

IMP Series

1...12 Watt DC-DC Converters



Input voltage range up to 72 V DC
 1, 2 or 3 outputs up to 30 V DC
 1500 V DC I/O electric strength test voltage

- Wide input range
- Short circuit protection
- Low cost

Selection chart

| Output 1 | | Output 2 | | Output 3 | | Type | Type | Type | Opt. |
|-----------|-----------|-----------|-----------|-----------|-----------|----------------|--------------------|--------------------|------|
| U_o nom | I_o nom | U_o nom | I_o nom | U_o nom | I_o nom | Input voltage | Input voltage | Input voltage | |
| [V DC] | [mA] | [V DC] | [mA] | [V DC] | [mA] | 4.5...5.5 V DC | 10...36 V DC | 18...72 V DC | |
| 3.3 | 1500 | - | - | - | - | 5 IMP 6-03-7 | 24 IMP 6-03-7 | 48 IMP 6-03-7 | - |
| 3.3 | 3000 | - | - | - | - | - | 24 IMP 12-03-7 | 48 IMP 12-03-7 | - |
| 5 | 200 | - | - | - | - | 5 IMP 1-05-7 | - | - | S |
| 5 | 500 | - | - | - | - | - | 24 IMP 3-05-7 | 48 IMP 3-05-7 | S |
| 5 | 1000 | - | - | - | - | 5 IMP 6-05-7 | 24 IMP 6-05-7 | 48 IMP 6-05-7 | - |
| 5 | 2400 | - | - | - | - | - | 24 IMP 12-05-7 | 48 IMP 12-05-7 | - |
| 12 | 84 | - | - | - | - | 5 IMP 1-12-7 | - | - | S |
| 12 | 250 | - | - | - | - | - | 24 IMP 3-12-7 | 48 IMP 3-12-7 | S |
| 12 | 500 | - | - | - | - | 5 IMP 6-12-7 | 24 IMP 6-12-7 | 48 IMP 6-12-7 | - |
| 12 | 1000 | - | - | - | - | - | 24 IMP 12-12-7 | 48 IMP 12-12-7 | - |
| 15 | 66 | - | - | - | - | 5 IMP 1-15-7 | - | - | S |
| 15 | 200 | - | - | - | - | - | 24 IMP 3-15-7 | 48 IMP 3-15-7 | S |
| 15 | 400 | - | - | - | - | 5 IMP 6-15-7 | 24 IMP 6-15-7 | 48 IMP 6-15-7 | - |
| 15 | 800 | - | - | - | - | - | 24 IMP 12-15-7 | 48 IMP 12-15-7 | - |
| +5 | 100 | -5 | 100 | - | - | 5 IMP 1-0505-7 | - | - | S |
| +5 | 250 | -5 | 250 | - | - | - | 24 IMP 3-0505-7 | 48 IMP 3-0505-7 | S |
| +5 | 500 | -5 | 500 | - | - | 5 IMP 6-0505-7 | 24 IMP 6-0505-7 | 48 IMP 6-0505-7 | - |
| +5 | 1200 | -5 | 1200 | - | - | - | 24 IMP 12-0505-7 | 48 IMP 12-0505-7 | - |
| +12 | 42 | -12 | 42 | - | - | 5 IMP 1-1212-7 | - | - | S |
| +12 | 125 | -12 | 125 | - | - | - | 24 IMP 3-1212-7 | 48 IMP 3-1212-7 | S |
| 12 | 125 | 12 | 125 | - | - | - | 24 IMP 3-12-12-7 | 48 IMP 3-12-12-7 | - |
| +12 | 250 | -12 | 250 | - | - | 5 IMP 6-1212-7 | 24 IMP 6-1212-7 | 48 IMP 6-1212-7 | - |
| +12 | 500 | -12 | 500 | - | - | - | 24 IMP 12-1212-7 | 48 IMP 12-1212-7 | - |
| +15 | 33 | -15 | 33 | - | - | 5 IMP 1-1515-7 | - | - | S |
| 15 | 100 | 15 | 100 | - | - | - | 24 IMP 3-15-15-7 | 48 IMP 3-15-15-7 | - |
| +15 | 100 | -15 | 100 | - | - | - | 24 IMP 3-1515-7 | 48 IMP 3-1515-7 | S |
| +15 | 200 | -15 | 200 | - | - | 5 IMP 6-1515-7 | 24 IMP 6-1515-7 | 48 IMP 6-1515-7 | - |
| +15 | 400 | -15 | 400 | - | - | - | 24 IMP 12-1515-7 | 48 IMP 12-1515-7 | - |
| 5 | 250 | 5 | 250 | - | - | - | 24 IMP 3-05-05-7 | 48 IMP 3-05-05-7 | - |
| 5 | 1500 | +12 | 200 | -12 | 200 | - | 24 IMP 12-051212-7 | 48 IMP 12-051212-7 | - |
| 5 | 1500 | +15 | 160 | -15 | 160 | - | 24 IMP 12-051515-7 | 48 IMP 12-051515-7 | - |

