

IMX 7 Series

7 Watt DC-DC Converters



Wide input voltage ranges up to 150 V DC
1 or 2 outputs up to 48 V DC
1500...2500 V DC I/O electric strength test



- Magnetic feedback for single output models
- Short circuit protection
- Industry standard 2" x 1" case with 10.5 mm profile

Selection chart

| Output 1 | | Output 2 | | Input voltage | Type | Options ^{1,2} |
|---------------------|------------------|---------------------|-------------------|-----------------|-------------------------------|------------------------|
| U_o nom [V DC] | I_o nom [A] | U_o nom [V DC] | I_o nom [mA] | U_i [V DC] | | |
| 3.3 | 1.5 | - | - | 8.4...36 | 20 IMX 7-03-9 | -8, M, C, L, Z |
| 3.3 | 1.5 | - | - | 16.8...75 | 40 IMX 7-03-9 ³ | -8, M, C, L, Z |
| 3.3 | 1.5 | - | - | 40...121 | 70 IMX 7-03-9 | -8, M |
| 3.3 | 1.5 | - | - | 60...150 | 110 IMX 7-03-9 | -8, M |
| 5.1 | 1.2 | - | - | 8.4...36 | 20 IMX 7-05-9 | -8, M, C, L, Z |
| 5.1 | 1.2 | - | - | 16.8...75 | 40 IMX 7-05-9 ³ | -8, M, C, L, Z |
| 5.1 | 1.2 | - | - | 40...121 | 70 IMX 7-05-9 | -8, M |
| 5.1 | 1.2 | - | - | 60...150 | 110 IMX 7-05-9 | -8, M |
| 12 | 0.5 | - | - | 8.4...36 | 20 IMX 7-12-9C | -8 |
| 12 | 0.6 | - | - | 16.8...75 | 40 IMX 7-12-9C ³ | -8 |
| 15 | 0.4 | - | - | 8.4...36 | 20 IMX 7-15-9C | -8 |
| 15 | 0.48 | - | - | 16.8...75 | 40 IMX 7-15-9C ³ | -8 |
| 24 | 0.26 | - | - | 8.4...36 | 20 IMX 7-24-9C | -8 |
| 24 | 0.3 | - | - | 16.8...75 | 40 IMX 7-24-9C ³ | -8 |
| 5 | 0.7 | 5 | 0.7 | 8.4...36 | 20 IMX 7-05-05-9 | -8, M, C, L, Z |
| 5 | 0.7 | 5 | 0.7 | 16.8...75 | 40 IMX 7-05-05-9 ³ | -8, M, C, L, Z |
| 5 | 0.7 | 5 | 0.7 | 40...121 | 70 IMX 7-05-05-9 | -8, M |
| 5 | 0.7 | 5 | 0.7 | 60...150 | 110 IMX 7-05-05-9 | -8, M |
| 12 | 0.3 | 12 | 0.3 | 8.4...36 | 20 IMX 7-12-12-9 | -8, M, C, L, Z |
| 12 | 0.3 | 12 | 0.3 | 16.8...75 | 40 IMX 7-12-12-9 ³ | -8, M, C, L, Z |
| 12 | 0.3 | 12 | 0.3 | 40...121 | 70 IMX 7-12-12-9 | -8, M |
| 12 | 0.3 | 12 | 0.3 | 60...150 | 110 IMX 7-12-12-9 | -8, M |
| 15 | 0.24 | 15 | 0.24 | 8.4...36 | 20 IMX 7-15-15-9 | -8, M, C, L, Z |
| 15 | 0.24 | 15 | 0.24 | 16.8...75 | 40 IMX 7-15-15-9 ³ | -8, M, C, L, Z |
| 15 | 0.24 | 15 | 0.24 | 40...121 | 70 IMX 7-15-15-9 | -8, M |
| 15 | 0.24 | 15 | 0.24 | 60...150 | 110 IMX 7-15-15-9 | -8, M |
| 24 | 0.15 | 24 | 0.15 | 8.4...36 | 20 IMX 7-24-24-9 | -8, M, C, L, Z |
| 24 | 0.15 | 24 | 0.15 | 16.8...75 | 40 IMX 7-24-24-9 ³ | -8, M, C, L, Z |
| 24 | 0.15 | 24 | 0.15 | 40...121 | 70 IMX 7-24-24-9 | -8, M |
| 24 | 0.15 | 24 | 0.15 | 60...150 | 110 IMX 7-24-24-9 | -8, M |

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

² Option M, C, L and Z exclude each other.

