JOCSZ21X-M4,JOCSZ31X-M4 Series

Rev.A.1.0

The products are 4-pin thyristor opto-couplers. The device combines an AIGaAs 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.

High isolation 3750 VRMS
DC input with zero-crossing photo triac output
Operating temperature range -55 to 110
REACH & RoHS compliance
HBM: Ζ

0 °V 8 Æ + %

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

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(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/μs
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}	-	500	-	μA
	Isolation Resistance		R_{ISO}	DC500V 40~60%R.H.	10^{12}	10^{14}	-	Ω
	Floating Capacitance		C_{IO}	V=0, f=1MHz	-	5	-	pF
	Response Time		t_{on}	V_D=6V, R_L=100Ω, 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

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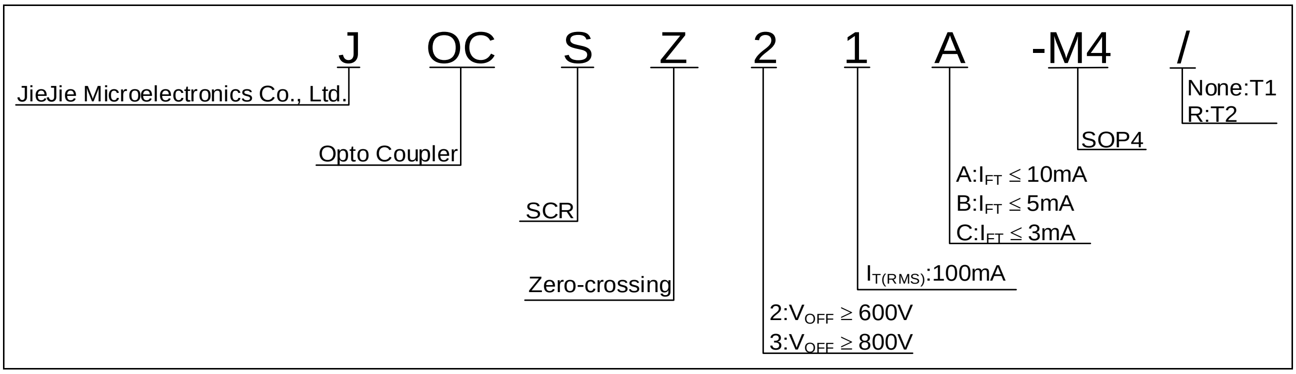

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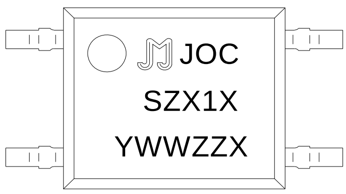


