

## 1000Vdc Isolation 1 Watt Single Output Surface Mount Dc-Dc Converter



### Features:

- Small Footprint
- 14PIN SMD Package
- High Efficiency up to 80%
- Unregulated Output Types
- High Power Density
- No External Component Required
- Operating Temperature:-40°C TO +85°C
- Industry Standard Pinout



Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

Part Number	Output Voltage	Output Current	% EFF.
	Vdc	mA	%TYP
13DS3-XXS03NNL	3.3	303	65
13DS3-XXS05NNL	5	200	70
13DS3-XXS09NNL	9	111	75
13DS3-XXS12NNL	12	84	78
13DS3-XXS15NNL	15	67	80

Note:1."XX" Is Input Voltage: 03=3.3Vdc,05=5Vdc,09=9Vdc,12=12Vdc,15=15Vdc. 2. The input voltage increases, there will be an increase in efficiency.

### Input Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	Vo, Io Nom			±10	%
Filter	Capacitor				

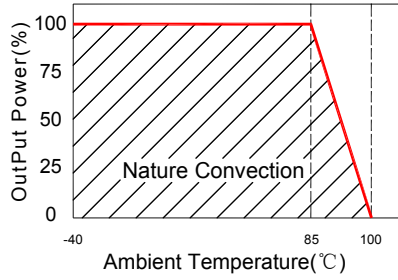
### Output Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	100% full load			±5	%
Short Circuit Protection	Short Term			1 Sec	
Line Regulation	For 1.0% OF Vin		1.2		%
Load Regulation	3.3V (10% To 100% F.L)		15		%
Load Regulation	5V,9V(10% To 100% F.L)			15&9.0	%
Load Regulation	12V,15 V(10% To 100% F.L)			7.5&7.0	%
Ripple & Noise	BW=DC To 20MHz			100	mVp-p
Transient response setting time	50% load step change		350		us

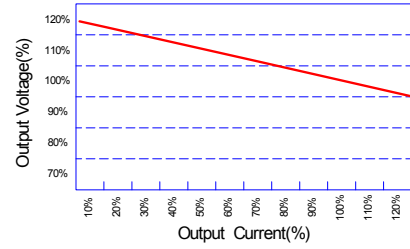
### General Specifications

Parameters	Conditions	Min	Typ	Max	Units
Isolation Resistance	500Vdc	1000			MΩ
Switching Frequency	Full load,nominal input		100		KHz
Operating Temperature		-40		85	°C
Humidity	Non Condensing			95	%
Cooling	Free air Convection				
Case material	DAP				
MTBF	MIL-HDBK-217F@25°C	3500000			Hours
Weight			1.0		g
Dimensions			12.7x7.6x6.25		mm

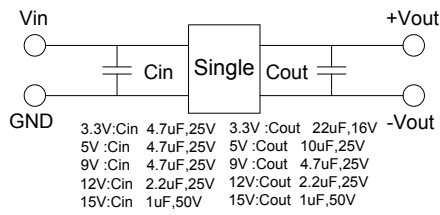
### Temperature Derating Graph



### Tolerance Envelope Graph



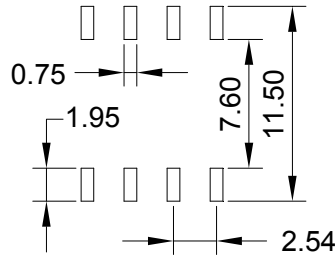
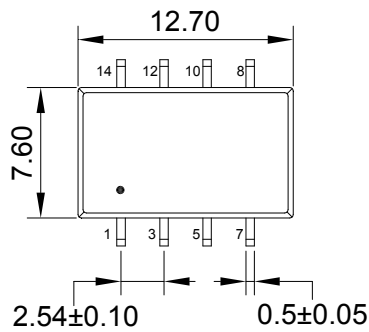
### Recommended Test Circuit



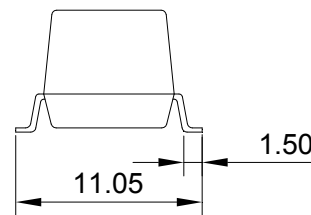
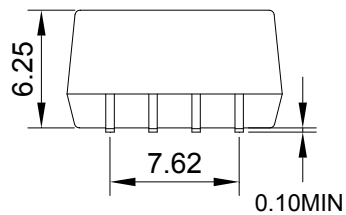
### Part Number

**13DS3 - 05 S 05 N NL**  
**A B C D E F**  
 A: Series  
 B: Input Voltage  
 C: Single(S)  
 D: Output Voltage  
 E: Unregulated(N)  
 F: RoHS Version

### Markings and Dimensions



SUGGESTED PAD LAYOUT



UNIT: mm Unless otherwise specified, all tolerances are  $\pm 0.25$

### PIN Connection

Pin	1	3	7	8	Other
Single	-Vin	+Vin	-Vout	+Vout	NC