

QS4E Series

0.25W - Single Output - Fixed Input - Isolated & Unregulated
MINIATURE SIP PACKAGE

DC-DC Converter

0.25 Watt

- ⊕ Efficiency up to 80%
- ⊕ Small Footprint
- ⊕ SIP Package
- ⊕ Single Output Voltage
- ⊕ 1.5KVDC Isolation
- ⊕ Temperature Range: -40°C~+85°C
- ⊕ Industry Standard Pinout
- ⊕ UL94-V0 Package
- ⊕ No Heat sink Required
- ⊕ No External Component Required
- ⊕ RoHS Compliance

The QS4E Series are specially designed for applications where a single power supply is isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is fixed (voltage variation $\leq \pm 10\%$);
- 2) Where isolation is necessary between input and output (isolation voltage = 1500VDC)
- 3) Where the regulation of the output voltage and the output ripple and noise are not demanding. Such as: purely digital circuits, ordinary low frequency analog circuits and IGBT power device driven circuits, etc.

These products don't apply to:

- 1) Where the input supply voltage is varied (variation $\geq \pm 10\%$), otherwise our company's wide range series is recommended
- 2) Where the isolation voltage between input and output is required to be >1500VDC, otherwise our company's high isolation series of products are recommended



Common specifications

Short circuit protection:	1 second
Temperature rise at full load:	25°C MAX, 15°C TYP
Cooling:	Free air convection
Operation temperature range:	-40°C~+85°C
Storage temperature range:	-55°C ~+125°C
Storage humidity range:	< 95%
Case material:	Plastic [UL94-V0]
MTBF:	$\geq 35 \times 10^5$ hours

Output specifications

Item	Test condition	Min	Typ	Max	Units
Output power				0.25	W
Line regulation	For V_{in} change of 1%			± 1.2	%
Load regulation	10% to 100% full load			15	%
Output voltage accuracy	See tolerance envelope graph				
Temperature drift	100% full load			± 0.03	%/°C
Ripple & Noise	20MHz Bandwidth			75	mVp-p
Switching frequency	Full load, nominal input		100		KHz

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute	1500			VDC
Isolation resistance	Test at 500VDC	1000			MΩ
Isolation capacitance			60		pF

Note:

1. All specifications measured at $T_A = 25^\circ\text{C}$, humidity < 75%, nominal input voltage and rated output load unless otherwise specified.
2. See below recommended circuits for more details.

Model selection:

WCTP**_xxyyN#O

W=Watt; C= Case; T=Type; P=Pinning; **= Voltage Variation (omitted $\pm 10\%$); xx= V_{in} ; yy= V_{out} ; N= Numbers of Output; ##= Isolation (kVDC); O= output regulation

Example:

QS4E_0505S1.5U

Q= 0.25Watt; S4= SIP4; E=Pinning; 5Vin; 5Vout; S=Single Output; 1.5=1.5kVDC; U=Unregulated Output

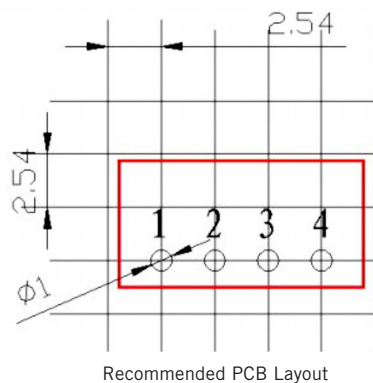
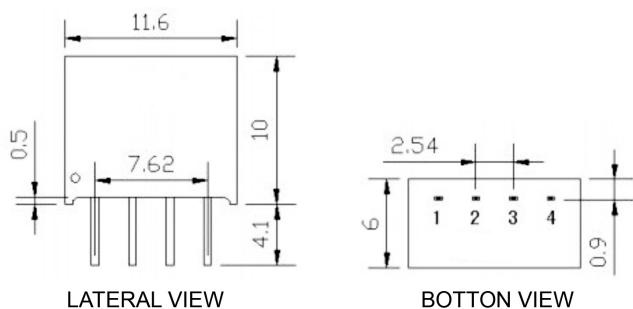
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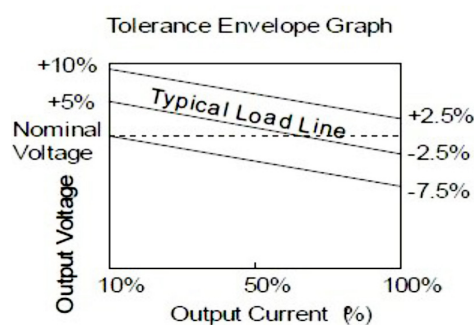
Part Number	Input Voltage Range [VDC]	Input Voltage [V]	Output Voltage [VDC]	Output current [mA; max]	Efficiency [%; typ]
QS4E_0303S1.5U	3.13-3.46	3.3	3.3	50	72
QS4E_0305S1.5U	3.13-3.46	3.3	5	50	74
QS4E_0503S1.5U	4.5-5.5	5	3.3	50	72
QS4E_0505S1.5U	4.5-5.5	5	5	50	74
QS4E_0509S1.5U	4.5-5.5	5	9	27	72
QS4E_0512S1.5U	4.5-5.5	5	12	20	74
QS4E_0515S1.5U	4.5-5.5	5	15	16	72
QS4E_0524S1.5U	4.5-5.5	5	24	10	74
QS4E_1205S1.5U	10.8-13.2	12	5	50	74
QS4E_1209S1.5U	10.8-13.2	12	9	27	72
QS4E_1212S1.5U	10.8-13.2	12	12	20	74
QS4E_1215S1.5U	10.8-13.2	12	15	16	72
QS4E_1224S1.5U	10.8-13.2	12	24	10	74
QS4E_1505S1.5U	13.5-16.5	15	5	50	74
QS4E_1515S1.5U	13.5-16.5	15	15	16	72
QS4E_2403S1.5U	21.6-26.4	24	3	50	74
QS4E_2405S1.5U	21.6-26.4	24	5	50	72
QS4E_2409S1.5U	21.6-26.4	24	9	27	74
QS4E_2412S1.5U	21.6-26.4	24	12	20	72
QS4E_2415S1.5U	21.6-26.4	24	15	16	74
QS4E_2424S1.5U	21.6-26.4	24	24	10	72
QS4E_4805S1.5U	43.2-52.8	48	5	50	72
QS4E_4809S1.5U	43.2-52.8	48	9	27	74
QS4E_4812S1.5U	43.2-52.8	48	12	20	72
QS4E_4815S1.5U	43.2-52.8	48	15	16	74
QS4E_4824S1.5U	43.2-52.8	48	24	10	72

Mechanical dimensions

Typical characteristics



Recommended PCB Layout



Pin assignment				
PIN	1	2	3	4
S	GND	Vin	0V	+Vo

Note:
Unit: mm[inch]