

15 WATT AC-DC CONVERTER ERM-SA SERIES

General Description

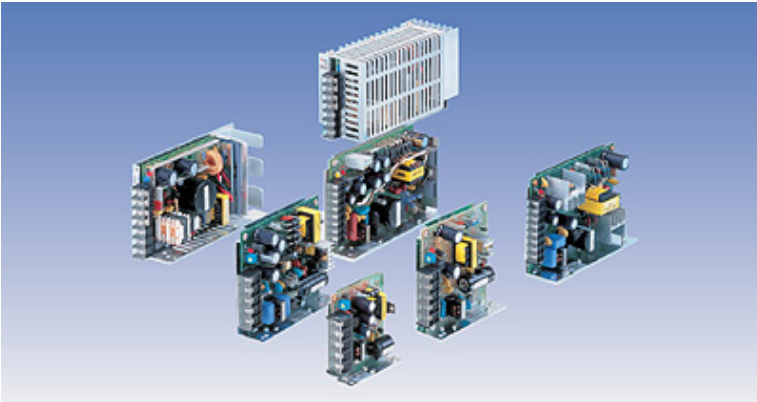
"ER"-Series AC/DC Switching power supplies are open frame, low cost with high efficiency. 65 different models are available from low to medium power. A low power modules use a simple RCC circuit while high power supplies employ a forward converter.

Features

1. Open Frame
2. Cost Effective
3. High Efficiency
4. No derating without cover and horizontal mounting
5. Input 170-264Vac
6. EMI : complies with FCC/A, FCC/B for ERD & ERE
7. Over voltage protection

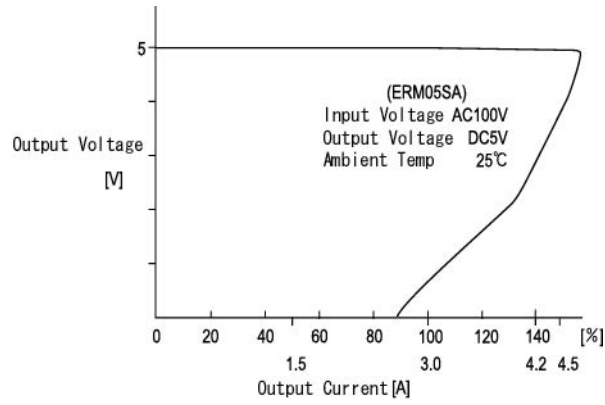
Cover(add suffix "-P")

***-P" model dimension is same as "without cover" model

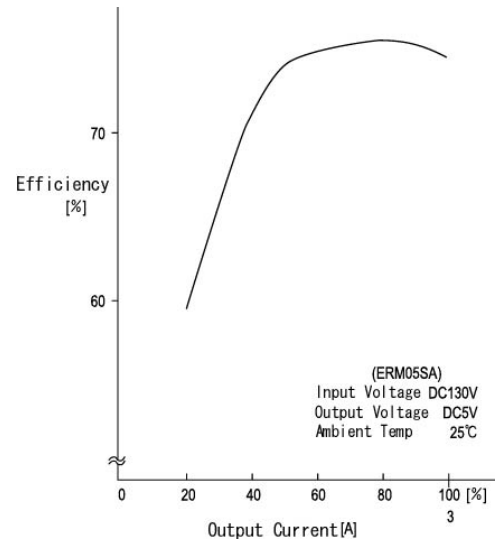


| Specifications<AC/DC> | Model | | | | |
|-----------------------------------|-----------------------|---------|---------|---------|---------|
| ERM**SA 15WATTS/SINGLE | ERM05SA | ERM12SA | ERM15SA | ERM24SA | ERM48SA |
| Input Characteristic | | | | | |
| Input Voltage | AC100V(DC130V) | | | | |
| Input Range | AC85-132V(DC110-175V) | | | | |
| Input Frequency | 50/60Hz | | | | |
| Input Frequency Range | 47-440Hz | | | | |
| Phase | Single | | | | |
| Inrush Current *1 | 25A(maximum)at AC100V | | | | |
| Efficiency [%] (typical) *2 | 74 | 78 | 79 | 80 | 81 |

