## JOC306X Series

Rev.A.1.1

The JOC306X 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 265 $V_{AC}$ peripherals.

High isolation 5000 VRMS
DC input with zero-cross photo triac output
Operating temperature range -55 ł wr 433 ł
UHDFK ) UrKV frpsoldqfh
HBM: K6D› P P= P7
CQC approved
VDE approved
UL approved

(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 ($T_a$ 25 ) | $P_D$/ | -1.33 | mW/ |
| Output | Off-state Output Terminal Voltage | $V_{OFF}$ | 600 | V |
| | Peak On−state Current (100µs pulse, 120 pps) | $I_{TP}$ | 2 | A |
| | On-state RMS Current | $I_{T(RMS)}$ | 100 eak | mA |

| | | | | |
|---|---|---|---|---|
| | Power Dissipation Derating ($T_a$ 25 ) | $P_D$/ | -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 | |

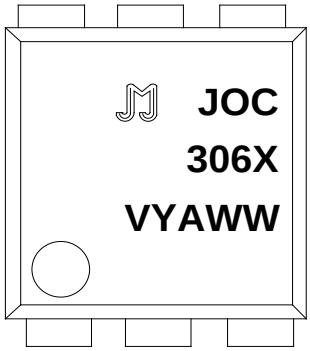
:AC for 1minute, R.H.=40~60%

:For 10 seconds

(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 | μA |
| | Input Capacitance | | $C_{in}$ | V=0, f=1kHz | - | 10 | - | pF |
| Output | Peak Off-state Current, Either Direction | | $I_{OFF}$ | $V_{OFF}$=600V, $I_F$=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 | $V_{PEAK}$=600V, $I_F$=0 | 1000 | - | - | V/μs |
| Transfer Characteristics | LED Trigger Current | JOC3061 | $I_{FT}$ | Terminal Voltage=3V $I_{TM}$=100mA | - | - | 15 | mA |
| | | JOC3062 | | | - | - | 10 | |
| | | JOC3063 | | | - | - | 5 | |
| | Holding Current | | $I_H$ | $I_{TM}$=2mA, $I_F$=Rated $I_{FT}$ | - | 250 | - | μA |
| | Isolation Resistance | | $R_{ISO}$ | DC500V 40~60%R.H. | $10^{12}$ | $10^{14}$ | - | Ω |
| | Floating Capacitance | | $C_{IO}$ | V=0, f=1MHz | - | 10 | - | 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 | | | | | | | |

Stad DFFd 0 Td (2)Tj 10.56 0 0 10.56 293.76 108.12 Tm ( )Tj EMC /P <</MCID 164 >>BD




JOC : Company Abbr.
306X : Part Number & Rank
V : VDE Option
Y : Fiscal Year
A : Manufacturing Code
WW : Work Week

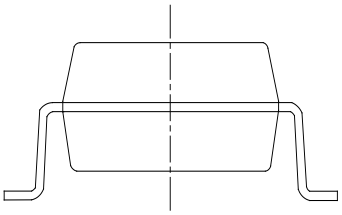
**FIG.12:** Test Circuits of Turn On Time

**FIG.13:** Waveforms of Turn On Time

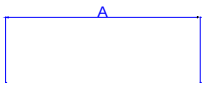
**Fig.14: Test Circuits of dV/dt**

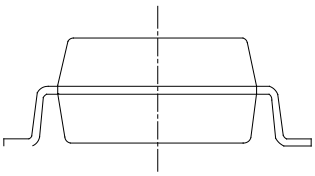
**Fig.15: Waveforms of dV/dt**

**Option S Type:**

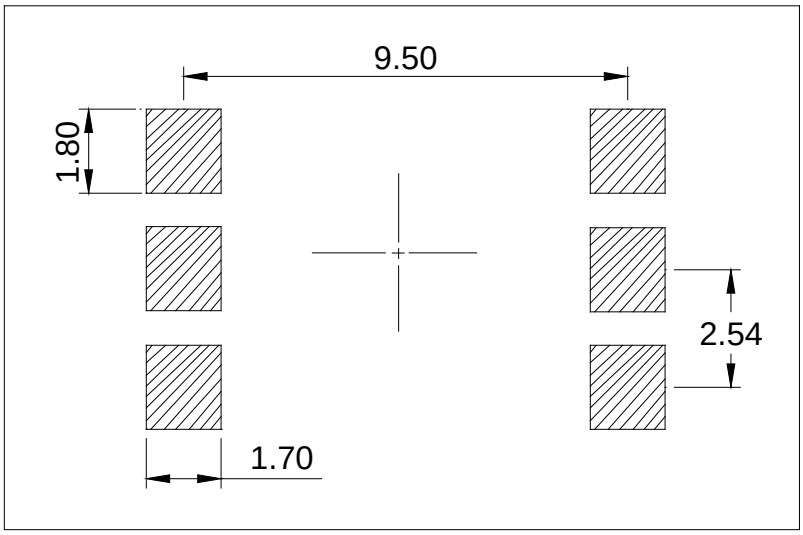


**Option SLM Type: DimensionsMillimetersInchesRef.Min.Typ.Max.Min.Typ.Max.**

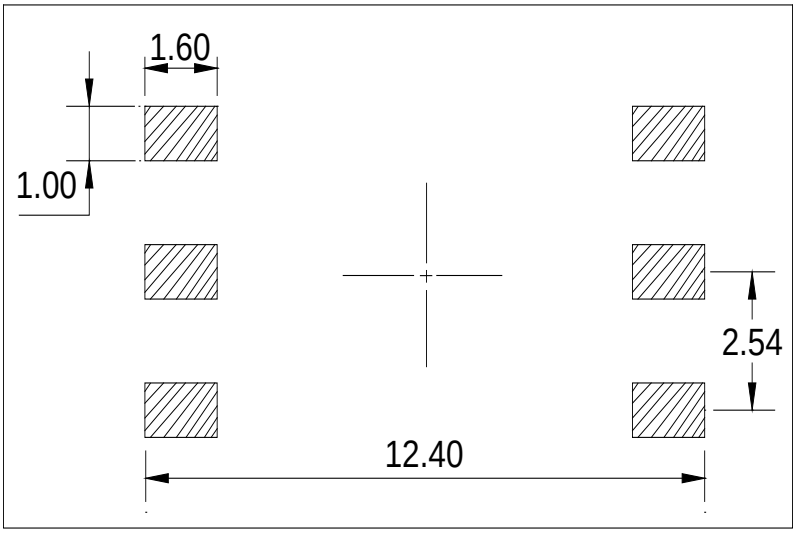


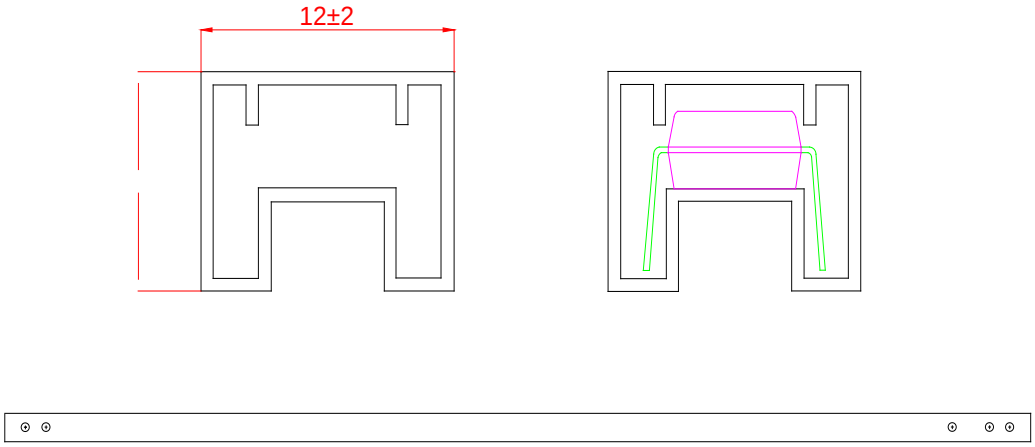
**Option SL**

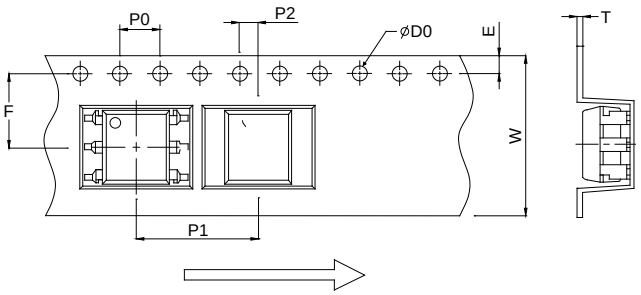


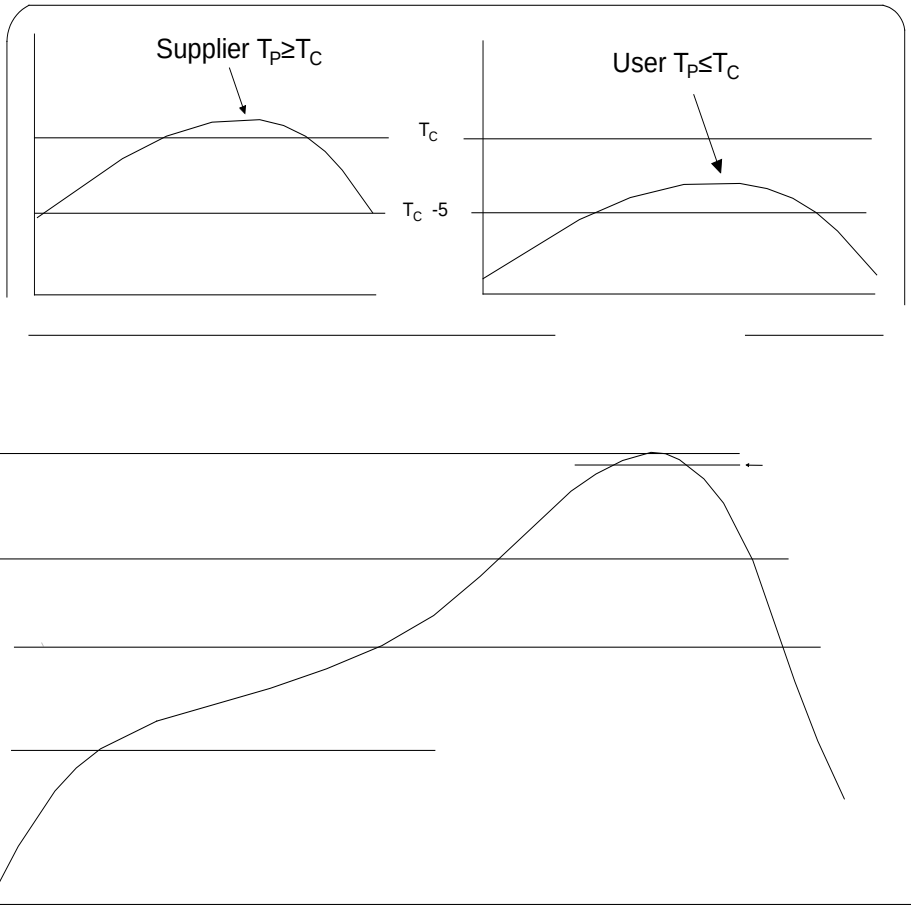

**Option SLM**



**Standard DIP M**




P0
P2
ØD0
E
T
F
W
P1


Supplier $T_P \geq T_C$
User $T_P \leq T_C$
$T_C$
$T_C$ -5

| | |
|---|---|
| | |
| | |
| Soldering Temperature | 360± 5 |

**Document Revision History**

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