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With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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NOT RECOMMENDED

NMXSO Series

FOR NEW DESisolated 5W Regulated Single & Dual Output DC/DC Converters



FEATURES

- RoHS compliant
- Single or dual output
- 1kVDC isolation
- Pin compatible with NMXU series
- Power density 0.53W/cm³
- UL 94V-0 package material
- Footprint 9.52cm²
- Industry standard pinout
- 5V & 12V input
- 5V & 15V output
- Short circuit protected
- Internal SMD construction
- Fully encapsulated with toroidal magnetics
- Output regulation 0.5%
- PCB mounting

DESCRIPTION

The NMXSO series of DC/DC converters is particularly suited to isolating and/or converting DC power rails. The galvanic isolation allows the device to be configured to provide an isolated negative rail in systems where only positive rails exist. The devices are particularly suited for use in distributed power systems where there is low variation in the bus voltage levels.

SELECTION GUII	DE							
Order Code	Nominal Input Voltage	Output Voltage	Output Current	Efficiency Typ.	Isolation Capacitance	Output Power	MTTF	
	V	V	Α	%	pF	W	kHrs	
NMXD1215SOC	12	±15	±0.2	65	65.7	6.0	61	
NMXS0505SOC	5	5	1.0	65	37.4	5.0	811	
NMXS1205S0C	12	5	1.0	65	46.6	5.0	177	
		(Obsolete					Recommended Alternative
NMXD0505SOC	5	±5	±0.5	65	30.5	5.0	565	BWR-5/700-D5A-C
NMXD0515S0C	5	±15	±0.2	65	36.6	6.0	83	NCS6D1215C
NMXD1205SOC	12	±5	±0.5	65	40.5	5.0	162	BWR-5/900-D12A-C
NMXS0515S0C	5	15	0.4	65	33.3	6.0	157	UWR-15/530-D5A-C
NMXS1215SOC	12	15	0.4	65	60.0	6.0	93	UWR-15/665-D12A-C
NMXD0512SOC			Obsolete	,		r	ı/a	
NMXD1212SOC	Obsolete, re	ecommend	ed alternat	ive: (click fo	r data sheet)	NCS6	D1212C	
NMXS0512S0C			Obsolete			r	1/a	

When operated with additional external load capacitance the rise time of the input voltage will determine the maximum external capacitance value for guaranteed start up. The slower the rise time of the input voltage the greater the maximum value of the additional external capacitance for reliable start up.

INPUT CHARACTERISTI	CS				
Parameter	Conditions	Min.	Тур.	Max.	Units
Voltogo rongo	Continuous operation, 5V input types	4.5	.5 5.0 5.5		
Voltage range	Continuous operation, 12V input types	10.8	12.0	13.2	V
Reflected ripple voltage	BW=DC to 20MHz, all output types			150	mV

OUTPUT CHARACTERIST	rics				
Parameter	Conditions	Min.	Тур.	Max.	Units
Rated power	T _A = 0°C to 70°C			5.0	W
Voltage output accuracy				±3	%
Line regulation	High V _{IN} to low V _{IN}			±0.5	%
Load Regulation	10% load to rated load			0.5	%
Ripple and Noise	BW=DC to 20MHz, all output types			150	mV p-p

ABSOLUTE MAXIMUM RATINGS				
Short-circuit protection ²	15 seconds			
Lead temperature 1.5mm from case for 10 seconds	300°C			
Input voltage V _{IN} , NMXS005 types	7V			
Input voltage V _{IN} , NMXSO12 types	15V			

- ${\bf 1.} \ {\bf Calculated} \ {\bf using} \ {\bf MIL\text{-}HDBK\text{-}217F} \ with \ nominal \ input \ voltage \ at \ full \ load.$
- 2. Supply voltage must be disconnected at the end of the short circuit duration.

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





NMXSO Series

Isolated 5W Regulated Single & Dual Output DC/DC Converters

ISOLATION CHARACTERI	STICS				
Parameter	Conditions	Min.	Тур.	Max.	Units
Isolation test voltage	Flash tested for 1 second	1000			VDC
Resistance	Viso= 1000VDC	1			GΩ

GENERAL CHARACTERISTIC	S				
Parameter	Conditions	Min.	Тур.	Max.	Units
Switching frequency	All input types		70		kHz

TEMPERATURE CHARACTERIS	STICS				
Parameter	Conditions	Min.	Тур.	Max.	Units
Specification	All output types	0		70	
Storage		-55		100	°C
Case Temperature above ambient	All output types		30		
Cooling	Free air convection				

Rohs Compliance Information



This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300°C for 10 seconds. The pin termination finish on this product series is Matte Tin over Nickel Preplate. The series is backward compatible with Sn/Pb soldering systems.

