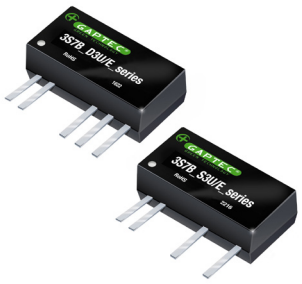
GAPTEC®
GREEN TECHNOLOGY



3S7B_3U/E Series

3W Single/Dual Output - Fixed Input - Isolated & Semi-regulated
SIP PACKAGE

DC-DC Converter 3 Watt

- **Small Footprint**
- **7 pin SIL package**
- **Low ripple and superior EMC features**
- **Temperature range: -40°C ~ +85°C**
- **No heat sink required**
- **No external component required**
- **3KVDC isolation**
- **Internal SMD construction**
- **Industry standard pinout**
- **RoHS compliance**
- **High efficiency**

The 3S7B_3U/E Series is specially designed for applications where a single power supply is highly 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 ≤±5%);
2) Where isolation is necessary between input and output (isolation voltage ≤3000VDC);
3) Where the regulation of the output voltage and the output ripple and noise are demanded.

Common specifications

Short circuit protection:	1 second optional: continous, automatic recovery
Cooling:	Free air convection
Operation temperature range:	-40°C – +85°C
Storage temperature range:	-50°C – +150°C
Case temperature above ambient:	30°C MAX
Lead temperature:	300°C (1.5mm from case for 10 sec.)
Storage humidity range:	< 95%
Case material:	Non-conductive black plastic [UL94-V0]
Potting material:	Epoxy [UL94-V0]
MTBF:	>3,500,000 hours
Weight:	2.8g

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute	3000			VDC
Isolation capacitance	Tested for 1 minute		60		pF
Isolation resistance	Test at 500VDC	1			GΩ

Output specifications

Item	Test condition	Min	Typ	Max	Units
Line regulation	High Vin to low Vin		±1	±1.2	%
Load regulation	see table				
Output voltage accuracy	100% full load	±2		±4	%
Temperature drift	100% full load		±0.02		%/°C
Ripple&Noise*	20MHz Bandwidth		35	50	mVp-p
Switching frequency	Variable		65		KHz

*Test ripple and noise measured with 20MHz bandwidth and 1.0UF ceramic capacitor.

Input specifications

Item	Test condition	Min	Typ	Max	Units
Voltage range	• 3.3Vin	2.9	3.3	3.6	V
	• 5Vin	4.5	5	5.5	V
	• 12Vin	11	12	13	V
	• 15Vin	13.4	15	16.4	V
	• 24Vin	22	24	26	V
Input filter	Capacitor				
Input reflected ripple current			25		mA pk-pk

Model selection:
WCTP_xxyyN##O**
W=Watt; **C=** Case; **T=**Type; **P=**Pinning; ****=** Voltage Variation (omitted ± 10%); **xx=** Vin; **yy=** Vout; **N=** Numbers of Output; **##=** Isolation (kVDC); **O=** output regulation

Example:
3S7B_0505S3U/E
3= 3Watt; S7= SIP7; B= Pinning; 5Vin; 5Vout; S= Single Output; 3= 3kVDC; U= Unregulated Output; E= High efficiency

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. In this datasheet, all the test methods of indications are based on corporate standards.
4. Only typical models listed, other models may be different, please contact our technical person for more details.

EMC specifications

CE*	EN55022 CLASS B	
RE	EN55022 CLASS B	
ESD	IEC 61000-4-2	perf. Criteria A
RS	IEC 61000-4-3	perf. Criteria A
EFT**	IEC 61000-4-4	perf. Criteria A
CS	IEC 61000-4-6	perf. Criteria A
PFMF	IEC 61000-4-8	perf. Criteria A

* Input filter components (C1, L) are used to help meet conducted emissions requirement for the module. Theses components should be mounted as close as possible to the module; all leads should be minimized to decrease radiated noise (see EMI filter, Test configuration).
** An external filter is required if the module has to meet IEC61000-4-4

