

IMX 4 Series

4 Watt DC-DC Converters



Input voltage ranges up to 121 V DC
 1 or 2 outputs up to 48 V DC
 Up to 2000 V DC I/O electric strength test



- Short circuit protection
- DIL 24 Case with 8.5 mm profile

Selection chart

| Output 1 | | Output 2 | | Input voltage U_i [V DC] | Type | Options ¹ |
|-------------------------------|-----------------------------|-------------------------------|-----------------------------|----------------------------------|-----------------|----------------------|
| $U_{o \text{ nom}}$ [V DC] | $I_{o \text{ nom}}$ [mA] | $U_{o \text{ nom}}$ [V DC] | $I_{o \text{ nom}}$ [mA] | | | |
| 3.3 | 900 | - | - | 8.4...36 | 20 IMX 4-03-9 | -8, M, Z |
| 3.3 | 900 | - | - | 16.8...75 | 40 IMX 4-03-9 | -8, M, Z |
| 3.3 | 900 | - | - | 40...121 | 70 IMX 4-03-9 | -8, L, Z |
| 5 | 700 | - | - | 4.7...16.8 | 5 IMX 4-05-9 | -8, Z |
| 5 | 700 | - | - | 8.4...36 | 20 IMX 4-05-9 | -8, M, K, Z |
| 5 | 700 | - | - | 16.8...75 | 40 IMX 4-05-9 | -8, M, K, Z |
| 5 | 700 | - | - | 40...121 | 70 IMX 4-05-9 | -8, Z |
| 12 | 340 | - | - | 4.7...16.8 | 5 IMX 4-12-9 | -8, Z |
| 12 | 340 | - | - | 8.4...36 | 20 IMX 4-12-9 | -8, M, K, Z |
| 12 | 340 | - | - | 16.8...75 | 40 IMX 4-12-9 | -8, M, K, Z |
| 12 | 340 | - | - | 40...121 | 70 IMX 4-12-9 | -8, Z |
| 15 | 280 | - | - | 4.7...16.8 | 5 IMX 4-15-9 | -8, Z |
| 15 | 280 | - | - | 8.4...36 | 20 IMX 4-15-9 | -8, M, K, Z |
| 15 | 280 | - | - | 16.8...75 | 40 IMX 4-15-9 | -8, M, K, Z |
| 15 | 280 | - | - | 40...121 | 70 IMX 4-15-9 | -8, Z |
| +5 | 350 | -5 | 350 | 8.4...36 | 20 IMX 4-0505-9 | -8, M, K, Z |
| +5 | 350 | -5 | 350 | 16.8...75 | 40 IMX 4-0505-9 | -8, M, K, Z |
| +5 | 350 | -5 | 350 | 40...121 | 70 IMX 4-0505-9 | -8, Z |
| +12 | 170 | -12 | 170 | 8.4...36 | 20 IMX 4-1212-9 | -8, M, K, Z |
| +12 | 170 | -12 | 170 | 16.8...75 | 40 IMX 4-1212-9 | -8, M, K, Z |
| +15 | 140 | -15 | 140 | 8.4...36 | 20 IMX 4-1515-9 | -8, M, K, Z |
| +15 | 140 | -15 | 140 | 16.8...75 | 40 IMX 4-1515-9 | -8, M, K, Z |
| +24 | 80 | -24 | 80 | 8.4...36 | 20 IMX 4-2424-9 | -8, M, Z |
| +24 | 80 | -24 | 80 | 16.8...75 | 40 IMX 4-2424-9 | -8, M, Z |

¹ For minimum order quantity and lead time contact Power-One.

Input

| | | |
|---------------|--------------------------------|-----------------|
| Input voltage | 5 IMX, continuous range, 5 V | 4.7...16.8 V DC |
| | 20 IMX, continuous range, 20 V | 8.4...36 V DC |
| | 40 IMX, continuous range, 40 V | 18...75 V DC |
| | 70 IMX, continuous range, 70 V | 40...121 V DC |

Output

| | | |
|---------------------------------|--|-------------------------------|
| Output voltage setting accuracy | $U_{i \text{ nom}}$, 50% $I_{o \text{ nom}}$ | $\pm 1\%$ $U_{o \text{ nom}}$ |
| Minimum load | recommended | 10% $I_{o \text{ nom}}$ |
| Line regulation | $U_{i \text{ min}} \dots U_{i \text{ max}}$, 50% $I_{o \text{ nom}}$ | $\pm 1\%$ $U_{o \text{ nom}}$ |
| Load regulation | $U_{i \text{ nom}}$, 10...100% $I_{o \text{ nom}}$, main output | $\pm 3\%$ $U_{o \text{ nom}}$ |
| | tracking output | $\pm 3\%$ $U_{o \text{ nom}}$ |
| Output voltage switching noise | $U_{i \text{ nom}}$, 10...100% $I_{o \text{ nom}}$, peak-peak, total | max. 2% $U_{o \text{ nom}}$ |
| Efficiency | $U_{i \text{ nom}}$, $I_{o \text{ nom}}$ | up to typ. 83% |

