JORX213 Series

Rev.A.1.2

DESCRIPTION:

The JORX213 series combine an AlGaAs infrared emitting diode as the emitter which is optically coupled to a monolithic silicon zero-cross photo triac to drive a power triac in a plastic DIP7 package with different lead forming options. The products are widely used in solenoid/valve controls, lighting controls, motor controls, temperature controls, static AC power switches, solid state relays, interfacing microprocessors to 265 V_{AC} peripherals.

MAIN FEATURES

High isolation 5000 Vrms
DC input with triac output
Operating temperature range - 40°C to 85 °C
REACH & RoHS compliance
MSL class 2
HBM: H3A; MM: M4
CQC approved
VDE approved
UL approved

ABSOLUTE MAXIMUM RATINGS (Temperature=25°C)

Parameter		Symbol	Value	Unit
Input	Forward Current	I_F	60	mA
	Peak Forward Current	I_{FP}	1 [7]	A
	Reverse Voltage	V_R	6	V
Output	Repetitive peak off-state voltage	V_{DRM}	600	V
	Repetitive peak off-state voltage	V_{RRM}	600	V
	Critical rate of rise of on-state current	dI/dt	100	A s
	JOR0213			
	On-state RMS Current	$I_{T(RMS)}$		

	peak on-state current (full cycle , t_p=20ms)	JOR1213		6	
		JOR2213		9	
		JOR3213		12	
Isolation Voltage			V_{iso}	5000 [8]	Vrms
Operating Temperature			T_{opr}	-40~85	
Storage Temperature			T_{stg}	-40~125	
Soldering Temperature			T_{sol}	260 [9]	

NOTE1 100μs pulse, 100Hz frequency
NOTE2 AC for 1minute, R.H.=40~60%
NOTE3 For 10 seconds

ELECTRICAL CHARACTERISTICS (Temperature=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F	I_F=20mA	-	1.25	1.4	V
	Reverse Current	I_R	V_R=6V	-	-	1	A
Output	Peak Off-state Current, Either Direction	I_{DRM}	V_{DRM} / V_{RRM} =600V, I_F=0	-	-	10	$
		I_{RRM}		-	-	10	
	Peak On-state Voltage, Either Direction	V_{TM}	I_{TM}= I_{TM} Rated	-	-	2	V
	Critical Rate of Rise of Off-state voltage	dV/dt	V_D=400V, Gate Open I_F=0, T_j=85	1000	-	-	9 V
	Critical Rate of Rise of Commutating Voltage	(dV/dt)c	(dI/dt)c =1.5A/ms, T_j=85	10	-	-	9 V
Transfer Characteristics	LED Trigger Current	I_{FT}	Terminal Voltage=6V R_L=100	-	-	10	mA
	Holding Current	I_H	V_D=6V	-	-	25	mA
	Isolation Resistance	R_{ISO}	DC500V 40~60%R.H.	10^{12}	10^{14}	-	
	Response Time	t_{on}	V_D=6V, R_L I_F=20mA	-	20	100	V
Zero Crossing	Inhibit Voltage	V_{IH}	I_F=10mA	-	-	20	V
	Leakage in Inhibit State	I_{DRM2}	I_F=10mA, V_{DRM}=600V	-	-	500	$

