

Click to
ORDER
samples

AMEL45-JZ



Encapsulated

The new AMEL45-JZ is an AC/DC converter that offers much greater cost effectiveness due to material normalization and production automation also leading to improved reliability and performance. Offering a commercial input voltage range of 85-264VAC and an output voltage range from 5-48V, this series will offer many benefits to your new system design.

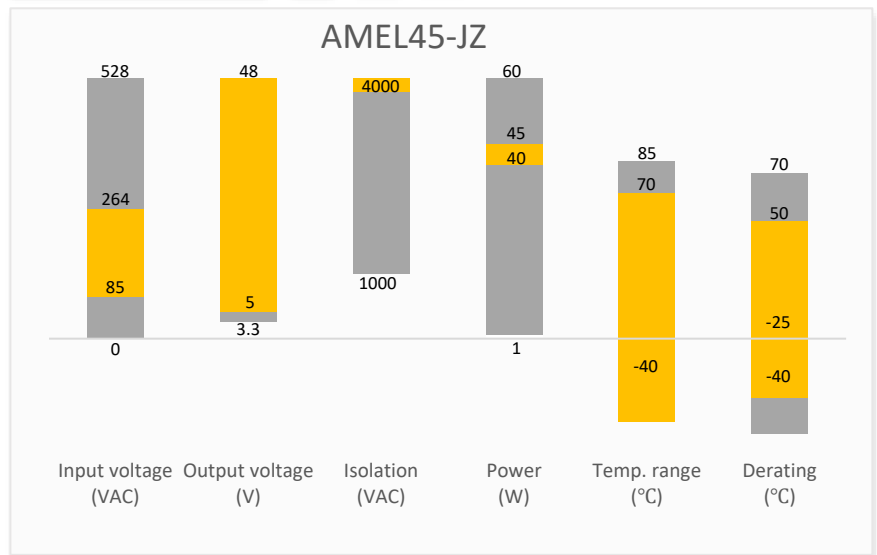
This new series offers great operating temperatures, from -40°C to 70°C also features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a high MTBF of 300,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series.

The AMEL45-JZ is perfect for street lighting controls, grid power, LED, instrumentation, industrial controls, communication and civil applications.

Features

- Universal Input: 85 - 264VAC/100 - 370VDC
- Operating Temp: -40 °C to +70 °C
- High isolation voltage: 4000VAC
- Low ripple & noise, 120mV(p-p), Max.
- Output short circuit, over-current, over-voltage protection
- Regulated Output

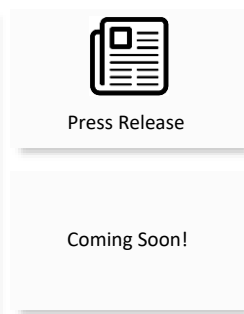
Summary



Training



Product Training Video
(click to open)



Application Notes

Applications



Power Grid



Industrial



Telecom



Instrumentation

Models & Specifications

| Single Output | | | | | | | |
|---------------|------------------------|---------------------|------------------------|--------------------|------------------------|------------------------------|-------------------------|
| Model | Input Voltage (VAC/Hz) | Input Voltage (VDC) | Max Output wattage (W) | Output Voltage (V) | Output Current max (A) | Maximum capacitive load (μF) | Efficiency @ 230VAC (%) |
| AMEL45-5SJZ | 85-264/47-63 | 100-370 | 40 | 5 | 8 | 30000 | 81 |
| AMEL45-12SJZ | 85-264/47-63 | 100-370 | 45 | 12 | 3.8 | 6400 | 84 |
| AMEL45-15SJZ | 85-264/47-63 | 100-370 | 45 | 15 | 3 | 5600 | 85 |
| AMEL45-24SJZ | 85-264/47-63 | 100-370 | 45 | 24 | 1.9 | 2000 | 86 |
| AMEL45-48SJZ | 85-264/47-63 | 100-370 | 45 | 48 | 0.94 | 600 | 87 |

Note: Use suffix "ST" for chassis and suffix "STD" for DIN-Rail mounting (ex. AMEL45-5SJZ-ST is chassis mounting and AMEL45-5SJZ-STD is DIN-Rail mounting version).