Input

| | | |
|----------------------------|--------------------------------------|----------------|
| Input voltage | continuous range, 5 V (IMP 1, IMP 6) | 4.5...5.5 V DC |
| | continuous range, 24 V | 10...36 V DC |
| | continuous range, 48 V | 18...72 V DC |
| Reverse voltage protection | shunt diode | |

Output

| | | |
|---------------------------------|--|----------------------------|
| Output voltage setting accuracy | $U_{i\text{ nom}}, I_{o\text{ nom}}$ | $\pm 2\% U_{o\text{ nom}}$ |
| Minimum load | recommended | 20% $I_{o\text{ nom}}$ |
| Line regulation | $U_{i\text{ min}} \dots U_{i\text{ max}}, I_{o\text{ nom}}$ | $\pm 1\% U_{o\text{ nom}}$ |
| Load regulation | $U_{i\text{ nom}}, 0 \dots 100\% I_{o\text{ nom}}$, regulated outputs | 2% $U_{o\text{ nom}}$ |
| | tracking outputs | max. 6% $U_{o\text{ nom}}$ |
| Output voltage switching noise | $U_{i\text{ nom}}, 20 \dots 100\% I_{o\text{ nom}}$, peak-peak, total | max. 3% $U_{o\text{ nom}}$ |
| Efficiency | $U_{i\text{ nom}}, I_{o\text{ nom}}$ | up to 83% |

Control and protection

| | | |
|---------------------|---|-------------------------|
| Overload protection | $U_{i\text{ min}}$, full load | 125% $P_{i\text{ nom}}$ |
| No-load protection | | |
| Remote shut down | positive logic (floating or high signal = on) | |

Safety and EMC

| | | |
|--------------------------------|--------------------------------|-----------|
| Electric strength test voltage | I/O | 1500 V DC |
| Electromagnetic interference | conducted with external filter | class B |

Environmental

| | | |
|-------------------------------|--------------------------------------|--------------|
| Operating ambient temperature | $U_{i\text{ nom}}, I_{o\text{ nom}}$ | -25...71°C |
| Storage temperature | non operational | -40...100°C |
| Relative humidity | non condensing | 95% |
| MTBF | MIL-HDBK-217F, N2 | >3'700'000 h |

Options

| | | |
|--------------------------|-----------------|---|
| Industry standard pinout | IMP 1 and IMP 3 | S |
|--------------------------|-----------------|---|

Accessories

| | | |
|----------------------------------|--|--|
| DIN and chassis mounting bracket | | |
|----------------------------------|--|--|

