



JOCSZ21X-M4,JOCSZ31X-M4 Series

Rev.A.1.0

DESCRIPTION:

The products are 4-pin thyristor opto-couplers. The device combines an AlGaAs infrared emitting diode as the emitter which is optically coupled to a monolithic silicon zero-crossing photo triac in a plastic SOP4 package. The products are widely used in solenoid/valve controls, lighting controls, motor controls, temperature controls, static AC power switches, solid state relays, interfacing microprocessors up to 265 V_{AC} peripherals.

MAIN FEATURES

High isolation 3750 VRMS

DC input with zero-crossing photo triac output

Operating temperature range -55 to 110

REACH & RoHS compliance

Operating Temperature	T_{opr}	-55~110	
Junction Temperature	T_j	125	
Storage Temperature	T_{stg}	-55~125	
Soldering Temperature	T_{sol}	260	
Peak pulse voltage ($T_j=25$; non-repetitive,off-state)	V_{pp}	1	kV

NOTE1: 100 μ s pulse, 100Hz frequency NOTE2: AC for 1minute, R.H.=40~60%

ELECTRICAL CHARACTERISTICS (Temperature=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	
Input	Forward Voltage	V_F	$I_F=10mA$	-	1.2	1.5	V	
	Reverse Current	I_R	$V_R=6V$	-	-	1	μA	
	Input Capacitance	C_{in}	$V=0, f=1kHz$	-	10	-	pF	
Output	Peak Off-state Current, Either Direction	I_{OFF}	$V_{OFF}=Rated V_{OFF}$ $I_F=0$	-	-	100	nA	
	Peak On-state Voltage, Either Direction	V_{TM}	$I_{TM}=100mA$	-	1.8	2.5	V	
	Critical Rate of Rise of Off-state voltage	dV/dt	$V_{PEAK}= Rated V_{PEAK}$ $I_F=0$	2000	-	-	V/ μ s	
Transfer Characteristics	LED Trigger Current	JOCSZ21A JOCSZ31A	I_{FT}	Terminal Voltage=3V $I_{TM}=100mA$	-	-	10	mA
		JOCSZ21B JOCSZ31B			-	-	5	
		JOCSZ21C JOCSZ31C			-	-	3	
		Holding Current			I_H	$I_{TM}=2mA,$ $I_F=Rated I_{FT}$	-	
	Isolation Resistance	R_{ISO}	DC500V 40~60%R.H.	10^{12}	10^{14}	-		
	Floating Capacitance	C_{IO}	$V=0,$ $f=1MHz$	-	5	-	pF	
	Response Time	t_{on}	$V_D=6V,$ $R_L=100$, $I_F=20mA$	-	15	50	μs	
Zero-Crossing Characteristics	Inhibit Voltage	V_{IH}	$I_F=Rated I_{FT}$	-	-	20	V	
	Leakage in Inhibited State	I_{OFF2}	$I_F=Rated I_{FT}$ $V_{OFF}=Rated V_{OFF}$	-	-	5	mA	

NOTE3: Test voltage must be applied within dV/dt ratings.

