QS4E_1.5UP series

0.25W - Single Output DC-DC Converter - Fixed Input - Isolated & Unregulated

DC-DC Converter 0.25 Watt

- **Operating temperature: -40°C to 105°C**
- **Single output rail**
- **1.5kVDC isolation**
- **High efficiency for low power applications**
- **SIP package styles**
- **Power density 0.36W/cm3**
- **UL 94V-0 package material**
- **Footprint from 0.69cm2**
- **Continuous Short circuit protection**

The QS4E_1.5UP series are miniature, isolated low power and high efficiency DC-DC converters in a SIP package. They offer the ideal solution in many space critical applications for board level power distribution. The Internal SMD construction makes it possible to offer a product with high performance at low cost, The series offers smaller size, improved efficiency, lower output ripple noise and 1.5kVDC isolation. Operating temperature range from -40 °C to 105 °C.

Common specifications

Short circuit protection:	Continuous
Operation temperature range:	-40°C~+105°C (Derating if the temperature ≥85°C)
Storage temperature range:	-50°C ~+130°C
Lead temperature:	300°C; 1.5mm from case for 10 seconds
Power density:	< 0.35W/cm³
Cooling:	Free air convection
Case material:	UL 94V-0 package
Dimensions:	11.48 x 10.00 x 6.00mm
Weight:	1.3g Typ.

Input specifications

Item	Test condition	Min	Typ	Max	Units
Input voltage range	• 3.3VDC input	2.9	3.3	3.6	VDC
	• 5VDC input	4.5	5	5.5	VDC
	• 12VDC input	10.7	12	13.3	VDC
	• 24VDC input	22	24	26.5	VDC

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 second	1500			VDC
Isolation resistance	Test at 1000VDC	1			GΩ

Output specifications

Item	Test condition	Min	Typ	Max	Units
Rated Power	TA = -40°C to 85°C			0.25	W
Output voltage accuracy	See tolerance envelope				
Line regulation	From high to low Vin (voltage variation +/-5%)		1	1.2	%
Load regulation	10% load to rated load • 5V output • all other types			 16 11	 % %
Switching frequency	All input types		110		kHz

Example:
QS4E_1.5UP
Q = 0,25 Watt; S4 = SIP4; E = Pinning; 24 = 24 Vin; 15= 15Vout;
S = Single output; 1.5 = 1.5kVDC isolation; U = Unregulated Output;
P = Short circuit protection (SCP)

Note:

1. Operation under minimum load will not damage the converter; However, they may not meet all specification listed, and that will reduce the life of product.
2. All specifications measured at Ta = 25°C, humidity <75%, nominal input voltage and rated output load unless otherwise specified.
3. Only typical models listed, other models may be different, please contact our technical person for more details.
4. In this datasheet, all the test methods of indications are based on corporate standards.

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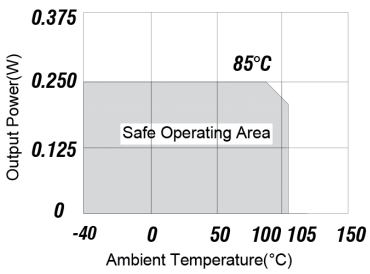
Product Selection Guide

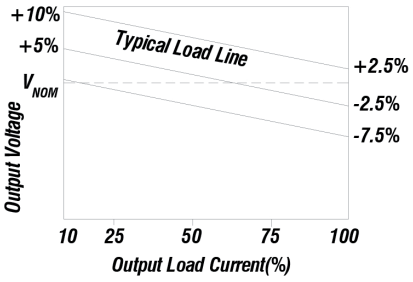
Part Number	Nominal Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max/min]	Efficiency [%, typ]	Package Style
QS4E_0303S1.5UP	3.3	3.3	75.8/7.58	70	SIP
QS4E_0305S1.5UP	3.3	5	51/5.1	70	SIP
QS4E_0312S1.5UP	3.3	12	21/2.1	73	SIP
QS4E_0503S1.5UP	5	3.3	75.8/7.58	70	SIP
QS4E_0505S1.5UP	5	5	50/5	70	SIP
QS4E_0509S1.5UP	5	9	28/2.8	75	SIP
QS4E_0512S1.5UP	5	12	21/2.1	75	SIP
QS4E_0515S1.5UP	5	15	16/1.6	75	SIP
QS4E_1203S1.5UP	12	3.3	75.8/7.58	70	SIP
QS4E_1205S1.5UP	12	5	50/5	71	SIP
QS4E_1209S1.5UP	12	9	28/2.8	75	SIP
QS4E_1212S1.5UP	12	12	21/2.1	75	SIP
QS4E_1215S1.5UP	12	15	16/1.6	75	SIP
QS4E_2405S1.5UP	24	5	50/5	71	SIP
QS4E_2412S1.5UP	24	12	21/2.1	75	SIP
QS4E_2415S1.5UP	24	15	16/1.6	75	SIP

Typical characteristics

Temperature derating graph

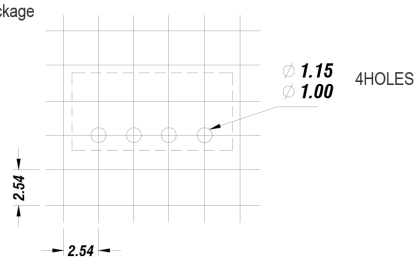


Tolerance envelope graph



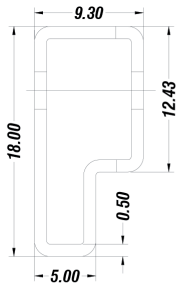
Recommended footprints

4Pin SIP Package



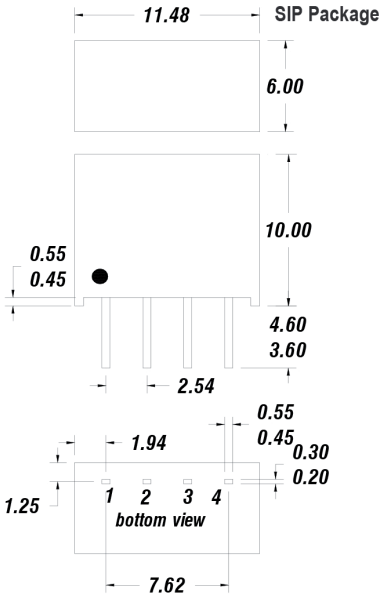
Tube outline

4Pin SIP Tube



Unless otherwise stated all dimensions in mm ±0.5mm.
Tube length (4 Pin SIP) : 520mm ±2mm.
Tube Quantity : 25PCS

Mechanical dimensions



4 PIN SIP

Pin	Function
1	-Vin
2	+Vin
3	-Vout
4	+Vout

All dimensions in mm±0.25mm. All pins on a 0.54mm pitch and within±0.25mm of true position.

Weight: 1.30g(SIP)