| Input Specifications | | | | |
|----------------------|---------------------|---------|---------|-------|
| Parameters | Conditions | Typical | Maximum | Units |
| Current | 115VAC | | 1.5 | A |
| | 230VAC | | 0.75 | A |
| Inrush current | 115VAC | 50 | | A |
| | 230VAC | 70 | | A |
| External fuse | slow blow type,250V | 3.15 | | A |

| Output Specifications | | | | |
|-----------------------|-----------------|---------|---------|--------|
| Parameters | Conditions | Typical | Maximum | Units |
| Voltage accuracy | Full load | ±2 | | % |
| Line regulation | Full load | ±0.5 | | % |
| Load regulation | 0-100% load | ±1 | | % |
| Ripple & Noise* | 20MHz bandwidth | 60 | 120 | mV p-p |
| Hold up time | 115VAC | 8 | | ms |
| | 230VAC | 50 | | ms |

* Ripple and Noise are measured at 20MHz bandwidth by using the referenced Application circuit.

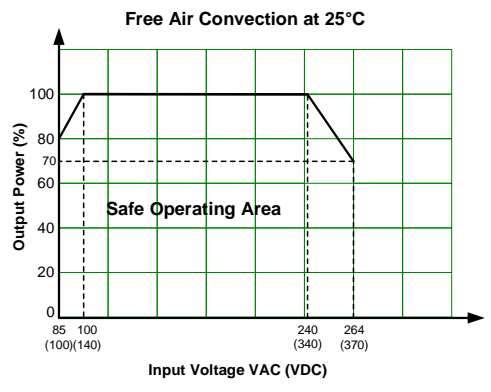
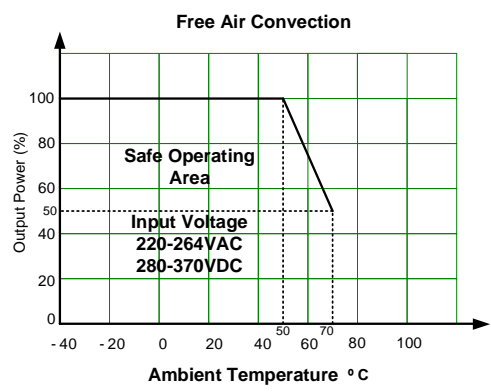
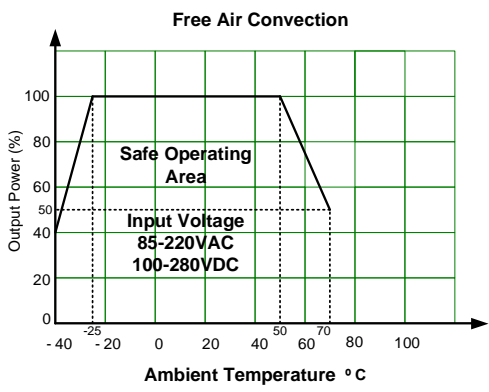
| Isolation Specifications | | | | |
|--------------------------|-------------------------------|---------|-------|-------|
| Parameters | Conditions | Typical | Rated | Units |
| Tested I/O voltage | 60 sec, leakage current < 5mA | | 4000 | VAC |

| General Specifications | | | | |
|-------------------------|-----------------------------------|---------|---------|-----------|
| Parameters | Conditions | Typical | Maximum | Units |
| Safety class | Class II | | | |
| Over Current protection | Auto recovery | ≥ 110 | | % of Iout |
| Over voltage protection | 5V Vout, Voltage clamp or hiccup | | 9 | VDC |
| | 12V Vout, Voltage clamp or hiccup | | 16 | VDC |

| | | | | |
|---|---|--|-----|---------|
| | 15V Vout, Voltage clamp or hiccup | | 24 | VDC |
| | 24V Vout, Voltage clamp or hiccup | | 35 | |
| | 48V Vout, Voltage clamp or hiccup | | 56 | VDC |
| Short circuit protection | Hiccup, Continuous, Auto recovery | | | |
| Operating temperature | See derating graph | -40 to +70 | | °C |
| Storage temperature | | -40 to +85 | | °C |
| Lead temperature | Wave soldering | 260 ± 5 °C; Maximum duration 5 - 10s | | |
| | Hand soldering | 360 ± 10 °C; Maximum duration 3 - 5s | | |
| No-load power consumption | | | 0.5 | W |
| Power derating | -40 °C ~ -25 °C, 85VAC ~ 220VAC | 4 | | % / °C |
| | -40 °C ~ -25 °C, 220VAC ~ 264VAC | 0 | | % / °C |
| | 50 °C ~ 70 °C | 2.5 | | % / °C |
| | 85VAC ~ 100VAC | 1.33 | | % / VAC |
| | 240VAC ~ 264VAC | 1.25 | | % / VAC |
| Temperature coefficient | | ±0.02 | | % / °C |
| Cooling | Free air convection | | | |
| Humidity | Non-condensing | | 95 | % RH |
| Case material | Heat resistant black Plastic (flammability to UL 94V-0) | | | |
| Weight | PCB mountable models | | 205 | g |
| Dimensions (L x W x H) | PCB mountable models | 3.43 x 2.05 x 1.16 inches (87.0 x 52.0 x 29.5mm) | | |
| MTBF | > 300 000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load | | | |
| NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. | | | | |