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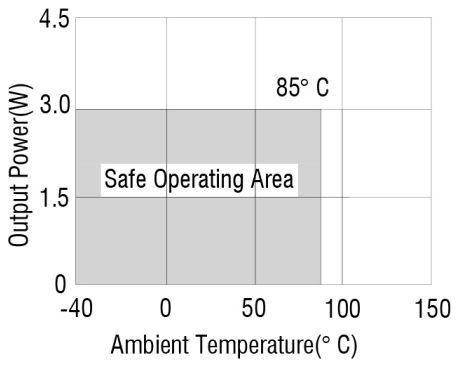
Part Number	Input Voltage [V]	Output Voltage [VDC]	Current [mA, max]	Load regulation [%]	Efficiency [%, max]
3S7B_0303S3U/E	3.3	3.3	909	7.2	83
3S7B_0305S3U/E	3.3	5	600	7.2	83
3S7B_0503S3U/E	5	3.3	909	7.2	83
3S7B_0505S3U/E	5	5	600	7.2	83
3S7B_0509S3U/E	5	9	333	5.8	86
3S7B_0512S3U/E	5	12	250	5.0	86
3S7B_0515S3U/E	5	15	200	4.6	87
3S7B_1205S3U/E	12	5	600	4.9	84
3S7B_1209S3U/E	12	9	333	3.0	87
3S7B_1212S3U/E	12	12	250	2.9	87
3S7B_1215S3U/E	12	15	200	2.5	89
3S7B_1515S3U/E	15	15	200	2.5	84
3S7B_2405S3U/E	24	05	600	4.9	84
3S7B_2412S3U/E	24	12	250	5.0	84
3S7B_2415S3U/E	24	15	200	2.5	89
3S7B_2424S3U/E	24	24	125	5.0	83
3S7B_0505D3U/E	5	±5	±300	6.3	83
3S7B_0509D3U/E	5	±9	±166.5	5.4	86
3S7B_0512D3U/E	5	±12	±125	4.8	86
3S7B_0515D3U/E	5	±15	±100	5.3	87
3S7B_0524D3U/E	5	±24	±62.5	5.0	83
3S7B_1205D3U/E	12	±5	±300	3.9	84
3S7B_1209D3U/E	12	±9	±166.5	2.9	86
3S7B_1212D3U/E	12	±12	±125	2.8	87
3S7B_1215D3U/E	12	±15	±100	2.5	87
3S7B_1515D3U/E	15	±15	±100	2.5	87
3S7B_2405D3U/E	24	±5	±300	3.9	84
3S7B_2412D3U/E	24	±12	±125	2.8	87
3S7B_2415D3U/E	24	±15	±100	2.5	87
3S7B_2424D3U/E	24	±24	±62.5	5.0	83

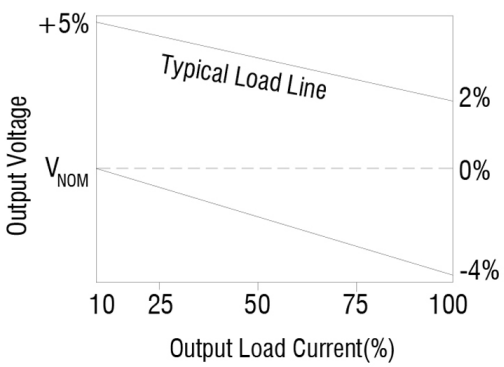
* Optional: suffix „P“ means short circuit protection, f.ex. 3S7B_2415S3U/EP

Typical characteristics

Temperature derating graph



Tolerance envelope graph



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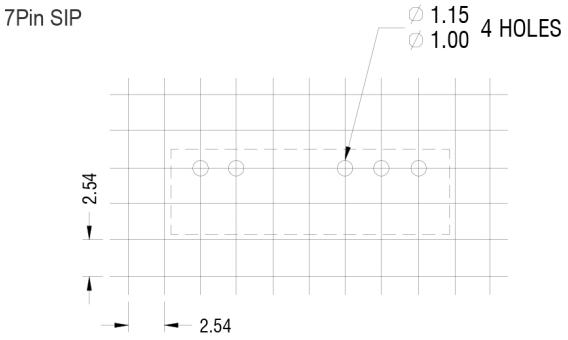
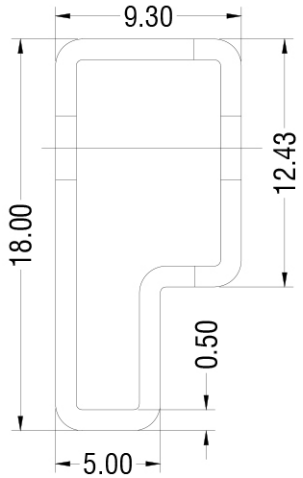
Footprint



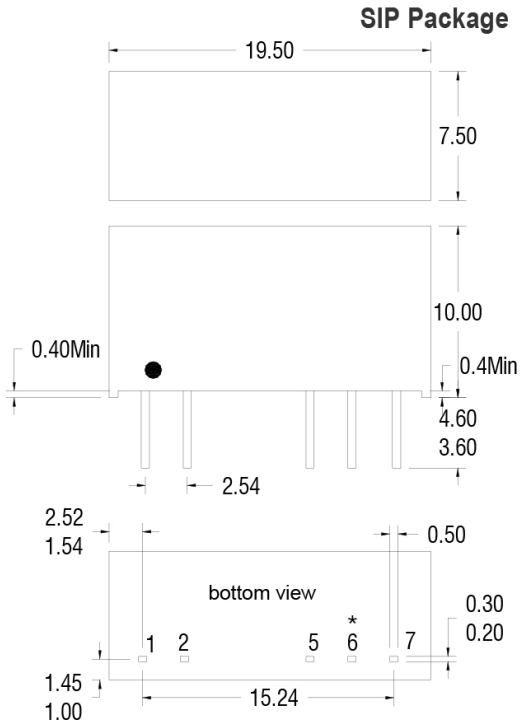
Unless otherwise stated all dimensions in mm ±0.5mm.

Tube outline



Note:
Unit: mm[inch]
All dimensions in mm ±0.5mm.
Tube length: 520mm ±2mm
Tube quantity: 25PCS

Mechanical Dimensions



Pin connections

Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	--	0V
7	+Vout	+Vout

Note:
Unit: mm[inch]
All dimensions in mm ±0.25mm.
All pins on a 2.54mm pitch and within ±0.25mm of true position.
* Pin not fitted on single output variants

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