ORDERING AND MARKING INFORMATION

MARKING INFORMATION

Characteristics Curves

FIG.1: Forward Current vs. Ambient Temperature

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

TEST CIRCUITS

FIG.11: Test Circuits of Turn On Time

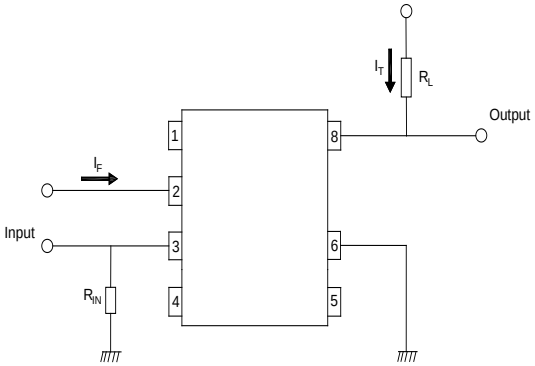
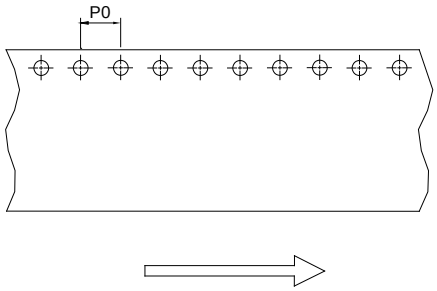
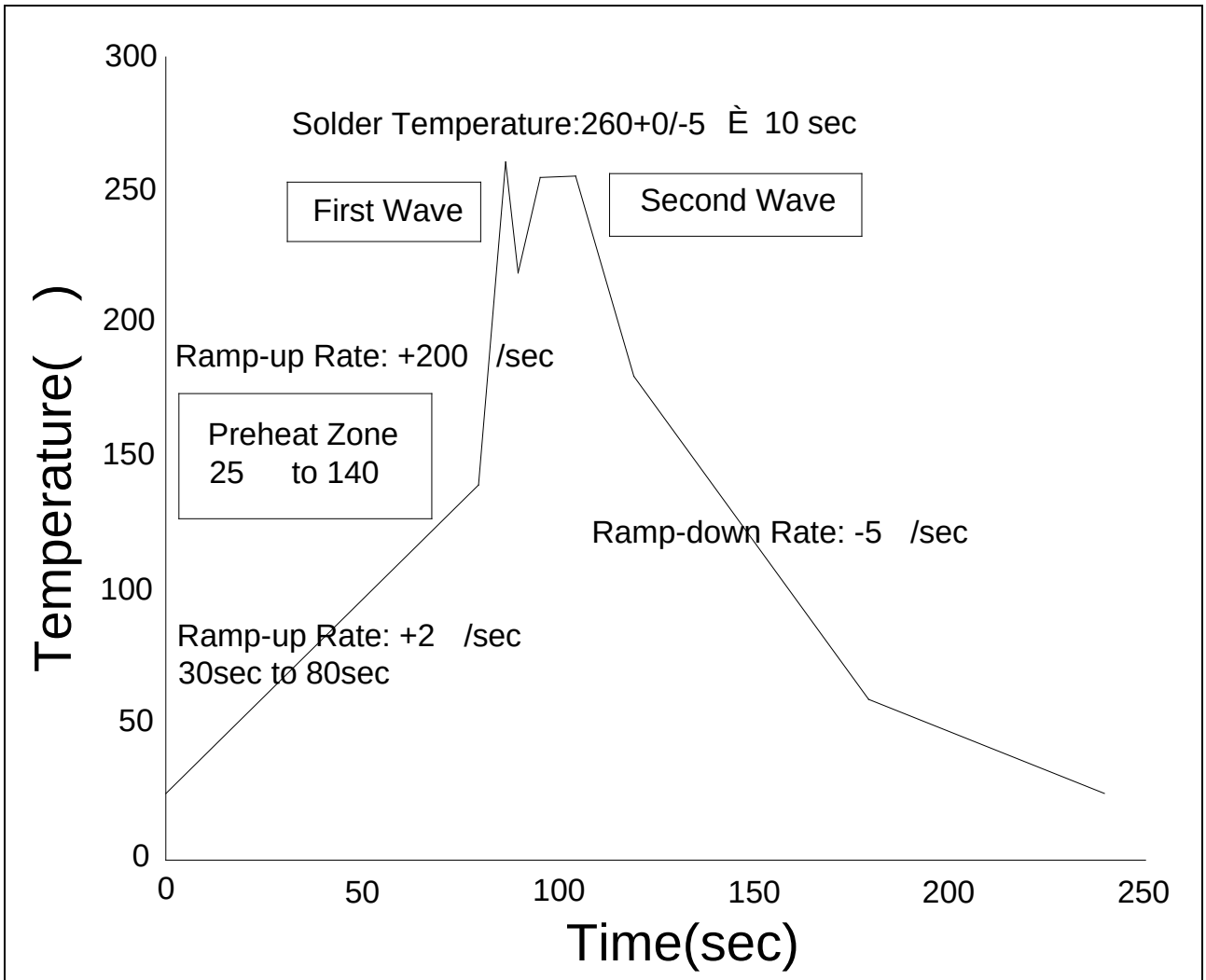


FIG.12: Waveforms of Turn On Time

CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)



WAVE SOLDERING



HAND SOLDERING BY SOLDERING IRON	
Soldering Temperature	360 ± 5
Soldering Time	3s max.

Document Revision History

Date	Revision	Changes
Feb.21, 2025	A.1.0	Last update
Nov.7, 2025	A.1.1	Add (dV/dt)c
Feb.27, 2026	A.1.2	Revise Package Dimension