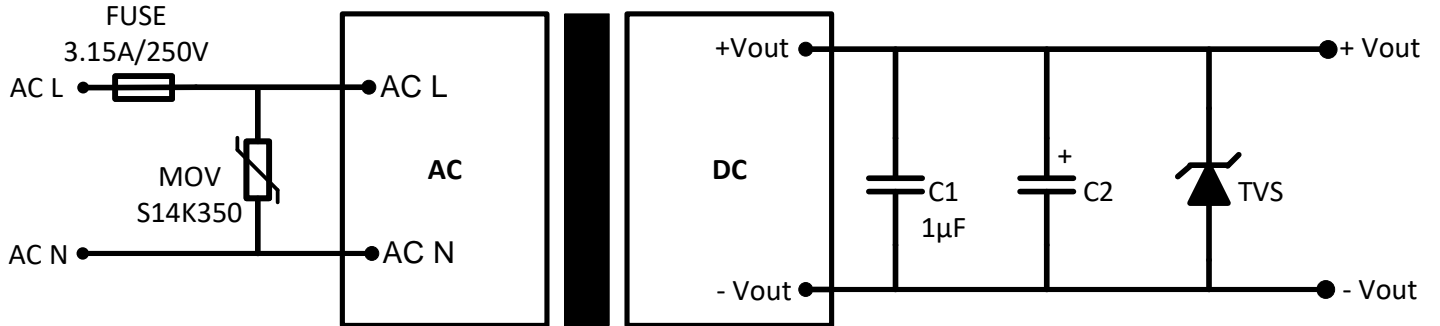
| Safety Specifications | | |
|-----------------------|--|---|
| Parameters | | |
| Agency approval | UL 62368-1 | |
| Standards | Design to meet IEC/EN 62368 | |
| | EMC - Conducted and radiated emission | CISPR32 / EN55032, class B |
| | Electrostatic Discharge Immunity | IEC 61000-4-2 Contact ±6KV / Air ±8KV, Criteria B |
| | RF, Electromagnetic Field Immunity | IEC 61000-4-3 10V/m, Criteria A |
| | Electrical Fast Transient/Burst Immunity | IEC 61000-4-4 ±4KV, Criteria B |
| | Surge Immunity | IEC 61000-4-5 L-L ±1KV, Criteria B IEC 61000-4-5 L-L ±2KV / L-G ±4KV, with EMC recommended circuit, Criteria B |
| | RF, Conducted Disturbance Immunity | IEC 61000-4-6 10Vr.m.s, Criteria A |
| | Voltage dips, Short Interruptions Immunity | IEC 61000-4-11 0%, 70%, Criteria B |

