## JOCT247X-S16 Series

Rev.A.1.0

## DESCRIPTION:

The products are transistor opto-couplers in a SSOP16 package, that infrared LED chip and photo-transistor chip are assembled on lead frame, in order to change the electricity-light-electricity. The products are widely used in DC-DC converter, communications equipment, programmable controller and signal transmission.

## MAIN FEATURES

High isolation 3750 VRMS
Operating temperature range -55°C to 110°C
RoHS & REACH Compliance
HBM: H3A; MM: M4; CDM:C3
CQC approved
VDE approved
UL approved

## ABSOLUTE MAXIMUM RATINGS (Temperature=25°C)

| Parameter | | Symbol | Value | Unit |
|---|---|---|---|---|
| Input | Forward Current | $I_F$ | 50 | mA |
| | Peak Forward Current | $I_{FP}$ | 1 | A |
| | Reverse Voltage | $V_R$ | 6 | V |
| | Power Dissipation | $P_D$ | 75 | mW |
| Output | Collector-emitter Voltage | $V_{CEO}$ | 80 | V |
| | Emitter-collector Voltage | $V_{ECO}$ | 7 | V |
| | Collector Current | $I_C$ | 50 | mA |
| | Power Dissipation | $P_C$ | 150 | mW |
| Total Power Dissipation | | $P_{tot}$ | 225 | mW |
| Isolation Voltage | | $V_{iso}$ | 3750 | Vrms |
| Operating Temperature | | $T_{opr}$ | -55~+110 | |
| Junction Temperature | | $T_j$ | 125 | |
| Storage Temperature | | $T_{stg}$ | -55~+125 | |
| Soldering Temperature | | $T_{sol}$ | 260 | |

## 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 |
| | Terminal Capacitance | $C_t$ | V=0, f=1MHz | - | 30 | 250 | pF |
| Output | Collector-Emitter dark current | $I_{CEO}$ | $V_{CE}$=20V, $I_F$=0 | - | - | 50 | nA |
| | Collector-Emitter breakdown voltage | $BV_{CEO}$ | $I_C$=0.1mA $I_F$=0 | 80 | - | - | V |
| | Emitter-Collector breakdown voltage | $BV_{ECO}$ | $I_E$=0.1mA $I_F$=0 | 7 | - | - | V |
| Transfer Characteristics | Current transfer ratio | CTR ' | $I_F$=5mA $V_{CE}$=5V | 80 | - | 600 | % |
| | Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_F$=10mA $I_C$= 1mA | - | 0.06 | 0.2 | V |
| | Isolation resistance | $R_{IO}$ | DC500V 40~60%R.H. | $5\times10^{10}$ | $10^{11}$ | - | Ω |
| | Floating Capacitance | $C_{IO}$ | V=0, f=1MHz | - | | | |

# JOCT247X

## Characteristics Curves

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

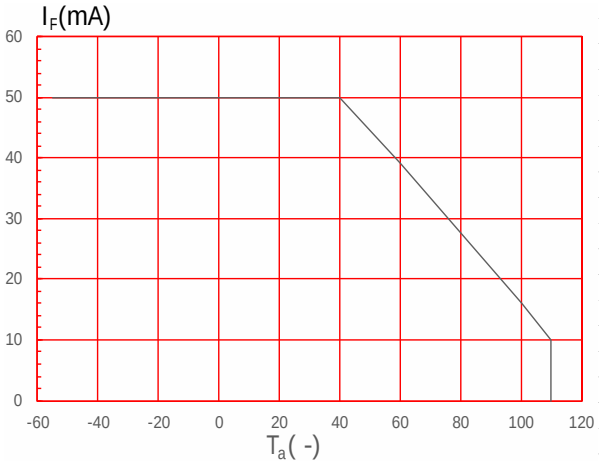



**FIG.2:** Collector Power Dissiption vs. Ambient Temperature

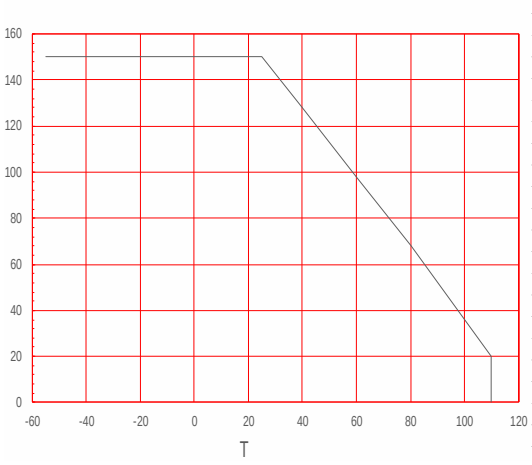


**FIG.7:** Normalized Current Transfer Ratio vs. Ambient Temperature

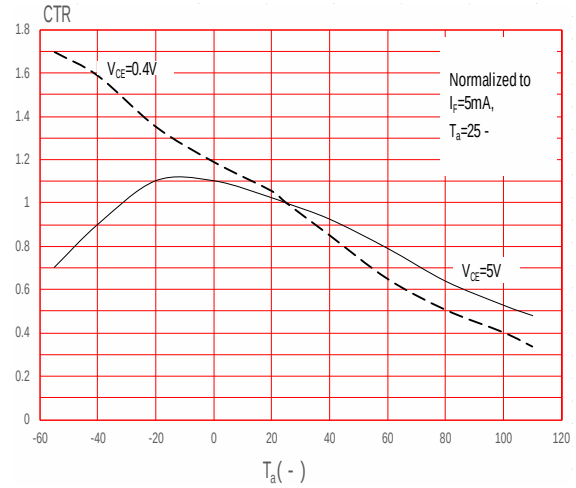



**FIG.8:** Normalized Collector-emitter Saturation Voltage vs. Ambient Temperature

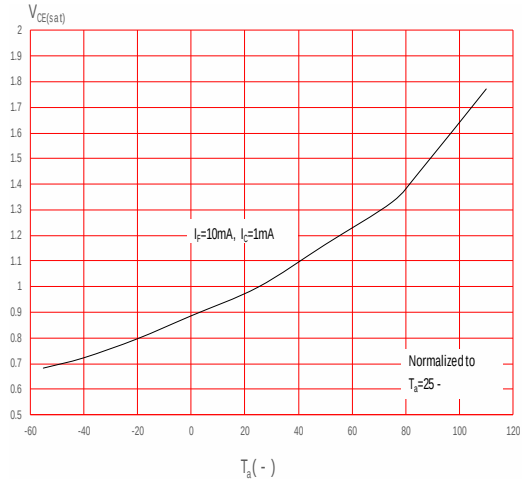



**FIG.9:** Response Time vs. Load Resistance

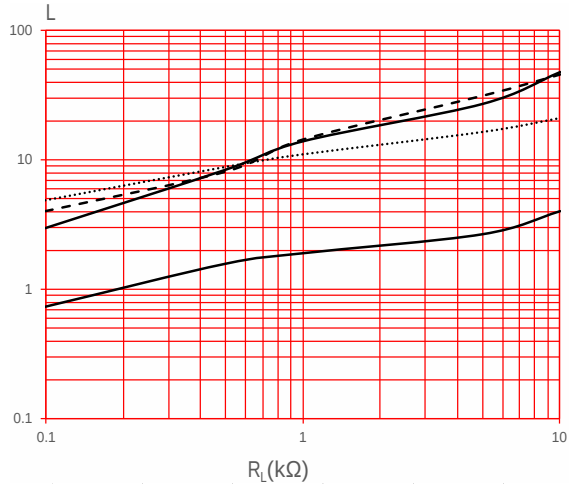



**FIG.10:** Frequency Response

## Test Circuits

**FIG.11:** Test Circuits of Response Time

**FIG.12:** Curves of Response Time

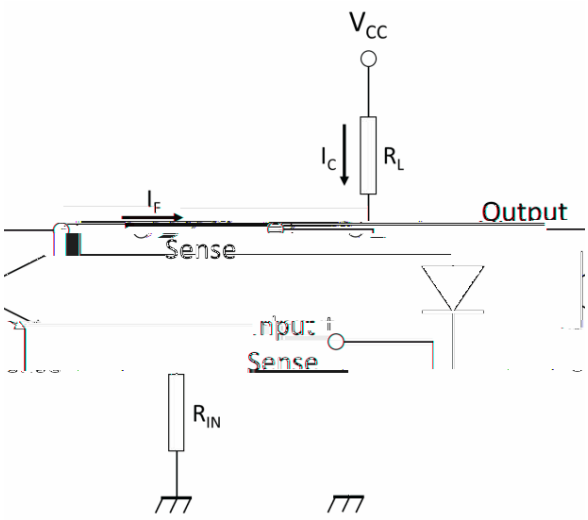
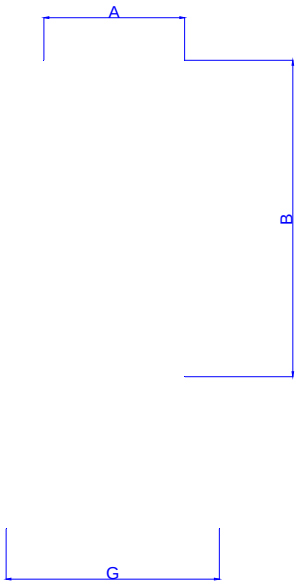



**FIG.13:** Test Circuits of Frequency Response

## Package Dimension (Unit: mm)

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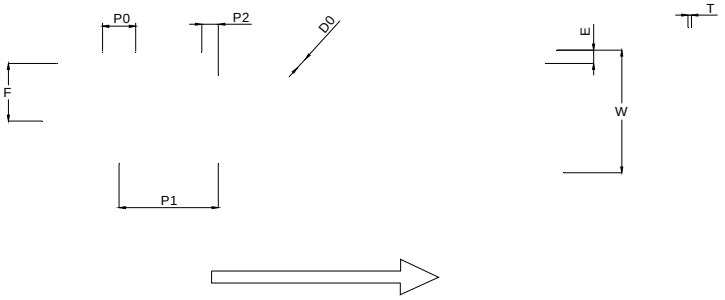

| Ref. | Dimensions | | | | | |
|---|---|---|---|---|---|---|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.40 | | 4.80 | | | 0.189 |
| B | 10.10 | | 10.50 | | | 0.413 |
| C | | | | | | |
| D | 1.95 | | 2.25 | | | 0.089 |
| E | 5.00 | | 5.60 | | | 0.220 |
| F | 0.34 | | | 0.013 | | |
| G | 6.70 | | 7.30 | | | 0.287 |
| H | 0.10 | | 0.30 | | | 0.012 |
| I | 2.05 | | | 0.081 | | |
| J | 0.30 | | | 0.012 | | |
| K | 1.02 | | | | | 0.060 |

## CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

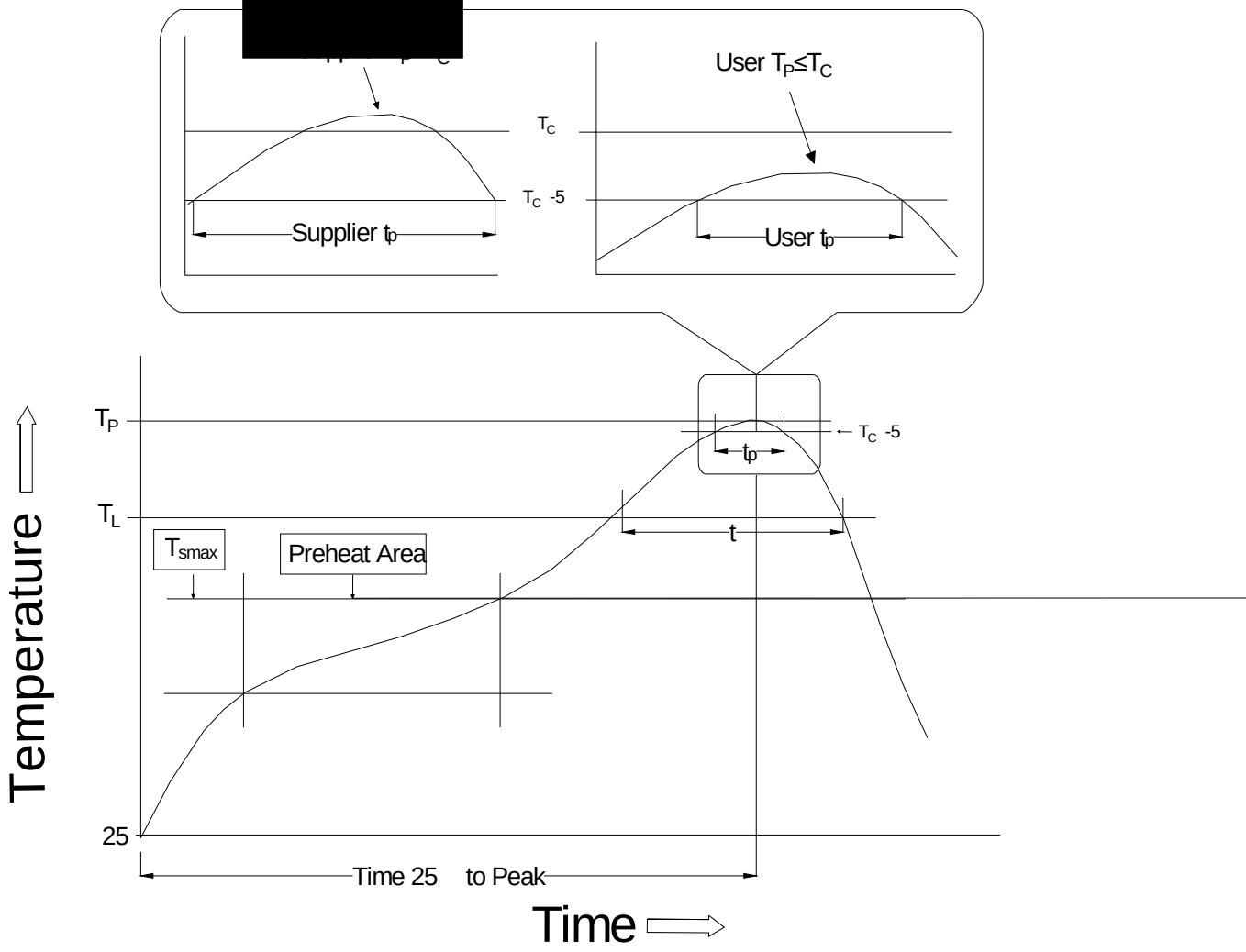
## Option S

Dimensions

Millimeters Inches



## REFLOW INFORMATIO



Note:

1. Reflow soldering is recommended at the temperatures and times shown, no more than three times.

2. Avoid direct contact between the epoxy body and any tools or surfaces exceeding its maximum storage temperature.

3. Application of pressure on the epoxy body is prohibited at elevated temperatures. In specific scenarios, any applied force must not exceed 2.5N.

4. Ensure the component has cooled to ambient temperature before proceeding with any subsequent manufacturing steps.

5. The component has a shelf life of one year when stored undereC N= T e: £ я l c ɹ f M ỹ i e