

3S7BE_3U Series

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

DC-DC Converter

3 Watt

- ⊕ Small Footprint
- ⊕ 7 pin SIL package
- ⊕ Operating temperature range: -40°C ~ +85°C
- ⊕ No external component required
- ⊕ No heat sink required
- ⊕ 3KVDC isolation
- ⊕ Internal SMD construction
- ⊕ Industry standard pinout
- ⊕ RoHS compliance
- ⊕ UL 60950-1



The 3S7BE_3U 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 $\leq \pm 5\%$);
- 2) Where isolation is necessary between input and output (isolation voltage $\leq 3000\text{VDC}$);
- 3) Where the regulation of the output voltage and the output ripple and noise are demanded.

Common specifications

Short circuit protection:	1 second
Cooling:	Free air convection
Operation temperature range:	-40°C – +85°C
Storage temperature range:	-40°C – +125°C
Case temperature:	100°C MAX
Lead temperature:	260°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:	2.7g

Isolation specifications

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

Example:

3S7BE_0505S3U

3 = 3Watt; S7 = SIP7; B = Pinning; E = cost effective; 5Vin; 5Vout;
S = Single Output; 3 = 3kVDC; U = Unregulated Output

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.

Output specifications

Item	Test condition	Min	Typ	Max	Units
Output voltage accuracy	100% full load			±5	%
Line regulation	For Vin change of $\pm 1\%$		±1.2		%
Load regulation	10% to 100% F.L. • 5V • 9V/12V/15V			15	%
				10	%
Ripple&Noise*	20MHz Bandwidth		100		mVp-p
Switching frequency	Full load, nominal input		60		KHz
Transient response setting time	50% load step change		350		ms

Input specifications

Item	Test condition	Min	Typ	Max	Units
Voltage tolerance				±10	%
Input filter	Capacitor				

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. These 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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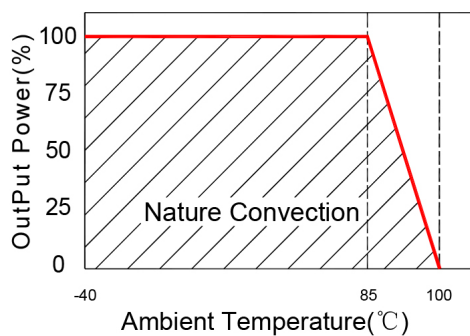
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Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max]	Efficiency [%, max]
3S7BE_xx05S3U	5, 12, 15, 24	5	600	82
3S7BE_xx09S3U	5, 12, 15, 24	9	333	85
3S7BE_xx12S3U	5, 12, 15, 24	12	250	85
3S7BE_xx15S3U	5, 12, 15, 24	15	200	85
3S7BE_xx05D3U	5, 12, 15, 24	±5	±300	82
3S7BE_xx09D3U	5, 12, 15, 24	±9	±167	85
3S7BE_xx12D3U	5, 12, 15, 24	±12	±125	82
3S7BE_xx15D3U	5, 12, 15, 24	±15	±100	85

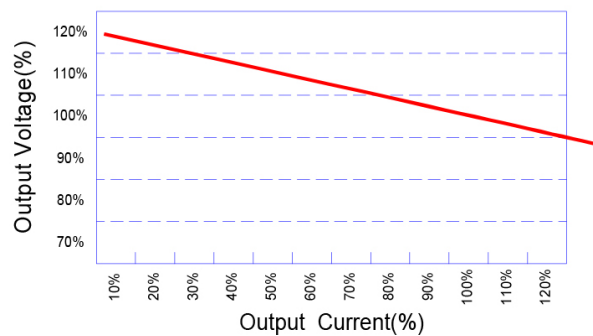
xx= Input voltage
05= 5VDC
12= 5VDC
15= 5VDC
24= 5VDC

Typical characteristics

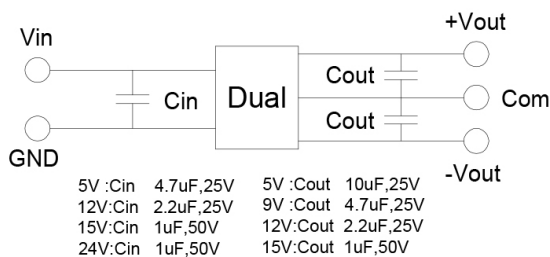
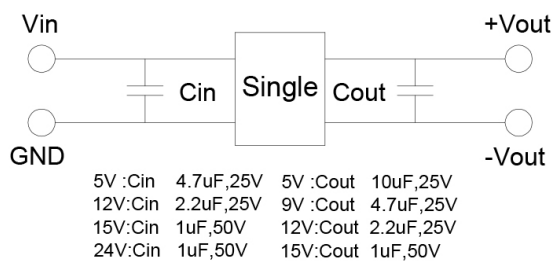
Temperature derating graph



Tolerance envelope graph



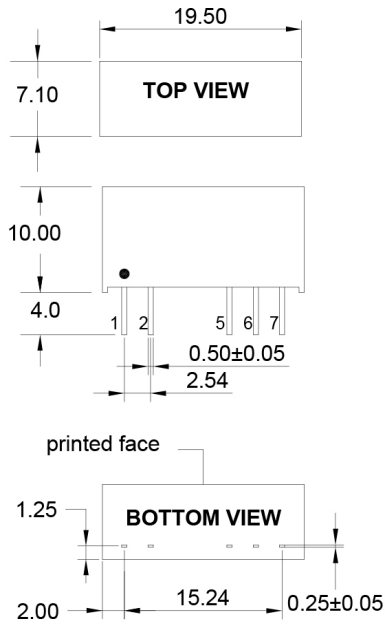
Recommended test circuit



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Mechanical Dimensions



Pin number	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	No Pin	Common
7	+Vout	+Vout

Unit:mm Unless otherwise specified, all tolerances are ± 0.25