Derating



Typical Application Circuit

Single Output

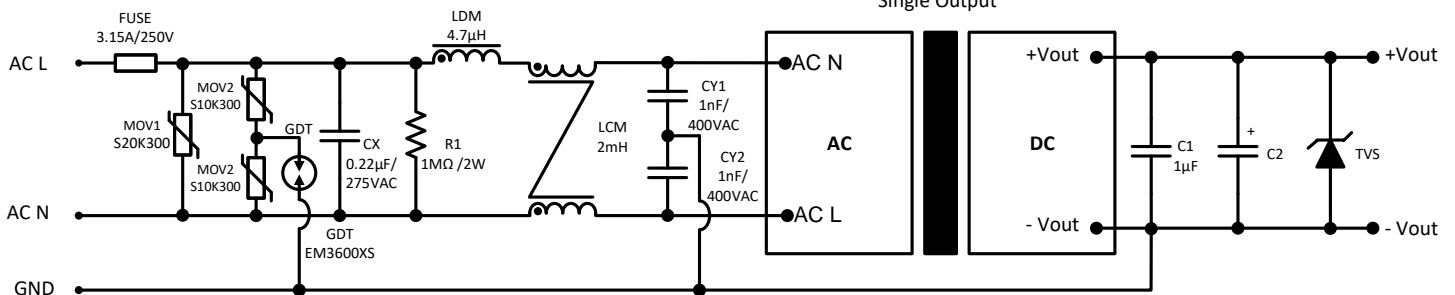


| Model | C2 | TVS |
|--------------|--------|----------|
| 5 Vout | 680 µF | SMBJ7.0A |
| 12 / 15 Vout | 220 µF | SMBJ20A |
| 24 Vout | 120 µF | SMBJ30A |
| 48 Vout | 100 µF | SMBJ64A |

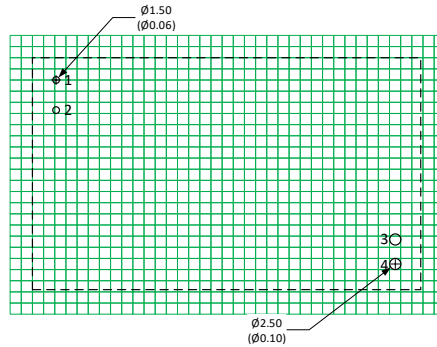
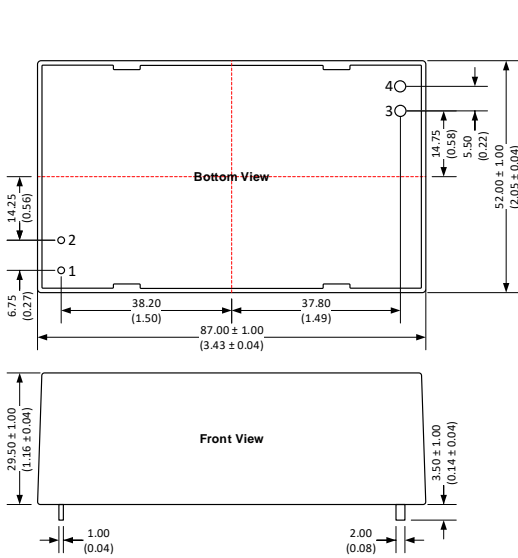
Note: Choose capacitors with at least 20% voltage margin.

EMC Recommended Circuit

Single Output



Dimensions



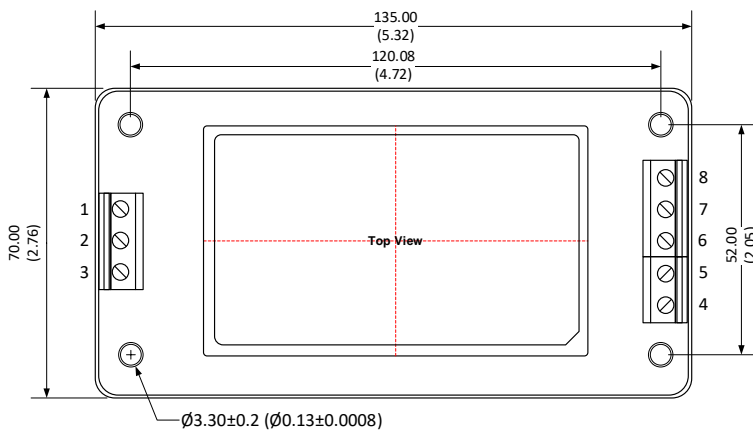
Note : Grid 2.54*2.54 mm

Notes:
All dimensions are typical in millimeters (inches).
Pin diameter tolerances : ± 0.10 (± 0.004)
General tolerance : ± 0.50 (± 0.02)

Pin Output Specifications

| Pin | Single |
|-----|--------------|
| 1 | AC Input (L) |
| 2 | AC Input (N) |
| 3 | -V Output |
| 4 | +V Output |

