

## 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 $U_i$ [V DC]	Type	Options <sup>1,2</sup>
$U_o$ nom [V DC]	$I_o$ nom [A]	$U_o$ nom [V DC]	$I_o$ nom [mA]			
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 <sup>3</sup>	-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 <sup>3</sup>	-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 <sup>3</sup>	-8
15	0.4	-	-	8.4...36	20 IMX 7-15-9C	-8
15	0.48	-	-	16.8...75	40 IMX 7-15-9C <sup>3</sup>	-8
24	0.26	-	-	8.4...36	20 IMX 7-24-9C	-8
24	0.3	-	-	16.8...75	40 IMX 7-24-9C <sup>3</sup>	-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 <sup>3</sup>	-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 <sup>3</sup>	-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 <sup>3</sup>	-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 <sup>3</sup>	-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

<sup>1</sup> For minimum order quantity and lead time contact Power-One.

<sup>2</sup> Option M, C, L and Z exclude each other.

<sup>3</sup> 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		
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# IMX 7 Series

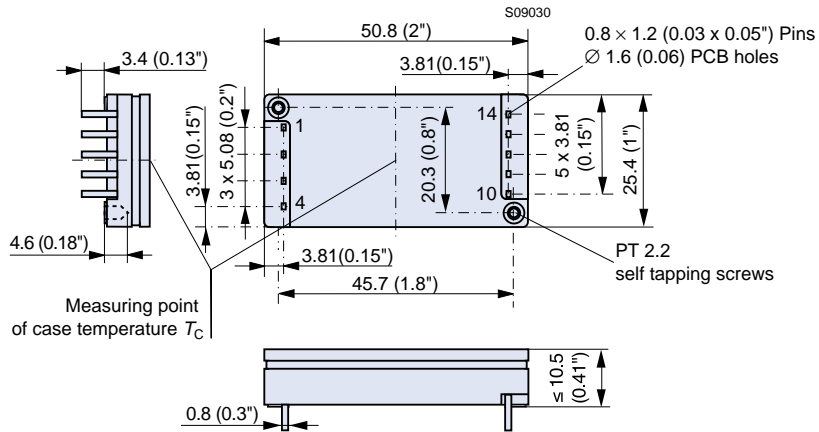
# 7 Watt DC-DC Converters

## Mechanical data

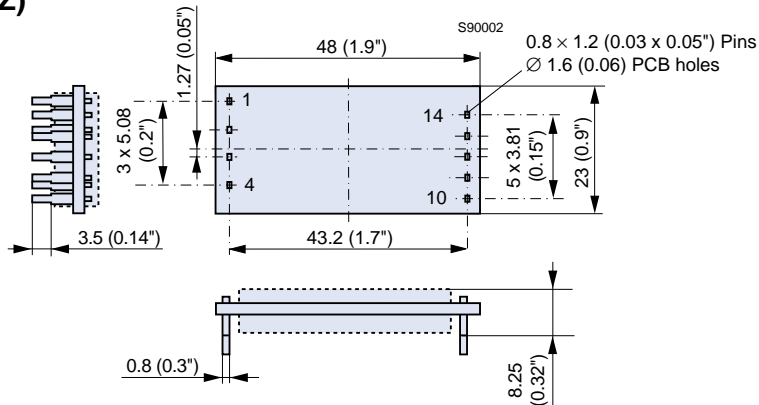
Tolerances  $\pm 0.3$  mm (0.012") unless otherwise indicated.



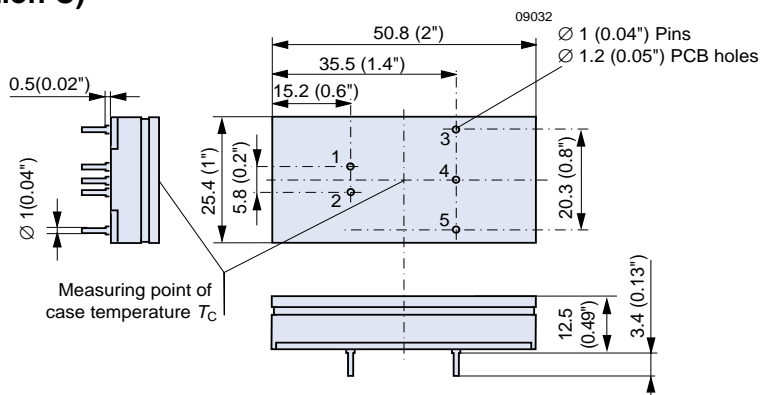
### IMX 7



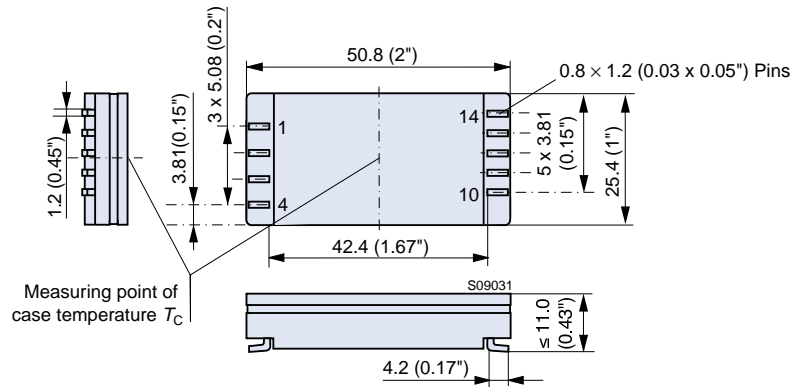
### IMX 7 (option Z)



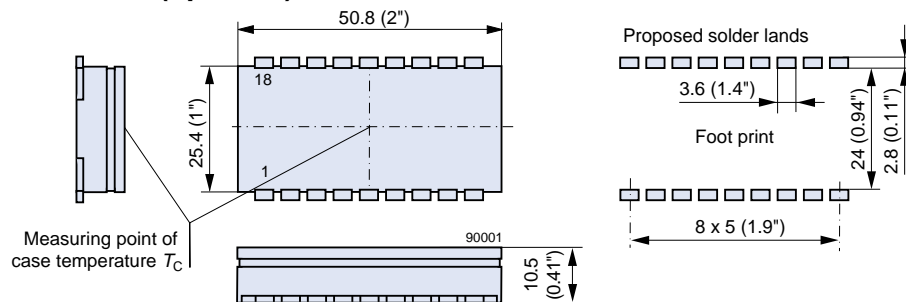
### IMX 7 (option C)



**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	$V_{i+}$	$V_{i+}$
2	$V_{i-}$	$V_{i-}$
3	i	i
4	n.c.	R (Trim)
10	$V_{o-}$	$V_{o1-}$
11	$V_{o+}$	$V_{o1+}$
12	$V_{o-}$	$V_{o2-}$
13	R	$V_{o2+}$
14	n.c.	n.c.

**SMD version (option L)**

Pin	Single output	Dual output
1	$V_o$	$V_{o1}$
2	$G_o$	$G_o$
3	n.c.	$V_{o2}$
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	$V_{i-}$	$V_{i-}$
18	$V_{i+}$	$V_{i+}$

**C pinout (option C)**

Pin	Single output	Dual output
1	$V_{i+}$	$V_{i+}$
2	$V_{i-}$	$V_{i-}$
3	$V_{o+}$	$V_{o+}$
4	no pin	$G_o$
5	$V_{o-}$	$V_{o-}$