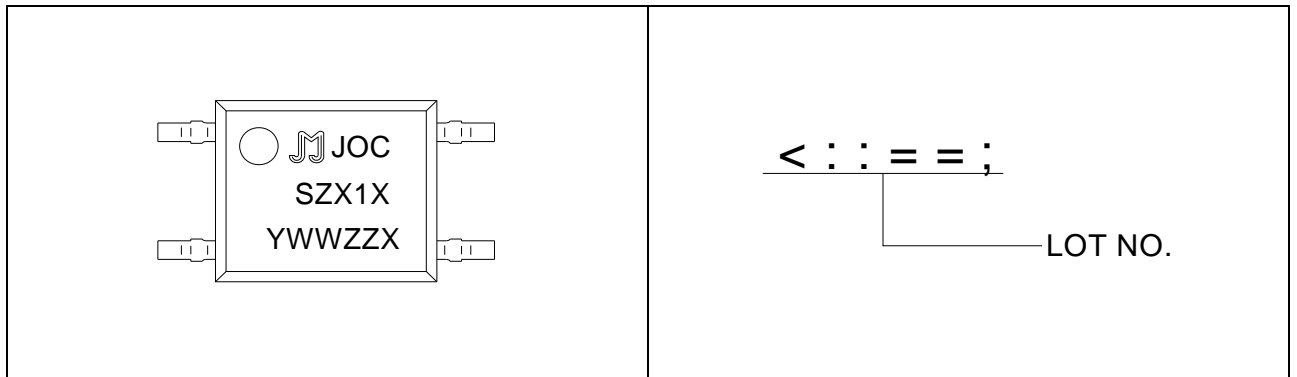
NOTE4: Refer to Fig.14 & Fig.15

ORDERING INFORMATION

<p>J</p> <p>JieJie Microelectronics Co., Ltd.</p> <p>Opto Coupler</p>	<p>OC</p>	<p>S</p> <p>SCR</p> <p>Zero-crossing</p>	<p>Z</p>	<p>2</p>	<p>1</p>	<p>A</p> <p>A:I_{FT} 10mA B:I_{FT} 5mA C:I_{FT} 3mA</p> <p>I_{T(RMS)}:100mA</p> <p>2:V_{OFF} 600V 3:V_{OFF} 800V</p>	<p>-M4</p> <p>SOP4</p>	<p>/</p> <p>None:T1 R:T2</p>
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Packing Quantity	
Option	Quantity
None/R	3000 Units/Reel

