



## 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	Efficiency
	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

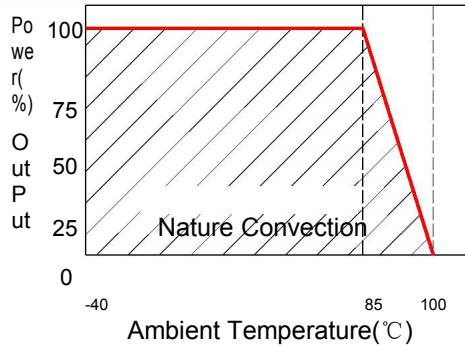
Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	100% full load			±5	%
Short Circuit Protection	Short Term			1 Sec	
Line Regulation	For 1.0% OF Vin		1.2		%
Load Regulation	3.3V (10% To 100% F.L)		15		%
Load Regulation	5V, 9V (10% To 100% F.L)			15&9.0	%
Load Regulation	12V, 15V (10% To 100% 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

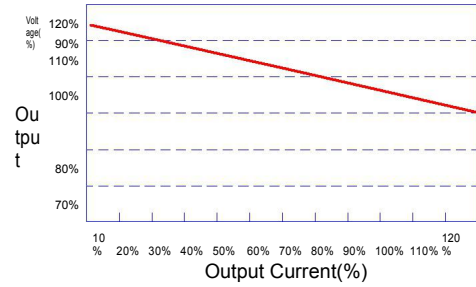
Parameters	Conditions	Min	Typ	Max	Units
Isolation Resistance	500Vdc	1000			MΩ
Switching Frequency	Full load, nominal input		100		KHz
Operating Temperature		-40		85	°C
Humidity	Non Condensing			95	%
Cooling	Free air Convection				
Case material	DAP				
MTBF	MIL-HDBK-217F@25°C	3500000			Hours
Weight		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

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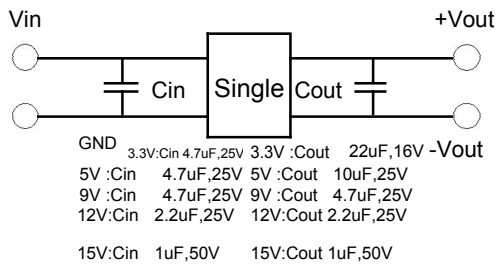
**Temperature Derating Graph**



**Tolerance Envelope Graph**



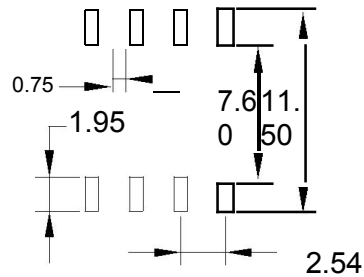
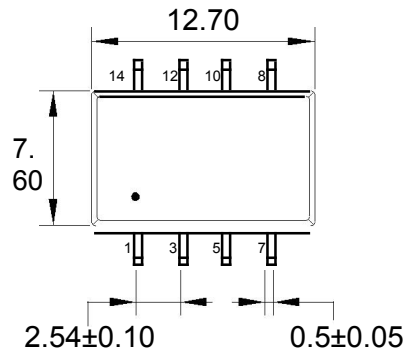
**Recommended Test Circuit**



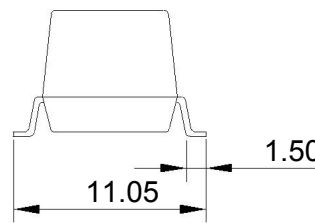
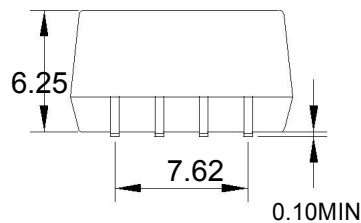
**Part Number**

**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 ±0.25

**PIN Connection**

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