³ Operation at lower input voltage possible: P_o approx. 80% of $P_{o, nom}$ at $U_{i, min} = 14.4$ V

Input

| | | |
|---------------------|-----------|----------------|
| Input voltage range | 20 IMX 7 | 8.4...36 V DC |
| | 40 IMX 7 | 16.8...75 V DC |
| | 70 IMX 7 | 40...121 V DC |
| | 110 IMX 7 | 60...150 V DC |

Output

| | | |
|---------------------------------|---|--|
| Output voltage setting accuracy | $U_{i\text{ nom}}$, 50% $I_{o\text{ nom}}$, single output models | $\pm 0.5\% U_{o\text{ nom}}$ |
| | $U_{i\text{ nom}}$, 50% $I_{o\text{ nom}}$, double outp., main/aux. outp. | $\pm 1\% / \pm 1.2\% U_{o\text{ nom}}$ |
| Minimum load | recommended for double output models | 10% $I_{o\text{ nom}}$ |
| Line/load regulation | $U_{i\text{ min}} \dots U_{i\text{ max}}$, 50% $I_{o\text{ nom}}$, single output models | $\pm 1\% U_{o\text{ nom}}$ |
| Line regulation | $U_{i\text{ nom}}$, 50% $I_{o\text{ nom}}$, double output models | $\pm 1\% U_{o\text{ nom}}$ |
| Load regulation | $U_{i\text{ nom}}$, 10...100% $I_{o\text{ nom}}$, double outp. models, main outp. | $\pm 3\% U_{o\text{ nom}}$ |
| | tracking output | $\pm 3\% U_{o\text{ nom}}$ |
| Output voltage switching noise | $U_{i\text{ nom}}$, 0...100% $I_{o\text{ nom}}$, peak-peak, total | max. 1.5% $U_{o\text{ nom}}$ |
| Efficiency | $U_{i\text{ nom}}$, $I_{o\text{ nom}}$ | up to 84% |

Control and protection

| | | |
|----------------------|--|-----------------------------------|
| Input protection | suppressor diode | |
| Overload protection | $U_{i\text{ min}} \dots U_{i\text{ max}}$, fully protected, hiccup mode | |
| No-load protection | | |
| Remote shut down | TTL-compatible inhibit input | disabled with $\geq 2.4\text{ V}$ |
| Trim input for U_o | | |

Safety and EMC

| | | |
|--------------------------------|-------------------------|--------------------------|
| Electric strength test voltage | I/O (20/40/70/110 IMX7) | 1500/1500/2000/2500 V DC |
| Electromagnetic interference | 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 | 93% |
| MTBF | G_B 40 °C, MIL-HDBK-217F, N2 | 1'650'000 h |

Options

| | | |
|----------------------------|---------------------------------|----|
| Extended temperature range | -40...85 °C, ambient, operating | -8 |
| SMD version | with pins | M |
| SMD version | with adapter PCB | L |
| Open frame without case | | Z |
| C-pinout | | C |

Accessories

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

IMX 7 Series

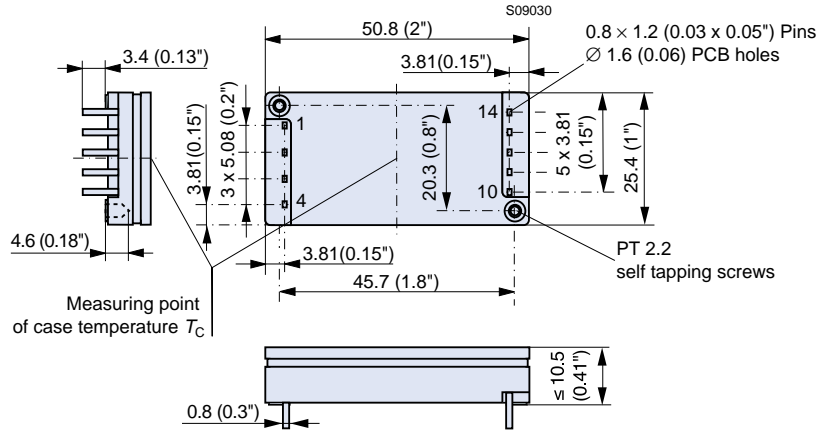
7 Watt DC-DC Converters

Mechanical data

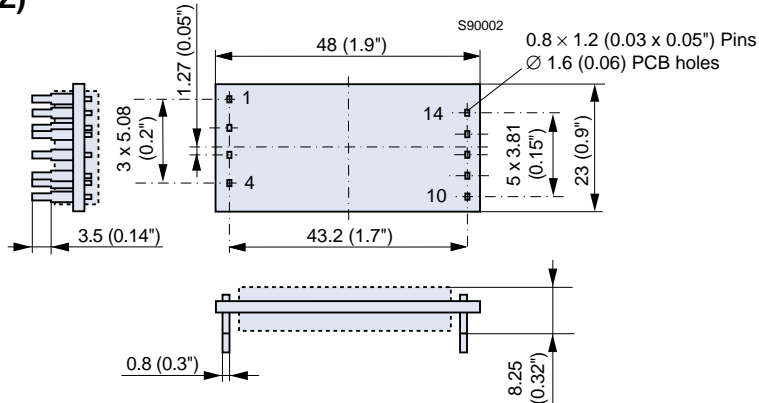
Tolerances ± 0.3 mm (0.012") unless otherwise indicated.