OCP Curve



Efficiency Curve

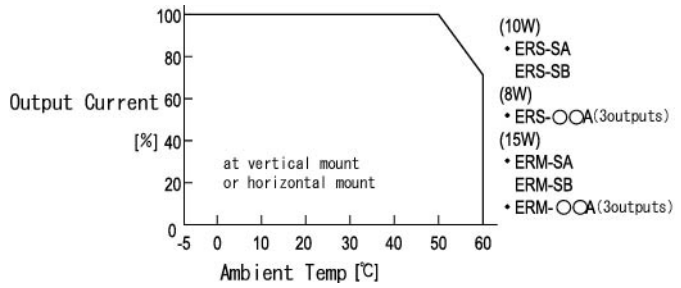
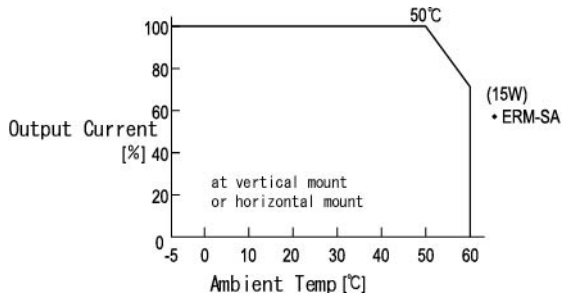


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|--|---|---------|---------|---------|---------|
| ERM**SA 15WATTS/SINGLE | ERM05SA | ERM12SA | ERM15SA | ERM24SA | ERM48SA |
| Output Characteristic | | | | | |
| Output Voltage [V] | 5 | 12 | 15 | 24 | 48 |
| Output Current [A] | 3.0 | 1.3 | 1.0 | 0.7 | 0.35 |
| Voltage Adjust Range | +/- 5% of Rated Output Voltage(at no load within the input range) | | | | |
| Ripple and Noise [mVp-p](maximum) *3 | 100 | 170 | 200 | 290 | 530 |
| Regulation | | | | | |
| a.Statistic Line Regulation [mV](maximum) | 25 | 60 | 75 | 120 | 240 |
| b.Statistic Load Regulation [mV](maximum) | 50 | 120 | 150 | 240 | 480 |
| c.Temperature Coefficient *4 | 0.03%/°C | | | | |
| d.Drift[mV](maximum) *5 | 40 | 75 | 90 | 135 | 255 |
| e.Dynamic Load Regulation [mV](typical) *6 | not specified | | | | |
| f.Recovery Time *6 | not specified | | | | |
| Rise up time | 200mS(maximum) at 25°C and rated input/output | | | | |
| Hold up time | 20mS(minimum) at 25°C and rated input/output | | | | |
| Functions | | | | | |
| Overcurrent Protection | Current Limiting with automatic recovery | | | | |
| ≥ 105% of Rated Output Current[A] | 3.15 | 1.37 | 1.05 | 0.74 | 0.37 |
| Overvoltage Protection | Zener diode clamping | | | | |
| ≥ 115% of Rated Output Voltage[V] | 5.75 | 13.8 | 17.25 | 27.6 | 55.2 |
| Remote Sense | not available | | | | |
| Remote On/Off | not available | | | | |
| Environmental | | | | | |
| Operating Temperature | -5 to +50°C | | | | |
| Operating Humidity | 85%RH(non-condensing) | | | | |
| Storage Temperature | -20 to +85°C | | | | |
| Storage Humidity | 85%RH(non-condensing) | | | | |
| Withstanding Voltage | Primary-Secondary AC1,500V for 1minute | | | | |
| | Primary-Frame Ground AC1,500V for 1minute | | | | |
| | Secondary-Frame Ground AC500V for 1minute | | | | |
| Isolation Resistance | Primary-Secondary-Frame Ground 50MΩ(minimum) by DC500V insulation tester | | | | |
| Vibration | 5-10Hz:10mm double amplitude,10-55Hz:19.6m/s ² ,20minutes' period for 60minutes each along X, Y, Z axes(non operating) | | | | |
| Shock | 294m/s ² | | | | |
| Cooling | Convection | | | | |
| ? Leakage Current | 1mA(maximum) at 25°C, rated input/output and rated input frequency | | | | |
| ? Line Conducted Noise | Built to meet FCC Part15-B Class B | | | | |
| ? Safety | | | | | |
| ? Weight (typical) | 220g/enclosed type:270g | | | | |
| ? MTBF [H] | 950,000 | | | | |
| ? Switching Frequency[kHz](typical) *7 | 30 | | | | |

Conditions:

- *1 at cold start
- *2 at DC130V input and rated output
- *3 measured by a bayonet probe at output connector at 0 to 100MHz bandwidth
- *4 at -5 to +50°C
- *5 for 7hour period after 1hour warm-up at 25°C and rated input/output
- *6 when output current changed from 25% to 75% of rated output current rapidly at AC100V input
- *7 variable on input voltage and load conditions

Derating Curve



Dimension Diagram (mm)

