



Q57A_3UP series

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

DC-DC Converter

0.25 Watt

- ⊕ RoHS compliant
- ⊕ 3kVDC isolation
- ⊕ Efficiency up to 80%
- ⊕ Operating temperature: -40°C to 105°C
- ⊕ Power density up to 0.90W/cm³
- ⊕ UL 94V-0 package material

- ⊕ Footprint from 1.17cm²
- ⊕ Industry standard pinout
- ⊕ Input voltage: 3.3V, 5V, 12V, 15V, 24V
- ⊕ Output voltage: 3.3V, 5V, 9V, 12V, 15V, 24V
- ⊕ Custom solutions available
- ⊕ CE certification

The Q57A_3UP series are miniature, isolated 0.25W 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 3kVDC isolation.



Common specifications	
Short circuit protection:	1 second
Operation temperature range:	-40°C~+105°C (Derating if the temperature ≥85°C)
Storage temperature range:	-50°C ~+130°C
Storage humidity range:	< 95%
Lead temperature:	300°C MAX, 1.5mm from case for 10 sec
Internal power dissipation:	540mW
Power density:	< 0.90W/cm ³
Input voltage Vin, 03 variants:	5.5V
Input voltage Vin, 05 variants:	7V
Input voltage Vin, 12 variants:	15V
Input voltage Vin, 15 variants:	18V
Input voltage Vin, 24 variants:	28V
MTBF (MIL-HDFK-217F@25°C):	>3,500,000 hours
Case Temperature above ambient	• 5V output 35°C • Other 30°C
Case material:	Plastic [UL94-V0]
Cooling:	Free air convection
Weight:	2.1g

Input specifications					
Item	Test condition	Min	Typ	Max	Units
Input voltage range	• 3.3VDC input	2.9	3.3	3.6	V
	• 5VDC input	4.5	5.0	5.5	V
	• 12VDC input	11.0	12	13.1	V
	• 15VDC input	13.4	15	16.5	V
	• 15VDC input	22.0	24	26.5	V
Reflected ripple current			22	45	mA
Internal power dissipation				450	mW

Output specifications						
Item	Test condition	Min	Typ	Max	Units	
Output voltage accuracy	See tolerance envelope graph					
Rated Power	TA = -40°C to 85°C			1	W	
Line regulation	high vin to low vin		1.2		%	
Load regulation (10% to 100% load)	5V/12V input •05 output •12 output		13		%	
			7		%	
Ripple & Noise*	20MHz Bandwidth		50	75	mVp-p	
Temperature drift	100% full load		±0.03		% / °C	

* Ripple and noise are measured by "parallel cable" method, please see DC-DC Converter Application Notes for specific operation.

Example:

Q57A_0505S3UP

Q = 0.25 Watt; S7 = SIP7; A = Pinning; 05 = 5 Vin; 05 = 5Vout;
S = Single Output; 3 = 3kVDC Isolation; U = Unregulated Output;
P = Short circuit protection (SCP)

Isolation specifications					
Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute and 1mA max	3000			VDC
Isolation resistance	Test at 1000VDC	1			GΩ

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.

QS7A_3UP series

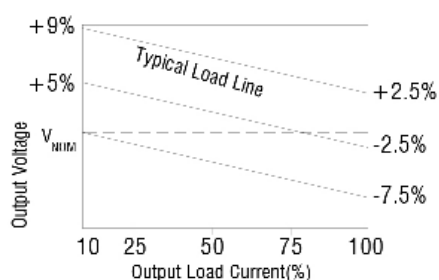
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Product Selection Guide

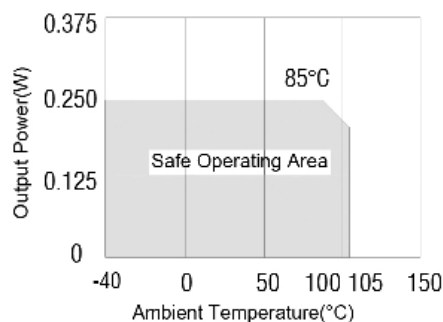
Part Number	Input Voltage [Nominal, VDC]	Output Voltage [VDC]	Output Current [mA, max/min]	Efficiency [%, typ]	Package Style
QS7A_0303S3UP	3.3	3.3	75.8/7.58	62	SIP
QS7A_0505S3UP	5	5	50/5	70	SIP
QS7A_0509S3UP	5	9	27.8/2.78	65	SIP
QS7A_0512S3UP	5	12	21/2.1	75	SIP
QS7A_0515S3UP	5	15	16/1.6	75	SIP
QS7A_0524S3UP	5	24	10.4/1.04	67	SIP
QS7A_1203S3UP	12	3.3	75.8/7.58	62	SIP
QS7A_1205S3UP	12	5	50/5	71	SIP
QS7A_1209S3UP	12	9	27.8/2.78	66	SIP
QS7A_1212S3UP	12	12	21/2.1	75	SIP
QS7A_1515S3UP	12	15	16/1.6	75	SIP
QS7A_1505S3UP	15	5	50/5	70	SIP
QS7A_2405S3UP	24	5	50/5	63	SIP
QS7A_2409S3UP	24	9	27.8/2.78	63	SIP
QS7A_2412S3UP	24	12	20.8/2.08	65	SIP
QS7A_2415S3UP	24	15	16.7/1.67	65	SIP
QS7A_2424S3UP	24	24	10.4/1.04	64	SIP

Typical characteristics

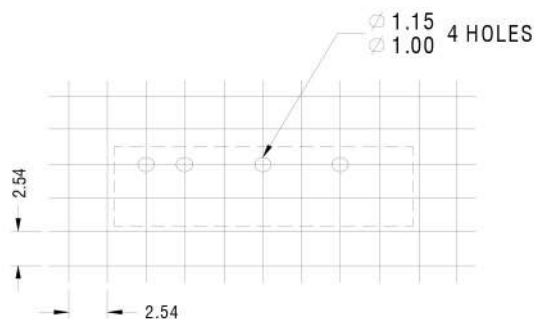
Tolerance envelope graph



Temperature derating graph



Recommended footprints

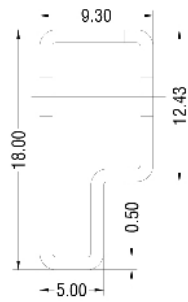


All dimensions in mm±0.25mmTube

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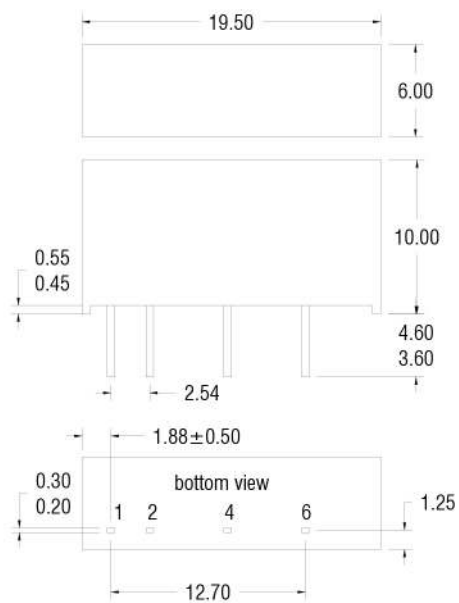
Tube outline



All dimensions in mm ± 0.25 mm
Quantity : 25PCS

Mechanical dimensions

SIP Package



7 PIN SIP

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

All dimensions in mm ± 0.25 mm. All pins on a 2.54 mm pitch and within ± 0.25 mm of true position.