperatures. In specific scenarios, any applied force must not exceed 2.5N.
4. Ensure the component has cooled to ambient temperature before proceeding with any subsequent manufacturing steps.
5. The component has a shelf life of one year when stored under standard conditions.
6. Recommend storage Temp.: 0~40°C;
Recommend storage humidity: <60%;
MSL level: MSL 1

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