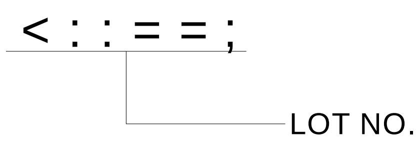


FIG.1: Max. Allowable LED Forward Current vs. Ambient Temperature

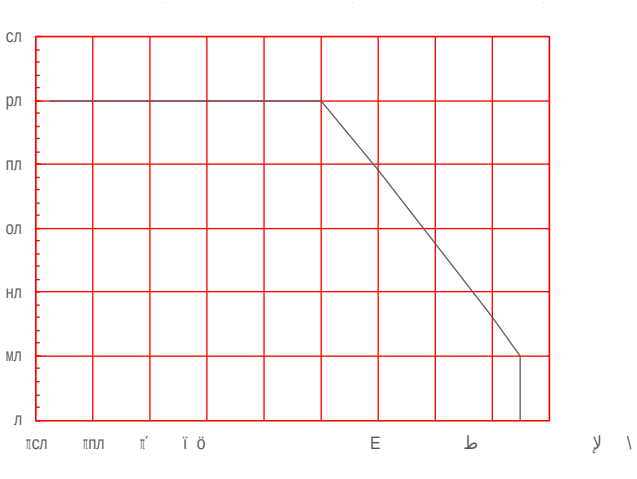


FIG.2: On-state Terminal Current vs. Ambient Temperature

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

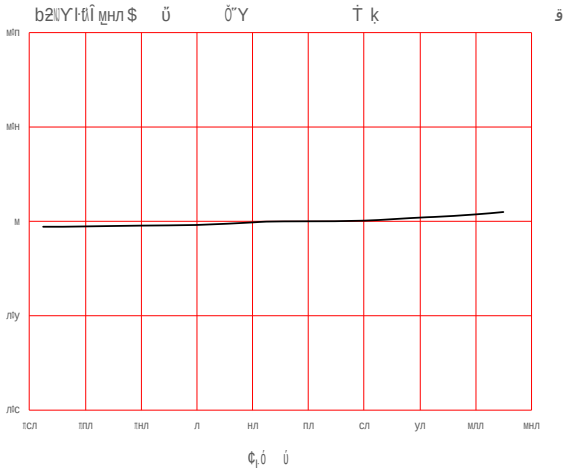


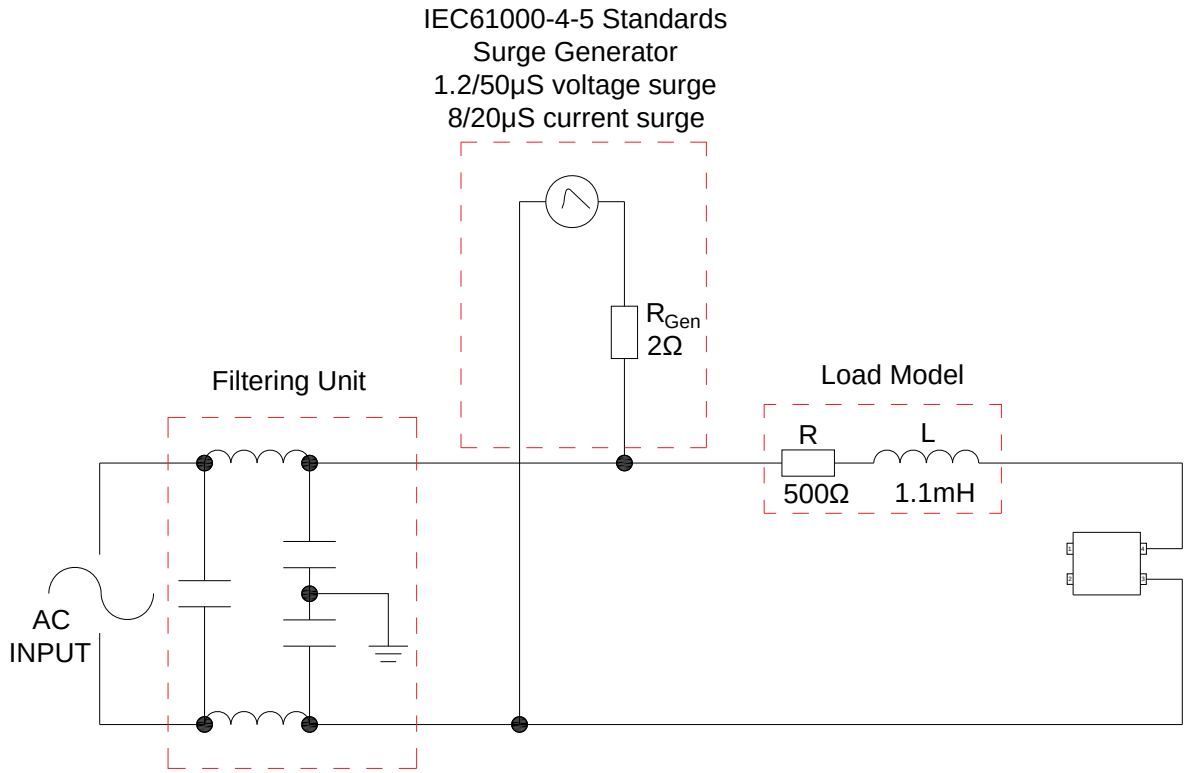
FIG.8: On-state Terminal Voltage vs. On-state Terminal Current