MARKING



Characteristics Curves

FIG.1: Max. Allowable LED Forward Current vs. Ambient Temperature

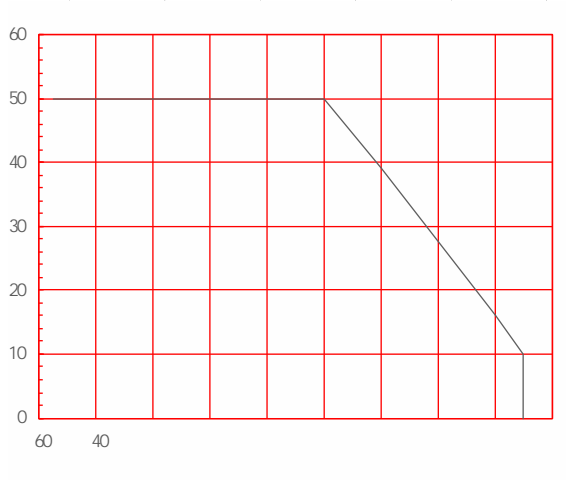


FIG.2: On-state Terminal Current vs. Ambient Temperature

FIG.7: Normalized On-state Terminal Voltage vs. Ambient Temperature

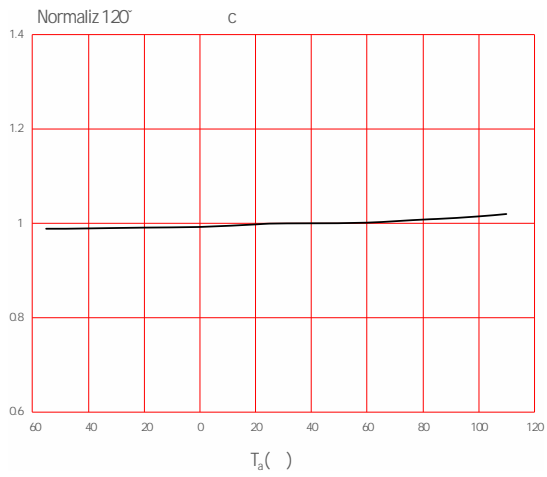


FIG.8: On-state Terminal Voltage vs. On-state Terminal Current

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TEST CIRCUITS

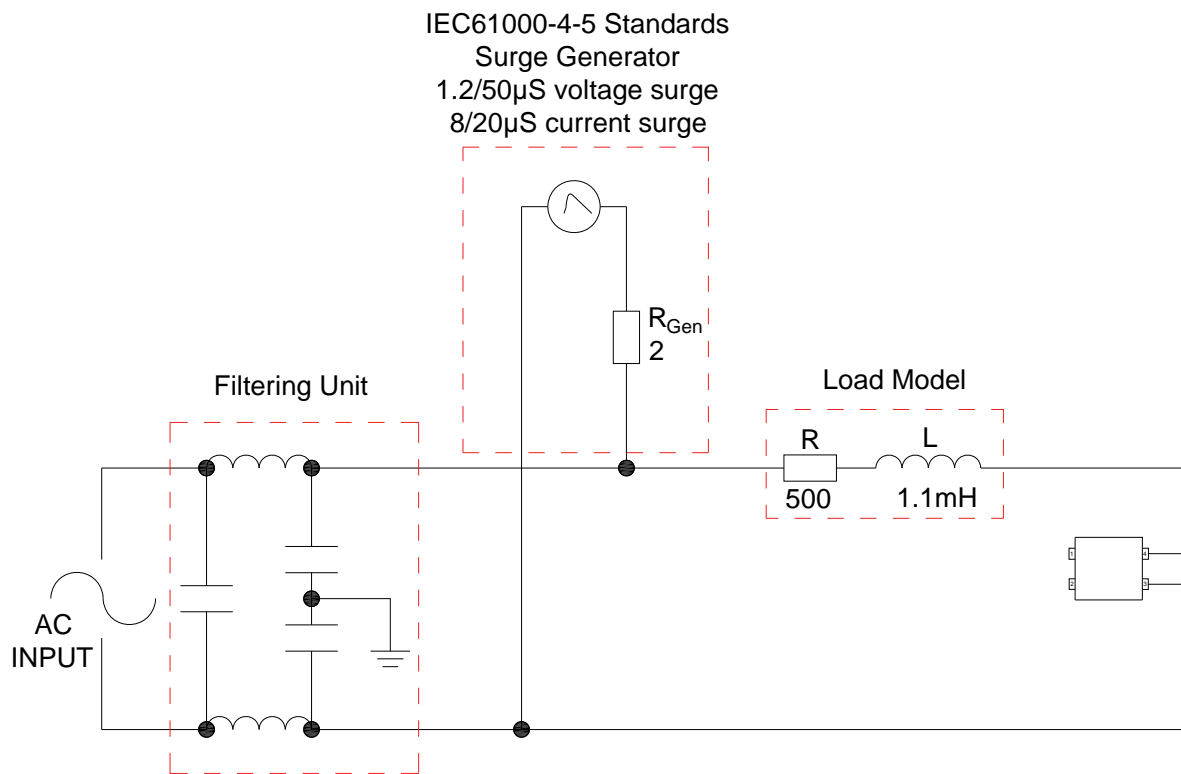
FIG.12: Test Circuits of Turn On Time

FIG.13: Waveforms of Turn On Time

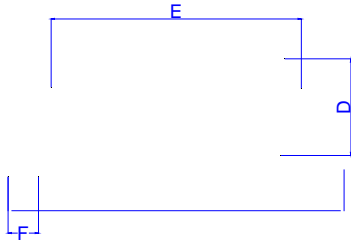
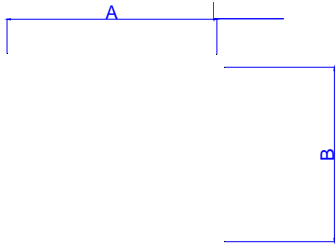
Fig.14: Test Circuits of dV/dt



FIG.16: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards

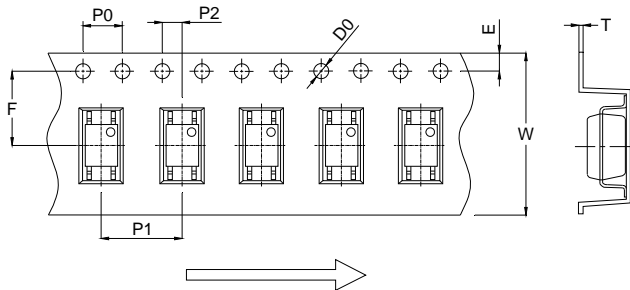


Package Dimension (Unit: mm)



