

### FEATURES:

- RoHS compliant
- SMD Package
- Low ripple and noise
- High efficiency up to 83%
- Operating temperature -40°C to + 85°C
- Input / Output Isolation 1000 & 3000VDC
- Pin compatible with multiple manufacturers
- UL94-VO Package

### Models Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Efficiency (%)
AM1L-0303S-NZ	3.0-3.6	3.3	304	1000	70
AM1L-0305S-NZ	3.0-3.6	5	200	1000	71
AM1L-0309S-NZ	3.0-3.6	9	111	1000	71
AM1L-0312S-NZ	3.0-3.6	12	84	1000	72
AM1L-0315S-NZ	3.0-3.6	15	67	1000	72
AM1L-0324S-NZ	3.0-3.6	24	40	1000	72
AM1L-0503S-NZ	4.5-5.5	3.3	304	1000	70
AM1L-0505S-NZ	4.5-5.5	5	200	1000	72
AM1L-0509S-NZ	4.5-5.5	9	111	1000	74
AM1L-0512S-NZ	4.5-5.5	12	84	1000	77
AM1L-0515S-NZ	4.5-5.5	15	67	1000	78
AM1L-0524S-NZ	4.5-5.5	24	40	1000	73
AM1L-1203S-NZ	10.8-13.2	3.3	304	1000	75
AM1L-1205S-NZ	10.8-13.2	5	200	1000	73
AM1L-1209S-NZ	10.8-13.2	9	111	1000	75
AM1L-1212S-NZ	10.8-13.2	12	84	1000	79
AM1L-1215S-NZ	10.8-13.2	15	67	1000	80
AM1L-1224S-NZ	10.8-13.2	24	40	1000	73
AM1L-2403S-NZ	21.6-26.4	3.3	304	1000	70
AM1L-2405S-NZ	21.6-26.4	5	200	1000	72
AM1L-2409S-NZ	21.6-26.4	9	111	1000	72
AM1L-2412S-NZ	21.6-26.4	12	84	1000	83
AM1L-2415S-NZ	21.6-26.4	15	67	1000	81
AM1L-2424S-NZ	21.6-26.4	24	40	1000	80
AM1L-0505SH30-NZ	4.5-5.5	5	200	3000	70
AM1L-0509SH30-NZ	4.5-5.5	9	111	3000	75
AM1L-0512SH30-NZ	4.5-5.5	12	84	3000	78
AM1L-0515SH30-NZ	4.5-5.5	15	67	3000	80
AM1L-1205SH30-NZ	10.8-13.2	5	200	3000	72
AM1L-1209SH30-NZ	10.8-13.2	9	111	3000	76
AM1L-1212SH30-NZ	10.8-13.2	12	84	3000	79
AM1L-1215SH30-NZ	10.8-13.2	15	67	3000	81

### Models Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Efficiency (%)
AM1L-0505D-NZ	4.5-5.5	±5	±100	1000	75
AM1L-0509D-NZ	4.5-5.5	±9	±56	1000	78
AM1L-0512D-NZ	4.5-5.5	±12	±42	1000	79
AM1L-0515D-NZ	4.5-5.5	±15	±33	1000	78
AM1L-1205D-NZ	10.8-13.2	±5	±100	1000	76
AM1L-1209D-NZ	10.8-13.2	±9	±56	1000	78
AM1L-1212D-NZ	10.8-13.2	±12	±42	1000	79

### Models

#### Dual output (continue)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Efficiency (%)
AM1L-1215D-NZ	10.8-13.2	±15	±33	1000	77
AM1L-2405D-NZ	21.6-26.4	±5	±100	1000	76
AM1L-2409D-NZ	21.6-26.4	±9	±56	1000	75
AM1L-2412D-NZ	21.6-26.4	±12	±42	1000	77
AM1L-2415D-NZ	21.6-26.4	±15	±33	1000	75
AM1L-0505DH30-NZ	4.5-5.5	±5	±100	3000	72
AM1L-0509DH30-NZ	4.5-5.5	±9	±56	3000	75
AM1L-0512DH30-NZ	4.5-5.5	±12	±42	3000	78
AM1L-0515DH30-NZ	4.5-5.5	±15	±33	3000	79
AM1L-1205DH30-NZ	10.8-13.2	±5	±100	3000	74
AM1L-1209DH30-NZ	10.8-13.2	±9	±56	3000	76
AM1L-1212DH30-NZ	10.8-13.2	±12	±42	3000	78
AM1L-1215DH30-NZ	10.8-13.2	±15	±33	3000	79

### Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage range		3.0-3.6 4.5-5.5 10.8-13.2		VDC
Filter	Capacitor			

### Isolation Specifications

Parameters	Conditions	Typical	Maximum	Units
Rated voltage	60 sec	1000 & 3000		VDC
Resistance		> 1000		MOhm
Capacitance		60		pF

### Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	See the tolerance graph		±5	%
Voltage balance	Dual Output	±2		%
Short Circuit protection	1sec			
Line voltage regulation (Single)	For 1.0% of Vin		±1.2	%
Line voltage regulation (Dual)	For 1.0% of Vin		±1.2	%
Load voltage regulation (Single)	Load 10 – 100%		10	%
Load voltage regulation (Dual)	Load 10 – 100%		10	%
Temperature coefficient			±0.03	%/°C
Ripple & Noise	At 20MHz Bandwidth		75	mV p-p