For further information, please visit www.murata-ps.com/rohs

TECHNICAL NOTES

ISOLATION VOLTAGE

'Hi Pot Test', 'Flash Tested', 'Withstand Voltage', 'Proof Voltage', 'Dielectric Withstand Voltage' & 'Isolation Test Voltage' are all terms that relate to the same thing, a test voltage, applied for a specified time, across a component designed to provide electrical isolation, to verify the integrity of that isolation.

Murata Power Solutions NMXSO series of DC/DC converters are all 100% production tested at their stated isolation voltage. This is 1kVDC for 1 second.

A question commonly asked is, "What is the continuous voltage that can be applied across the part in normal operation?"

For a part holding no specific agency approvals, such as the NMXSO series, both input and output should normally be maintained within SELV limits i.e. less than 42.4V peak, or 60VDC. The isolation test voltage represents a measure of immunity to transient voltages and the part should never be used as an element of a safety isolation system. The part could be expected to function correctly with several hundred volts offset applied continuously across the isolation barrier; but then the circuitry on both sides of the barrier must be regarded as operating at an unsafe voltage and further isolation/insulation systems must form a barrier between these circuits and any user-accessible circuitry according to safety standard requirements.

REPEATED HIGH-VOLTAGE ISOLATION TESTING

It is well known that repeated high-voltage isolation testing of a barrier component can actually degrade isolation capability, to a lesser or greater degree depending on materials, construction and environment. The NMXSO series has toroidal isolation transformers, with no additional insulation between primary and secondary windings of enameled wire. While parts can be expected to withstand several times the stated test voltage, the isolation capability does depend on the wire insulation. Any material, including this enamel (typically polyurethane) is susceptible to eventual chemical degradation when subject to very high applied voltages thus implying that the number of tests should be strictly limited. We therefore strongly advise against repeated high voltage isolation testing, but if it is absolutely required, that the voltage be reduced by 20% from specified test voltage.

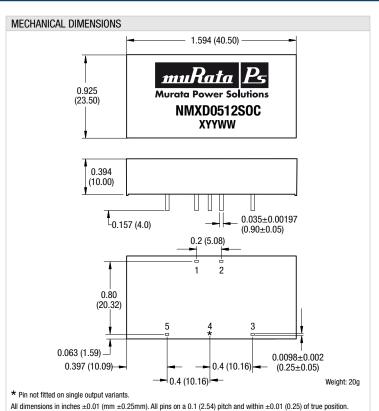
This consideration equally applies to agency recognized parts rated for better than functional isolation where the wire enamel insulation is always supplemented by a further insulation system of physical spacing or barriers.



NMXSO Series

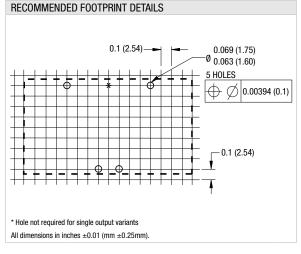
Isolated 5W Regulated Single & Dual Output DC/DC Converters

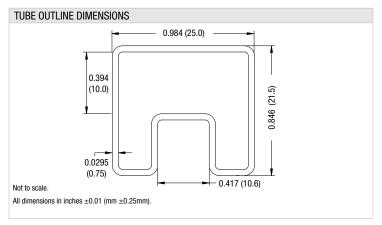
PACKAGE SPECIFICATIONS



PIN CONNECTIONS Single Output Variants Pin Function 1 -VIN 2 +VIN 3 +VOUT 4 Not fitted 5 -VOUT

Dual Ou	Dual Output Variants		
Pin	Pin Function		
1	-V _{IN}		
2	+VIN		
3	+V out		
4	Common		
5	-Vout		





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This product is subject to the following <u>operating requirements</u> and the <u>Life and Safety Critical Application Sales Policy:</u>
• Refer to: http://www.murata-ps.com/requirements/

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