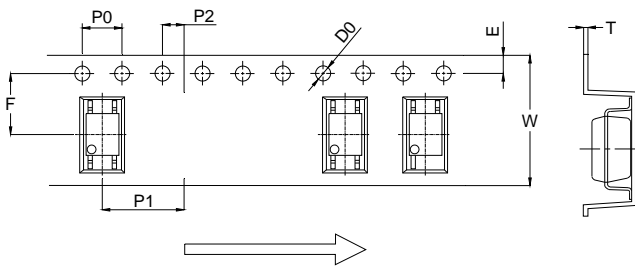
CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option None



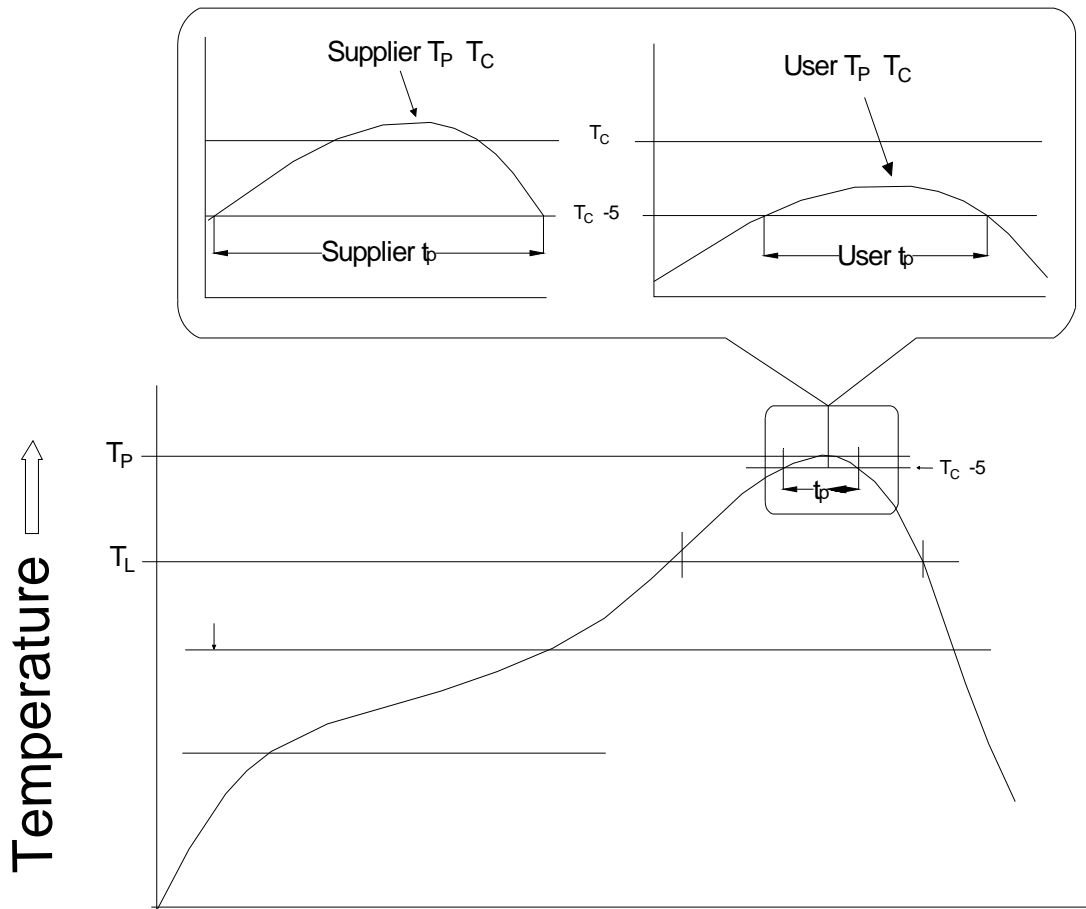
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	7.90	8.00	8.10	0.311	0.315	0.319
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
T	0.27	0.30	0.33	0.011	0.012	0.013
W	15.80	16.00	16.20	0.622	0.630	0.638

Option R



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0						
P0						
P1						
P2						
E						
F						
T						
W						

REFLOW INFORMATION



Note: