features

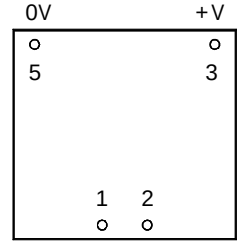
- Industry Standard Pinout
- Pin Compatible with NMXSO
- 1kVDC Isolation
- Single or Dual Output
- Low Profile Package
- Efficiency to 85%
- Power Density 0.85W/cm^3
- 5V & 12V Input
- 5V, 12V and 15V Output
- Footprint 5.88 cm^2
- UL 94V-0 Package Material
- No Heatsink Required
- Internal SMD Construction
- Toroidal Magnetics
- Fully Encapsulated
- No External Components Required
- MTTF up to 900 Thousand Hours
- PCB Mounting
- Custom Solutions Available

description

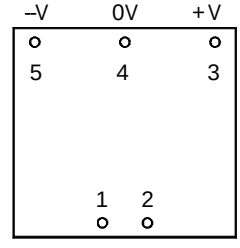
The NMXU ultra-miniature 5W DC-DC Converters offer an extremely small package whilst maintaining an industry-standard footprint. The four-fold increase in power density over 2'' square devices releases over 19cm^2 of board area when upgrading. The devices are particularly suited for use in distributed power systems where there is low variation in the bus voltage levels.

pin connections

Single Output Type (top view)



Dual Output Type (top view)



absolute maximum ratings over operating free air* temperature range

Input voltage V_{IN} NMX05 types	7V
Input voltage V_{IN} NMX12 types	15V
Output power	5W
Isolation voltage (flash tested for 1 second)	1000VDC
Operating free air temperature range	0°C to 70°C
Storage temperature range	–55°C to 100°C
lead temperature 1.5mm from case for 10 seconds	300°C
Short circuit protection	1 second max.

electrical specifications

(measured at T_A=25°C, at nominal input voltage)

Input voltage range NMX05 types	5V±10%
Input voltage range NMX12 types	12V±10%
Load voltage regulation (10% to 100% full load)	
5V output types	7% typ. 12% max.
12V and 15V output types	5% typ. 7.5% max.
Line voltage regulation (10% to 100% full load)	1.1%
Output voltage accuracy	See tolerance envelope graph
Input reflected ripple (20MHz Band Limited)	200mV p-p max.
Output ripple (20 MHz Band limited)	125mV p-p max.
Insulation resistance at 1000VDC	1000MΩ min.
Efficiency at full load	85% typ. 75% min.
Temperature rise above ambient at full load	
5V output types	30°C typ.
12V and 15V output types	20°C typ.
Weight (typical)	10 grams
Switching frequency at full load (typical)	70kHz
No load power consumption (typical)	500mW

* Free air – requires a minimum of 10mm air space around the component.

selection guide

single output types - 5V and 12V input types

Part Number	Output Voltage (V)	Output Current Each Output (mA)	Package Style
NMXSXX05U	5	1000	1
NMXSXX12U	12	417	
NMXSXX15U	15	333	

dual output types - 5V and 12V input types

Part Number	Output Voltage (V)	Output Current Each Output (mA)	Package Style
NMXDXX05U	±5	500	2
NMXDXX12U	±12	208	
NMXDXX15U	±15	167	

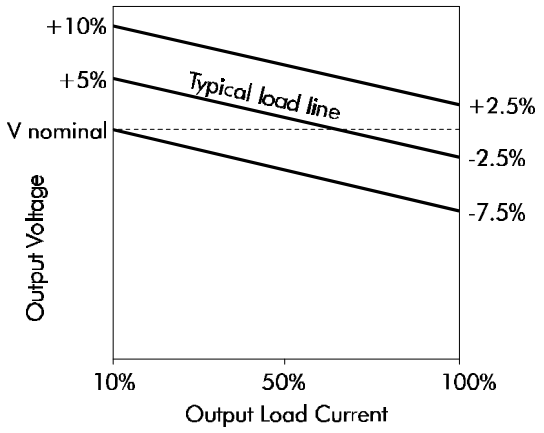
typical isolation capacitance (pF)

Part Number	Output Voltage (V)		
	05	12	15
NMXS05XXU	30.6	31.2	32.6
NMXD05XXU	31.5	33.0	34.2
NMXS12XXU	32.5	51.9	54.1
NMXD12XXU	34.7	52.9	59.9

Note : All data taken at $T_A = 25°C$.

typical characteristics

tolerance envelope



Note : All data taken at $T_A = 25°C$.

mean time to failure (MTTF) in thousands of hours

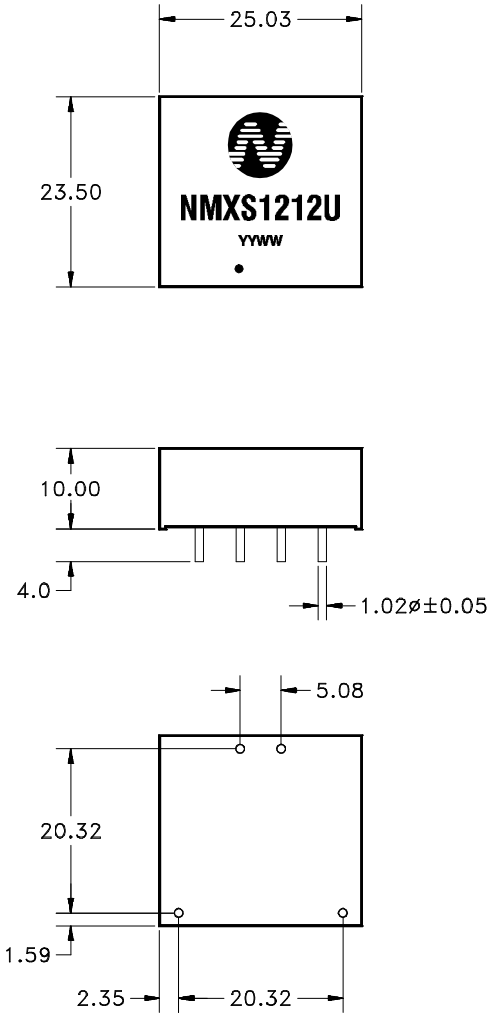
Part Number	–25°C	25°C	70°C
NMXS0505U	913	792	694
NMXD0505U	907	779	673
NMXS0512U	179	158	140
NMXD0512U	179	158	140
NMXS0515U	98	86	77
NMXD0515U	98	86	77
NMXS1205U	269	233	205
NMXD1205U	269	233	205
NMXS1212U	122	107	94
NMXD1212U	122	107	94
NMXS1215U	78	68	61
NMXD1215U	78	68	61

Note : MTTF figures derived from hybrid model of MIL-HDBK-217F.

outline dimensions

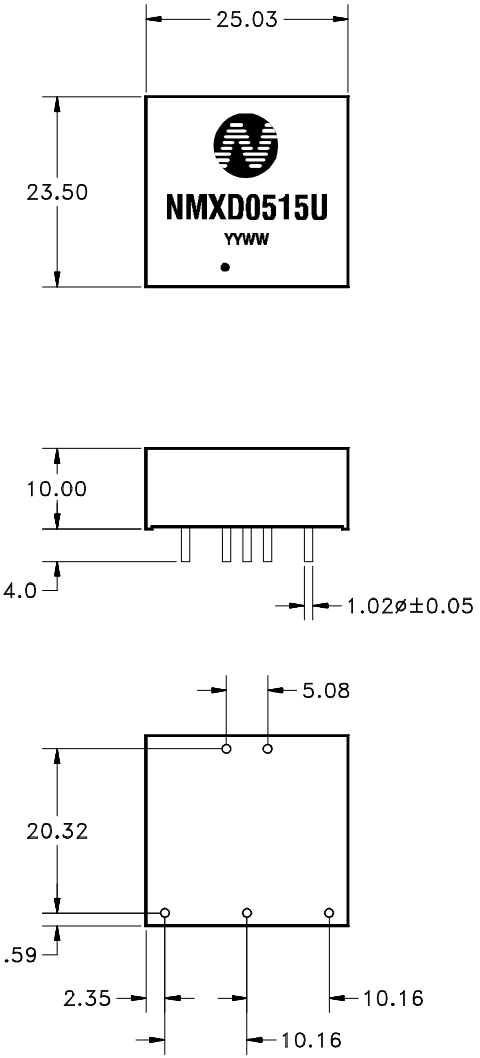
single output types

1



dual output types

2



recommended footprint details