

LED Driver

USCI Micro Series



USCI Micro

Highlights & Features

- Constant current design
- Universal AC input voltage from 120-277Vac
- Wide operating temperature range -20°C to +55°C
- Class 2 output
- Dry / Damp location

Safety Standards



Class 2

Dimensions (L x W x H):

| | |
|---------------|-------------------------------------------|
| USCI-020070FA | 95x 40 x 25.4 mm (3.74 x 1.58x 1 inch) |
| USCI-030070FA | |
| USCI-020105FA | |

General Description

Delta LED drivers come in different series to suit different application. The products are designed and rigorously tested to work with various indoor LED lighting conditions.

Model Information

USCI Micro LED Driver

| Model Number | Input Voltage Range | Rated Output Voltage | Output Current | Output Power |
|---------------|---------------------|----------------------|----------------|--------------|
| USCI-020070FA | 120-277Vac Typical | 14-33Vdc | 700mA | 20W |
| USCI-030070FA | | 29-48Vdc | 700mA | 30W |
| USCI-020105FA | 108-305Vac Range | 8-23Vdc | 1050mA | 20W |

Model Numbering

| US | C | I | - | □□□ | □□□ | F | A |
|--------------------------|---------------------|--------|---|--------------------------------------|----------------------------------------------|-----------------------|-----------------------------------|
| Safety Approval – UL, | Constant current | Indoor | | Output Power 020: 20W 030: 30W | Output Current 070: 700mA 105 – 1050mA | Fix output current | Variable A – Delta Standard |

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Specifications

| Model Number | USCI-020070FA | USCI-030070FA | USCI-020105FA |
|--------------|---------------|---------------|---------------|
|--------------|---------------|---------------|---------------|

Input Ratings / Characteristics

| | | | | |
|---------------------------|-----------------------------------|--------------|-------|-------|
| Normal Input Voltage | 120-277Vac | | | |
| Input Voltage Range | 108-305Vac | | | |
| Normal Input Frequency | 50-60Hz | | | |
| Input Frequency Range | 47-63Hz | | | |
| Max. Input Current | 120Vac | 0.23A | 0.34A | 0.23A |
| Efficiency ¹⁾ | 120-277Vac | 80% | 83.0% | 80% |
| Inrush Current | 277Vac | Meet NEMA410 | | |
| Power Factor | Full Load: > 0.9 @ 120-277Vac, | | | |
| Total Harmonic Distortion | Full Load: THD < 20% @ 120-277Vac | | | |
| Leakage Current | < 0.5mArms @ 277Vac | | | |

1) 100% Load (typical) and tested after 30 minutes warm up.

Output Ratings / Characteristics

| | | | |
|-----------------------------|--------------------------------------------------------------------|----------|---------|
| Output Voltage Range | 14-33Vdc | 29-48Vdc | 8-23Vdc |
| Max. No Load Output Voltage | 35Vrms | 50Vrms | 25Vrms |
| Output Power Range | 20W | 30W | 20W |
| Rated Output Current | 700mA | 700mA | 1050mA |
| Current Accuracy | ± 10% (@ Typical output current range) | | |
| Line Regulation | ± 1% (@ 120-277Vac input) | | |
| Load Regulation | ± 3% (@ Min-Max output voltage) | | |
| Output Current Ripple | 30% (ripple = peak-average/average) at full load & @120V/277V 60Hz | | |
| Start-up Time | 1000ms max. @ 120-277Vac (full load) | | |

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Mechanical

| | | | |
|------------------------|--------------------------------------------------|----------------|--|
| Casing | Plastic, Color : White | | |
| Dimensions (L x W x H) | [mm] | 95.0*40.0*25.4 | |
| | [inch] | 3.74*1.58*1.00 | |
| Unit Weight | [kg] | 0.15 | |
| | [lb] | 0.33 | |
| Cooling System | Convection | | |
| Input Wire | Line: Black, Neutral: White, Wire Length 300mm | | |
| Output Wire | Positive: Red, Negative: Blue, Wire Length 300mm | | |
| Noise (90cm distance) | Sound Pressure Level (SPL) < 24dBA | | |

Environment

| | | | | |
|--------------------------|------------|-------------------------------|-------|--|
| Ambient Temperature | Operating | -20°C to +55°C | | |
| | Storage | -40°C to +85°C | | |
| Maximum Case Temperature | +85°C | +95°C | +85°C | |
| Relative Humidity | Operating | 10 to 85% RH (Non-Condensing) | | |
| | Storage | 5 to 95% RH (Non-Condensing) | | |
| Environmental Locations | Dry / Damp | | | |

Protections

| | | | |
|------------------------|-----------------------------------------|--------|--------|
| Over Voltage | 35Vrms | 50Vrms | 25Vrms |
| | Auto-Recovery when the fault is removed | | |
| Overload / Overcurrent | Auto-Recovery when the fault is removed | | |
| Short Circuit | Auto-Recovery when the fault is removed | | |
| Over Temperature | Auto-Recovery when the fault is removed | | |

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Reliability Data

| | | | |
|---------------|--------------------------------------------------------------------------------------|-------|-------|
| Lifetime | 50,000 hours at case temp. tc & full load Refer to "Lifetime VS Case Temperature" | | |
| Lifetime @ tc | +70°C | +80°C | +70°C |

Safety Standards / Directives

| | |
|--------------------|------------------------------------------|
| Electrical Safety | UL 8750, UL 60950-1 Class 2 Output |
| Galvanic Isolation | Mains (Input) to Output : 3.75KVac |

EMC Compliance

| | | |
|-----------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Emissions (CE & RE) | 47 CFR FCC Part 15, Subpart B, Class B | |
| Electrostatic Discharge | IEC 61000-4-2 | Air Discharge: 8kV Contact Discharge: 4kV Criteria A ¹⁾ or Criteria B ²⁾ |
| Radiated Field | IEC 61000-4-3 | 80MHz-1GHz, 3V/m with 1kHz Sine Wave / 80% Modulation Criteria A ¹⁾ |
| Electrical Fast Transient / Burst | IEC 61000-4-4 | 1KV, Criteria A ¹⁾ or Criteria B ²⁾ |
| Surge | | 7 Strikes 2.5KV Ring wave |
| Conducted | IEC 61000-4-6 | 150kHz-80MHz, 3Vrms :Criteria A ¹⁾ |
| Power Frequency Magnetic Fields | IEC 61000-4-8 | 3A/Meter : Criteria A ¹⁾ |
| Voltage Dips | IEC 61000-4-11 | 100% dip; 0.5 cycle , Criteria A ¹⁾ or Criteria B ²⁾ 30% dip; 10 cycle, Criteria A ¹⁾ or Criteria B ²⁾ |
| Harmonic Current Emission | IEC 61000-3-2 | Class C (230Vac @ 100% load) |
| Voltage Fluctuation & Flicker | IEC 61000-3-3 | |

1) Criteria A: Normal performance within the specification limits

2) Criteria B: Temporary degradation or loss of function, which is self-recoverable

3) Asymmetrical: Common mode (Line to earth)

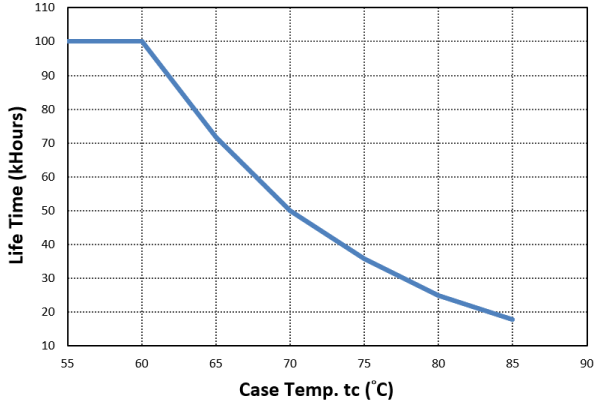
4) Symmetrical: Differential mode (Line to line)

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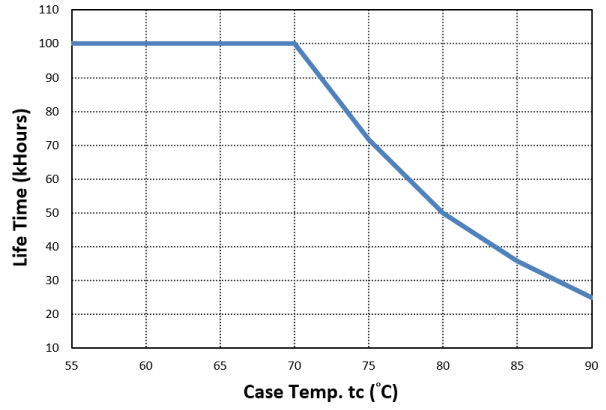
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Lifetime VS Case Temperature

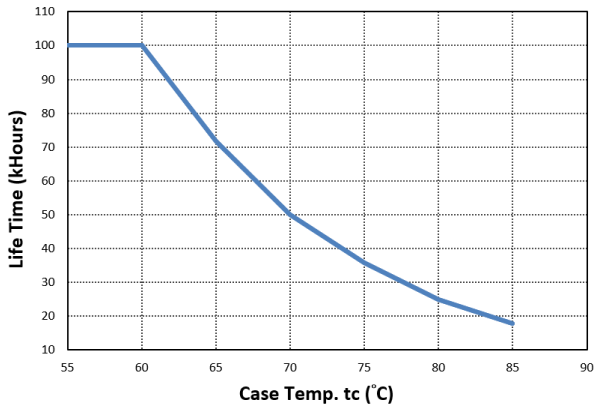
USCI-020070FA



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Dimensions

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