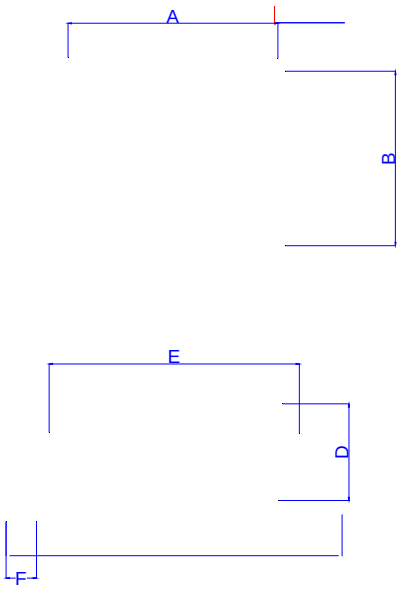
FIG.12: Test Circuits of Turn On Time

FIG.13: Waveforms of Turn On Time

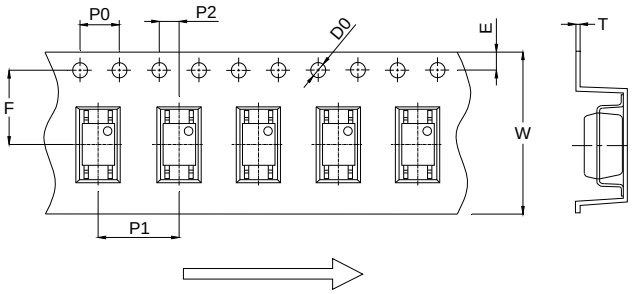
Fig.14: Test Circuits of dV/dt

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



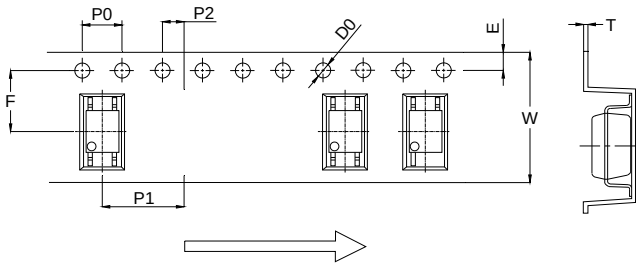

A
B
E
D
F

Option None

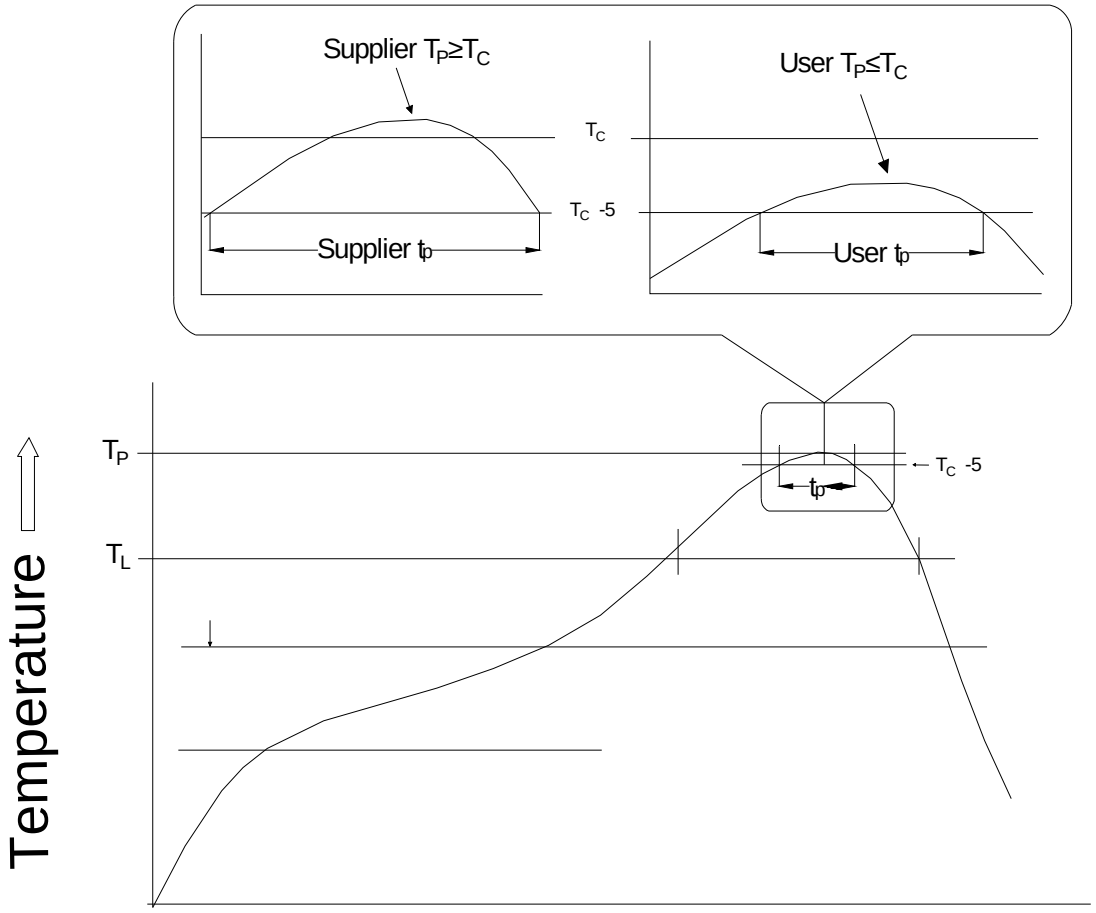


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	7.90	8.00	8.10	0.311	0.315	0.319
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
T	0.27	0.30	0.33	0.011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


Supplier $T_P \geq T_C$
User $T_P \leq T_C$
T_C
T_C -5
Supplier t_p
User t_p
Temperature
T_P
T_L
T_C -5
t_p

Note: