JOC303X Series

Rev.A.1.1

DESCRIPTION:

The JOC303X series combine an AIGaAs infrared emitting diode as the emitter which is optically coupled to a monolithic silicon zero-cross photo triac in a plastic DIP6 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 up to 120 V_{AC} peripherals.

MAIN FEATURES

High isolation 5000 VRMS
DC input with zero-cross photo triac output
Operating temperature range -55 - Z U -
8 + ') . 8U . 9 I U S V R O G T I K
HBM: . ' ! 3 3 3
CQC approved
VDE approved
UL approved

ABSOLUTE MAXIMUM RATINGS (Temperature=25°C)

Parameter		Symbol	Value	Unit
Input	Forward Current	I_F	60	mA
	Reverse Voltage	V_R	6	V
	Junction Temperature	T_j	125	
	Input Power Dissipation	P_I	100	mW
	Power Dissipation Derating (T_a 1 25)	•P D/	-1.33	mW/
Output	Off-state Output Terminal Voltage	V_{OFF}	250	V
	Peak O Q í V W Current V S X O V H S S V	I_{TP}	2	A
	On-state RMS Current	$I_{T(RMS)}$	100	mA

	Power Dissipation Derating (T_a 125)	•P D/	-3.33	mW/
Total Power Dissipation		P_{tot}	350	mW
Isolation Voltage		V_{iso}	5000 '	Vrms
Operating Temperature		T_{opr}	-55~100	
Storage Temperature		T_{stg}	-55~125	
Soldering Temperature		T_{sol}	260 [8]	

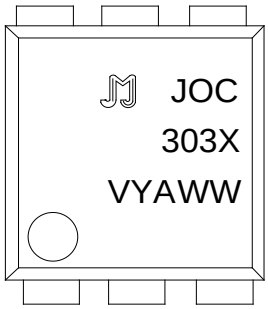
NOTE1AC for 1minute, R.H.=40~60%
NOTE2For 10 seconds

ELECTRICAL CHARACTERISTICS (Temperature=25°C)

Parameter			Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage		V_F	I_F=10mA	-	1.27	2.2	V
	Reverse Current		I_R	V_R=6V	-	-	1	A
	Input Capacitance		C_{in}	V=0, f=1kHz	-	10	-	pF
Output	Peak Off-state Current, Either Direction		I_{OFF}	V_{OFF}=250V, I_F=0	-	-	100 "	nA
	Peak On-state Voltage, Either Direction		V_{TM}	I_{TM}=100mA	-	1.7	2.5	V
	Critical Rate of Rise of Off-state voltage		dV/dt	V_{PEAK}=250V, I_F=0	1000 •	-	-	9 V
	LED Trigger Current	JOC3031	I_{FT}	Terminal Voltage=3V I_{TM}=100mA	-	-	15	mA
		JOC3032			-	-	10	
		JOC3033			-	-	5	
	Holding Current		I_H	I_{TM}				
Transfer Characteristics								

ORDERING AND MARKING INFORMATION

MARKING INFORMATION



Characteristics Curves

FIG.1: Forward Current vs. Ambient Temperature FIG.2: On-

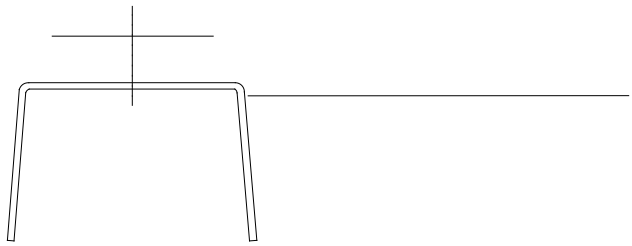
TEST CIRCUITS

FIG.12: Test Circuits of Turn On Time

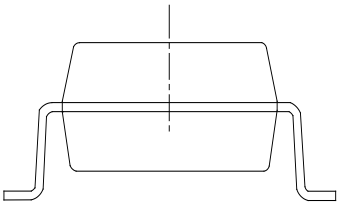
FIG.13: Waveforms of Turn On Time

Package Dimension (Unit: mm Å

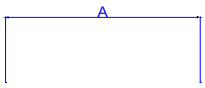
Standard DIP Type:

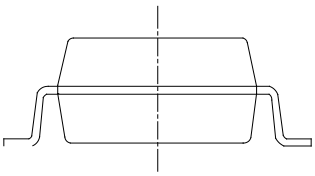


Option S Type:

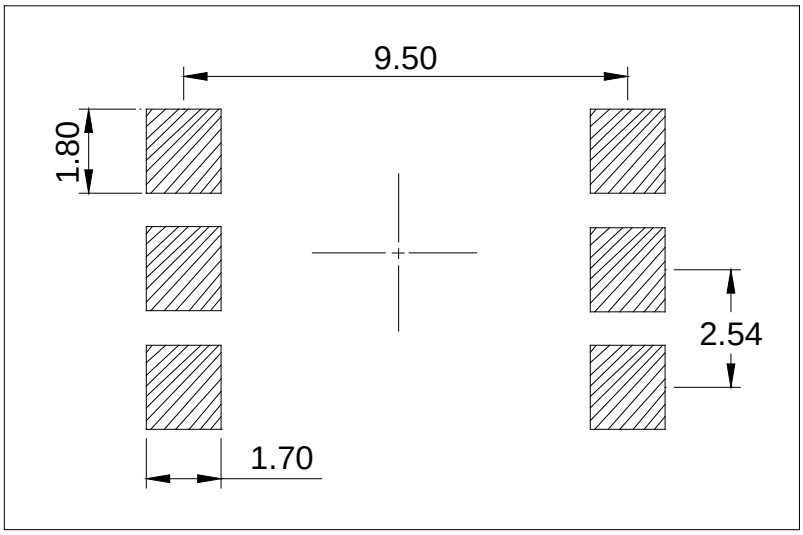


Option SLM Type: DimensionsMillimetersInchesRef.Min.Typ.Max.Min.Typ.Max.

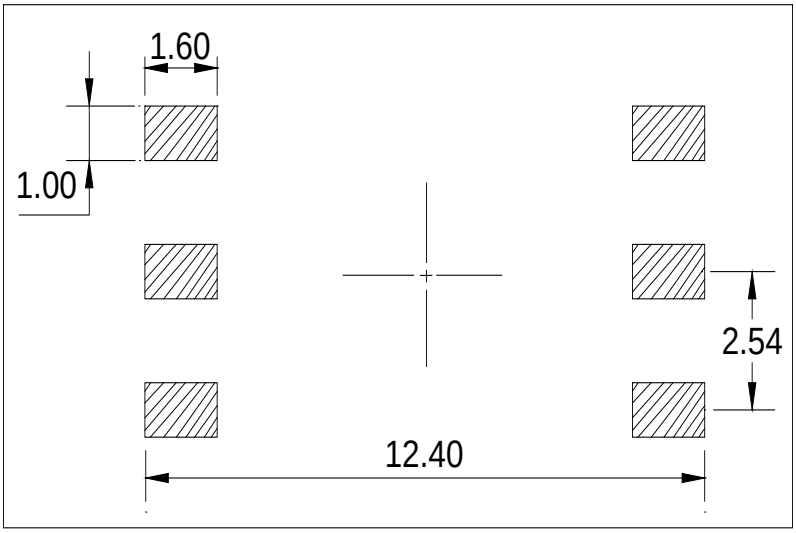




Option SL

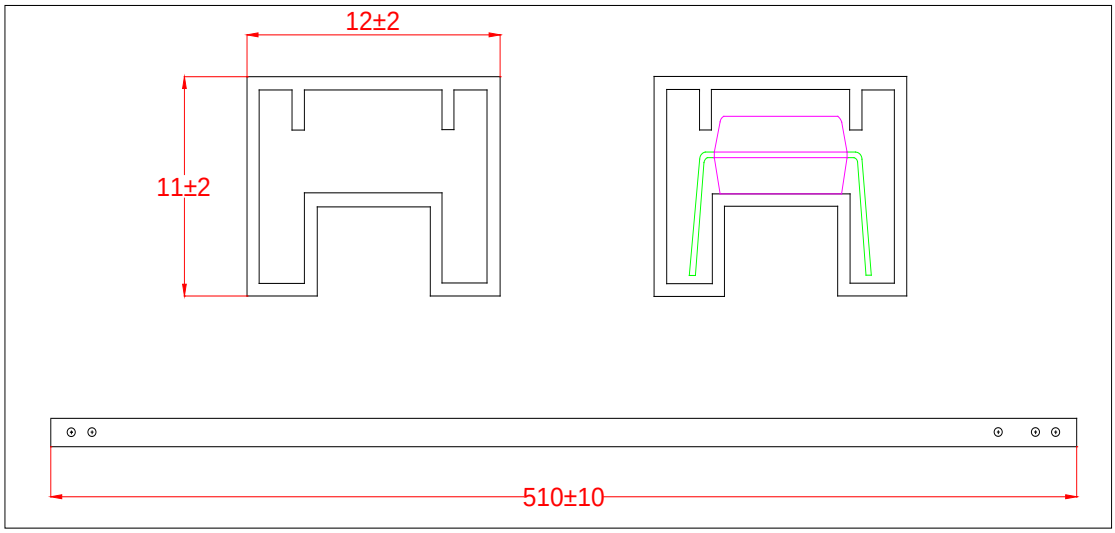


Option SLM

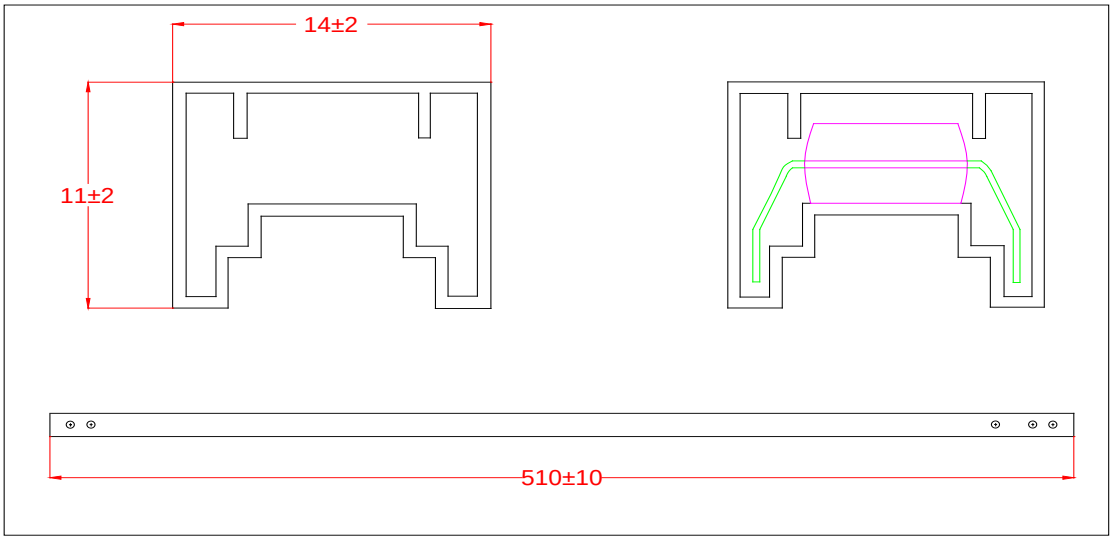


TUBE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

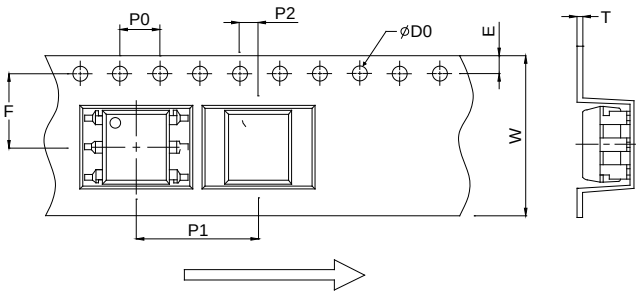
Standard DIP

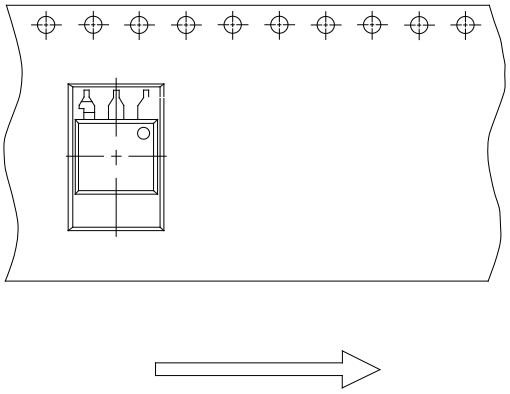


Option M

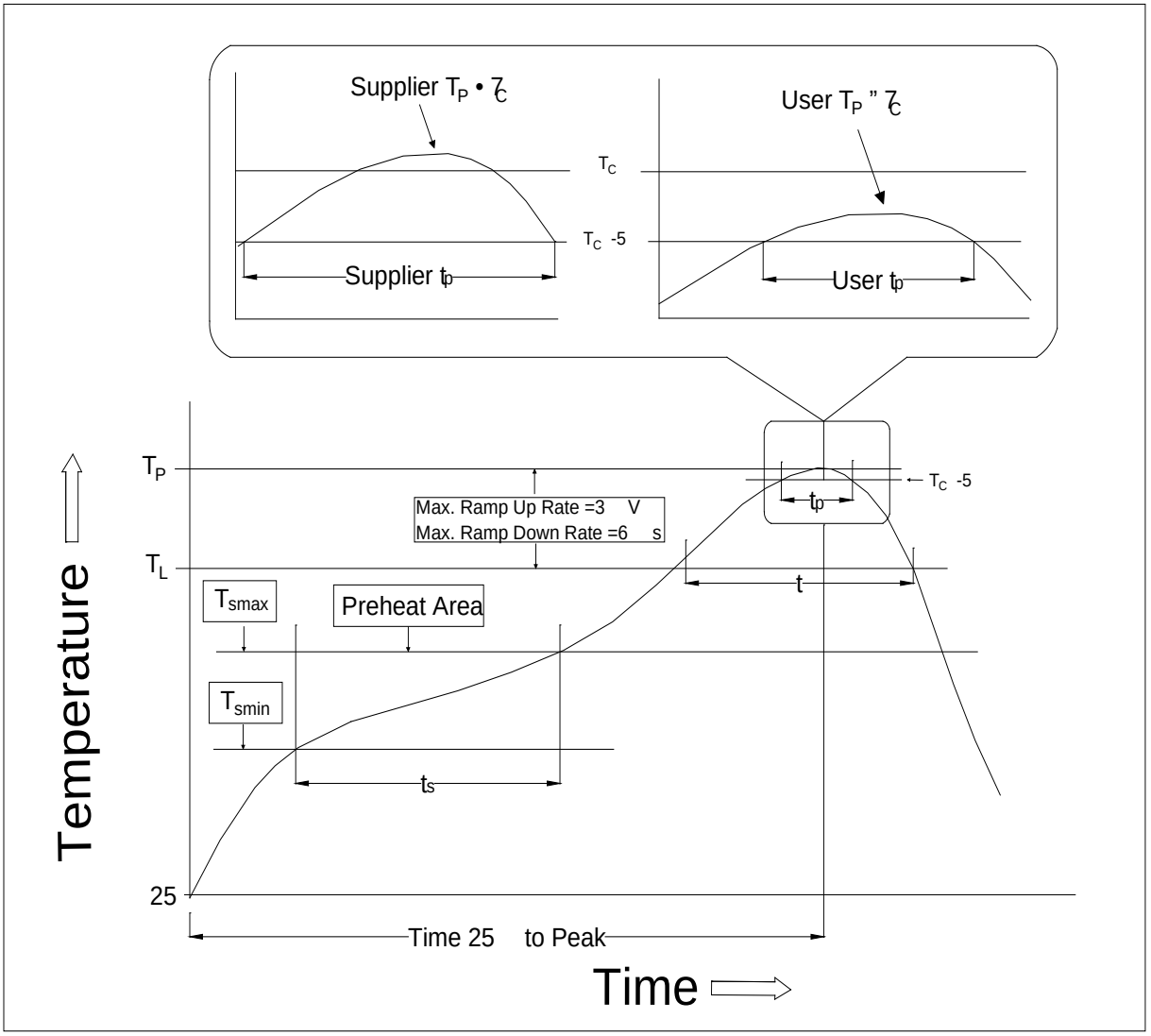


CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)



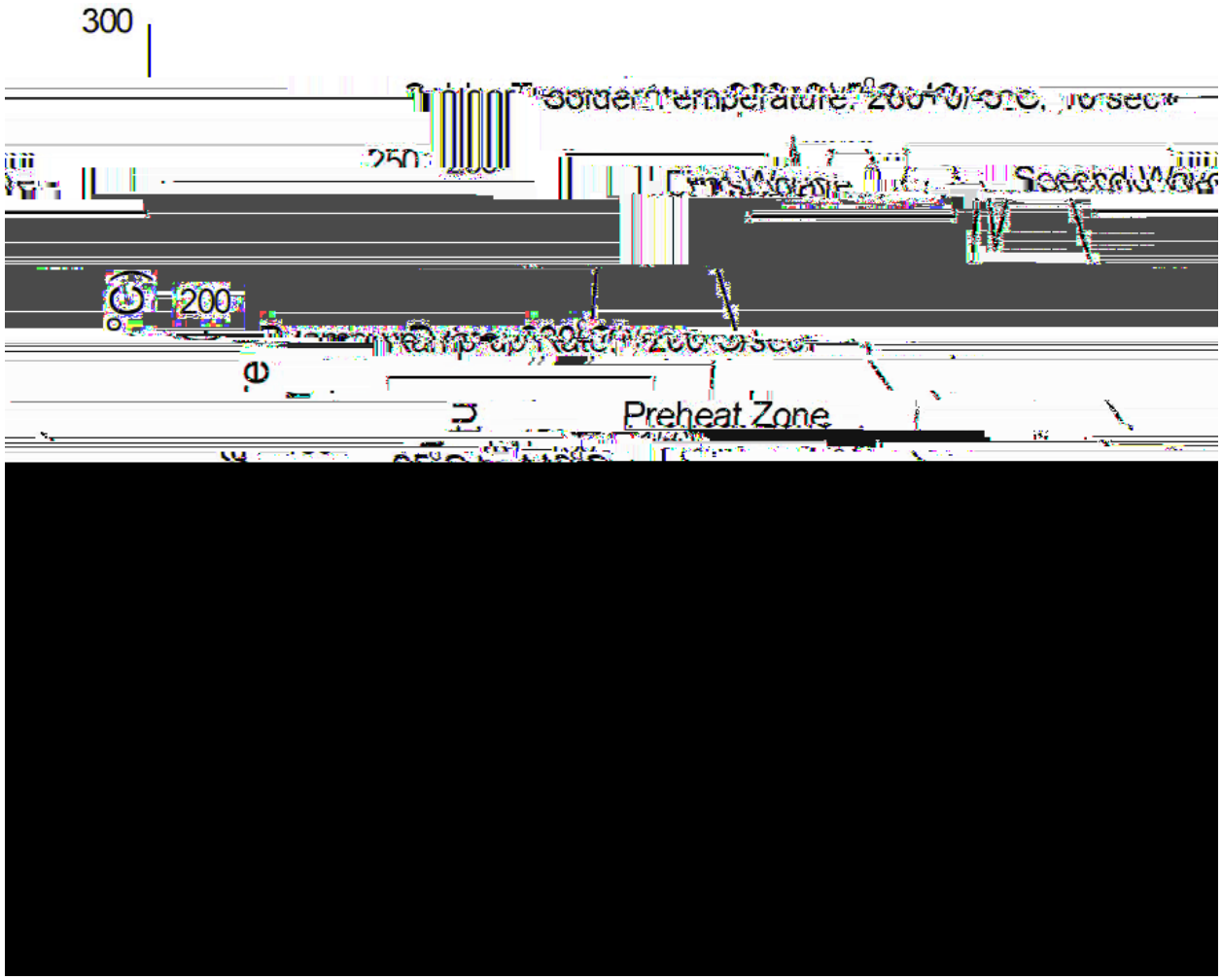


REFLOW INFORMATION



Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	100	150
Temperature Max. (Tsmax)	150	200
Time (ts) from (Tsmin to Tsmax)	60-120 seconds	60-120 seconds
Ramp-up Rate (tL to tP)	3 / second max.	3 / second max.
Liquidus Temperature (TL)	183	217
Time (tL) Maintained Above (TL)	60-150 seconds	60-150 seconds
Peak Body Package Temperature	235 +0 /-5	260 +0 /-5
Time (tP) within 5 of 260	20 seconds	30 seconds
Ramp-down Rate (TP to TL)	6 / second max.	6 / second max.
Time 25 to Peak Temperature	6 minutes max.	8 minutes max.

WAVE SOLDERING



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

Document Revision History

Date	Revision	Changes
Apr.2, 2025	A.1.0	Last update
Nov.5, 2025	A.1.1	Add S&SLM package