Control and protection

| | |
|---------------------|--|
| Input protection | suppressor diode (except 5 IMX 4) |
| Overload protection | $U_{i \text{ min}} \dots U_{i \text{ max}}$, fully protected, hiccup mode |
| No-load protection | yes |

Safety and EMC

| | | |
|--------------------------------|------------------------------|-------------------|
| Electric strength test voltage | I/O (5/20/40/70 IMX 4) | 1/1.5/1.5/2 kV DC |
| Electromagnetic interference | conducted (5/20/40/70 IMX 4) | class -/B/B/A |

Environmental

| | | |
|-------------------------------|---|--------------|
| Operating ambient temperature | $U_{i \text{ nom}}$, $I_{o \text{ nom}}$ | -40...71 °C |
| Storage temperature | non operational | -40...100 °C |
| Relative humidity | non condensing | 93% |
| MTBF | Gf 40 °C (MIL-HDBK-217F-N2) | >349'000 h |

Options

| | | |
|----------------------------|---------------------------------|----|
| Extended temperature range | -40...85 °C, ambient, operating | -8 |
| Alternative pinout | | K |
| SMD version | with pins | M |
| Open frame version | | Z |

Accessories

| | |
|------------------------------|--|
| DIN and chassis mounting kit | |
|------------------------------|--|

IMX 4 Series

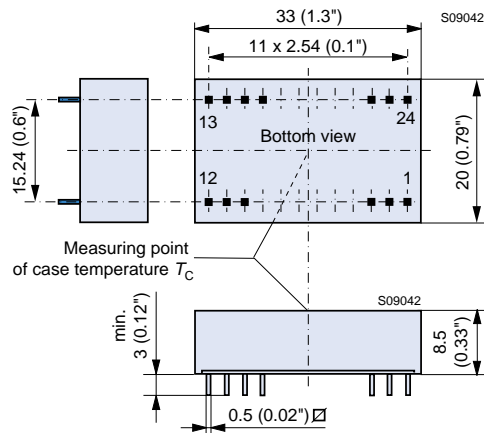
4 Watt DC-DC Converters

Mechanical data

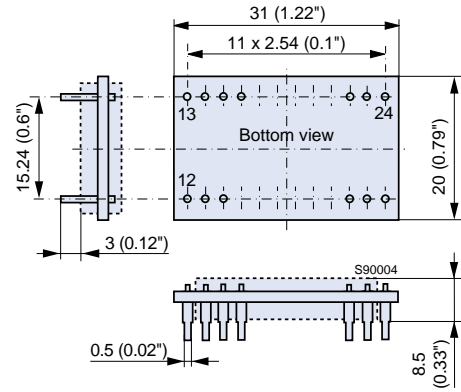
Tolerances ± 0.3 mm (0.012") unless otherwise indicated.



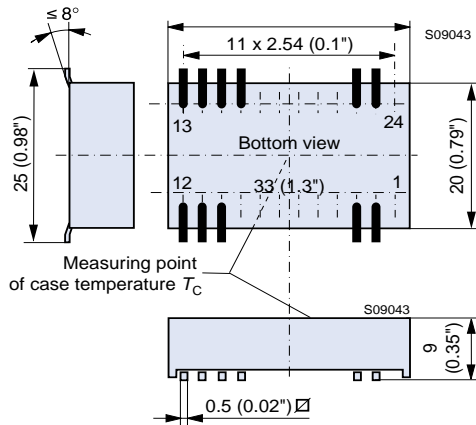
Standard and alternative pinout



Option Z



Option M



Board Mountable

IMX 4 Series

Standard including option Z

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

Option K

| Pin | Single output units | Dual output units |
|-----|---------------------|-------------------|
| 1 | Vi+ | Vi+ |
| 2 | n.c. | - |
| 10 | - | Go |
| 11 | - | Go |
| 12 | Vo- | - |
| 13 | Vo+ | Vo- |
| 15 | - | Vo+ |
| 24 | Vi- | Vi- |

SMD pinout (option M)

| Pin | Single output units | Dual output units |
|-----|---------------------|-------------------|
| 2 | Vi- | Vi- |
| 3 | Vi- | Vi- |
| 10 | n.c. | Go |
| 11 | Vo- | Vo- |
| 12 | Vo- | Vo- |
| 13 | Vo+ | Vo- |
| 14 | Vo+ | Vo+ |
| 15 | Vo+ | Vo+ |
| 16 | Vo- | Go |
| 22 | Vi+ | Vi+ |
| 23 | Vi+ | Vi+ |

Solder lands for option M