Dimensions with ST Optional

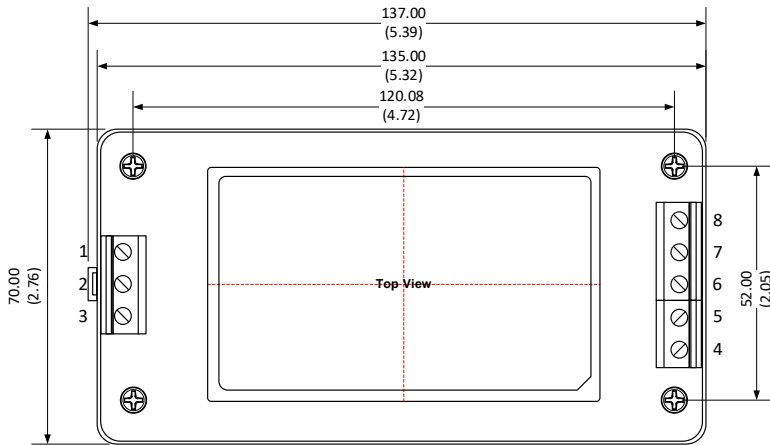


Pin Output Specifications

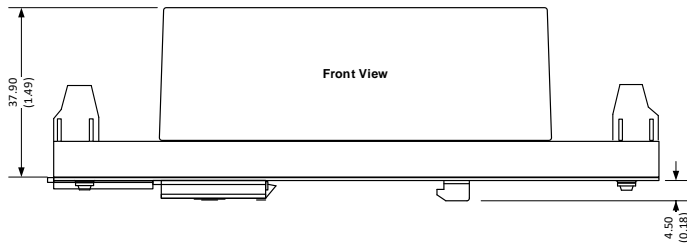
| Pin | Single |
|-----|--------------|
| 1 | AC Input (L) |
| 2 | NC |
| 3 | AC Input (N) |
| 4 | +V Output |
| 5 | -V Output |
| 6 | NC |
| 7 | NC |
| 8 | NC |

Note:
Unit: mm(inch)
Wire range : 24-12 AWG
Tightening torque : Max 0.4 N.m
General tolerance ± 1.00 : (± 0.04)

Dimensions with STD Optional



| Pin Output Specifications | |
|---------------------------|--------------|
| Pin | Single |
| 1 | AC Input (L) |
| 2 | NC |
| 3 | AC Input (N) |
| 4 | +V Output |
| 5 | -V Output |
| 6 | NC |
| 7 | NC |
| 8 | NC |



Note:
Unit: mm(inch)
Wire range : 24-12 AWG
Mounting rail: TS35
Tightening torque : Max 0.4 N.m
General tolerance ± 1.00 : (± 0.04)
Mounting rail must be grounded.

NOTE: **1.** Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. **2.** Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. **3.** Mechanical drawings and specifications are for reference only. **4.** All specifications are measured at an ambient temperature of 25°C, humidity < 75%, nominal input voltage and at rated output load unless otherwise specified. **5.** Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. **6.** This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other than the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [AC/DC Converters](#) category:

Click to view products by [Aimtec](#) manufacturer:

Other Similar products are found below :

[ICE3AR0680VJZ](#) [ICE3AR2280CJZ](#) [ICE3BR0680JZ](#) [SEA01](#) [FAN7621SSJX](#) [BP5011](#) [BP5055-12](#) [ICE2QR4780Z](#) [NCP1124BP100G](#)
[AP3983EP7-G1](#) [ICE2QR4765](#) [TEA19363T/1J](#) [AP3125CMKTR-G1](#) [ICE3AR10080CJZ](#) [SC1076P065G](#) [47132](#) [47165](#) [APR3415BMTR-G1](#)
[NCP1126BP100G](#) [HF500GP-40](#) [TNY179PN](#) [ICE3AR10080JZXKLA1](#) [BM2P0361-Z](#) [BM2P249Q-Z](#) [BM521Q25F-GE2](#) [INN3164C-H107-](#)
[TL](#) [HR1001LGS-P](#) [BM2P131X-Z](#) [BM2P161X-Z](#) [BM2P181X-Z](#) [BM2P201X-Z](#) [BM2P241X-Z](#) [LNK576DG-TL](#) [INN3278C-H215-TL](#)
[INN3278C-H217-TL](#) [INN3678C-H605-TL](#) [NCP1342BMDCDD1R2G](#) [AP3304AW6-7](#) [APR34910S-13](#) [RAC05E-05SKT](#) [TNY285PG](#)
[TNY286PG](#) [TNY287PG](#) [TNY288DG-TL](#) [TNY288PG](#) [TOP255PN](#) [MP100GN](#) [ICE2QR2280Z1XKLA1](#) [ICE2QS02GXUMA1](#)
[ICE3A1065ELJFKLA1](#)