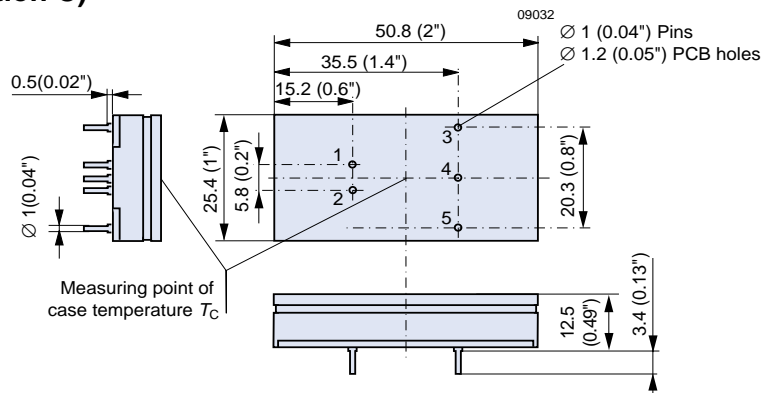
IMX 7



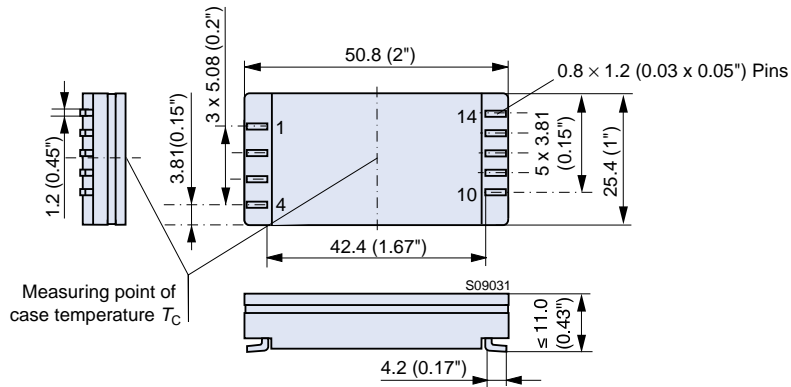
IMX 7 (option Z)



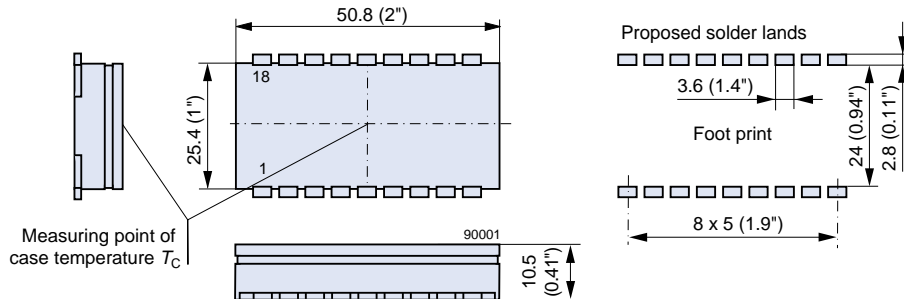
IMX 7 (option C)



IMX 7 SMD version (option M)



IMX 7 SMD version (option L)



Pin allocation IMX 7, option M and Z

| Pin | Single output | Dual output |
|-----|---------------|-------------|
| 1 | Vi+ | Vi+ |
| 2 | Vi- | Vi- |
| 3 | i | i |
| 4 | n.c. | R (Trim) |
| 10 | Vo- | Vo1- |
| 11 | Vo+ | Vo1+ |
| 12 | Vo- | Vo2- |
| 13 | R | Vo2+ |
| 14 | n.c. | n.c. |

SMD version (option L)

| Pin | Single output | Dual output |
|-----|---------------|-------------|
| 1 | Vo | Vo1 |
| 2 | Go | Go |
| 3 | n.c. | Vo2 |
| 4 | n.c. | n.c. |
| 5 | n.c. | n.c. |
| 6 | n.c. | n.c. |
| 7 | n.c. | n.c. |
| 8 | n.c. | n.c. |
| 9 | n.c. | Trim |
| 10 | n.c. | n.c. |
| 11 | i | i |
| 12 | no pin | no pin |
| 13 | no pin | no pin |
| 14 | n.c. | n.c. |
| 15 | n.c. | n.c. |
| 16 | n.c. | n.c. |
| 17 | Vi- | Vi- |
| 18 | Vi+ | Vi+ |

C pinout (option C)

| Pin | Single output | Dual output |
|-----|---------------|-------------|
| 1 | Vi+ | Vi+ |
| 2 | Vi- | Vi- |
| 3 | Vo+ | Vo+ |
| 4 | no pin | Go |
| 5 | Vo- | Vo- |



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