IMP Series

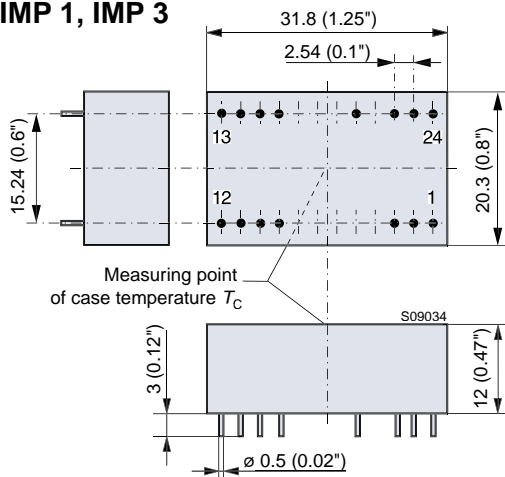
1...12 Watt DC-DC Converters

Mechanical data

Tolerances ± 0.3 mm (0.012") unless otherwise indicated.



IMP 1, IMP 3



Pin allocation IMP 1

| Pin | Single output unit | Dual output unit |
|-----|--------------------|------------------|
| 1 | Vi+ | Vi+ |
| 2 | Vi+ | Vi+ |
| 10 | - | COM |
| 11 | - | COM |
| 12 | Vo- | - |
| 13 | Vo+ | Vo- |
| 15 | - | Vo+ |
| 23 | Vi- | Vi- |
| 24 | Vi- | Vi- |

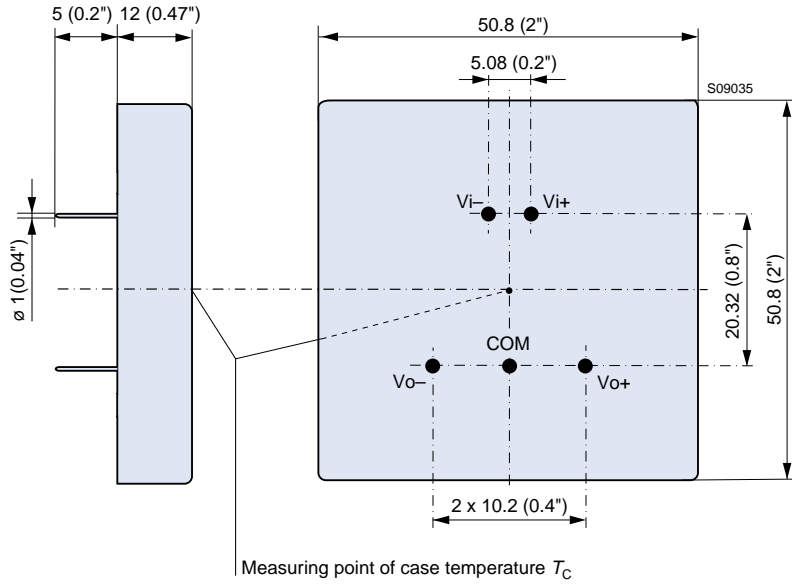
Industry standard pinout (option S)

| Pin | Single output | Dual output |
|-----|---------------|-------------|
| 2 | Vi- | Vi- |
| 3 | Vi- | Vi- |
| 9 | n.c. | COM |
| 10 | n.c. | n.c. |
| 11 | n.c. | Vo- |
| 14 | Vo+ | Vo+ |
| 15 | n.c. | n.c. |
| 16 | Vo- | COM |
| 22 | Vi+ | Vi+ |
| 23 | Vi+ | Vi+ |

Alternative pinout IMP 3

| Pin | Single output | Dual output | Double output |
|-----|---------------|-------------|---------------|
| 1 | Vi+ | Vi+ | Vi+ |
| 2 | Vi+ | Vi+ | Vi+ |
| 9 | - | - | Go1 |
| 10 | - | COM | - |
| 11 | - | COM | - |
| 12 | Vo- | - | Vo1 |
| 13 | Vo+ | Vo- | Vo2 |
| 15 | - | Vo+ | - |
| 16 | - | - | Go2 |
| 20 | SD | SD | SD |
| 23 | Vi- | Vi- | Vi- |
| 24 | Vi- | Vi- | Vi- |

IMP 6, IMP 12 with single or dual output



IMP 12 with triple output