### General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	100		KHz
Case temperature			+95	°C
Operating temperature	Without derating		-40 to +85	°C
Storage temperature		-55 to +125		°C
Cooling	Free air convection			
Humidity	Non Condensing		95	%
Case material		Plastic UL94-VO		

### General Specifications (continue)

Parameters	Conditions	Typical	Maximum	Units
Weight		1.5		g
Dimensions	Single 1000VDC		12.7 x 11.2 x 6.7 mm	
	Dual 1000VDC		15.2 x 11.2 x 6.7 mm	
	Single and Dual 3000VDC		15.24 x 11.2 x 6.7 mm	
MTBF	>980 000 hrs single, 1 000 000hrs dual (MIL-HDBK -217F, Ground Benign, t+=25°C)			

### Safety Specifications

#### Standards

Agency approvals	cULus (for 3000VDC Isolated models)
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### Pin Out Specifications

#### 1000VDC

Pin	Single
1	- V Input
2	+ V Input
3	N. C.
4	- V Output
5	+V Output
6	N.C.
7	N.C.
8	N.C.

#### 3000VDC

Pin	Dual
1	- V Input
2	+ V Input
3	N.C.
4	Common
5	- V Output
6	N.C.
7	+V Output
8	N.C.
9	N.C.
10	N.C.

### External capacitor – Single output

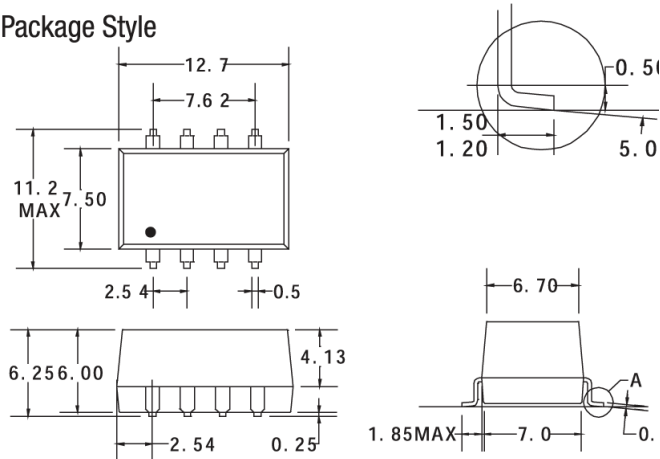
Vin (VDC)	External capacitor (µF)	Vout (VDC)	External capacitor (µF)
5	4.7	5	10
12	2.2	9	4.7
24	1	12	2.2
-	-	15	1

### External capacitor – Dual output

Vin (VDC)	External capacitor (µF)	Vout (VDC)	External capacitor (µF)
5	4.7	5	4.7
12	2.2	9	2.2
24	1	12	1
-	-	15	0.47

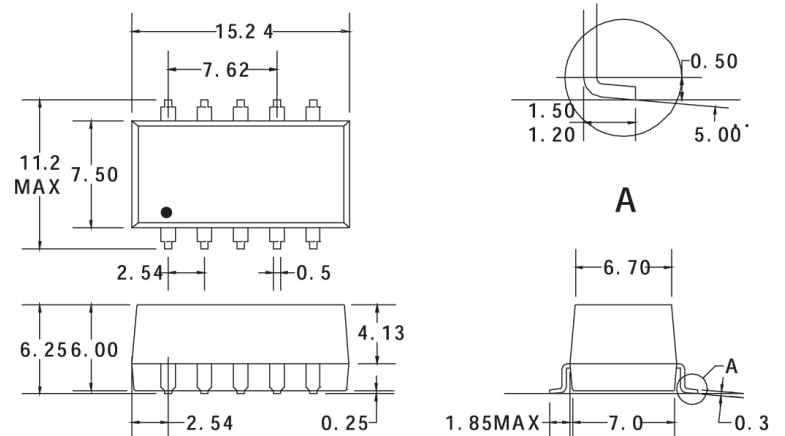
### Dimensions Single 1000VDC

#### Package Style



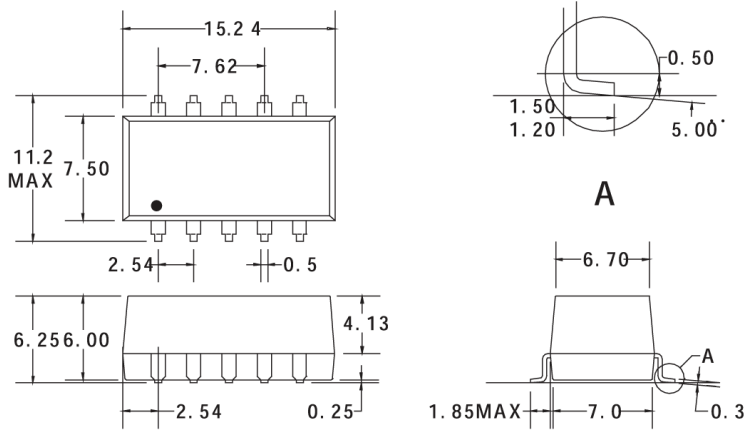
All dimensions in mm. All pins on a 2.54 mm pitch. Tolerance: ±0.25mm

### Dimensions Single and Dual 3000VDC



All dimensions in mm. All pins on a 2.54mm pitch. Tolerance: ±0.25mm

**Dimensions Dual 1000VDC**



All dimensions in mm. All pins on a 2.54mm pitch.  
Tolerance:  $\pm 0.25$ mm

**Tolerance Graph**

