204-4006

NFC10 SERIES
10 Watt High Density DC/DC Converters

- Delivers 10 watts in a 71°C ambient temperature
- Small 1" × 2" × 0.375" package
- Single and dual outputs
- Rugged construction, easy to mount
- 2:1 wide range input voltage
- Overvoltage protection
- Short circuit protection with auto-recovery
- Two-year warranty

NOT RECOMMENDED FOR NEW DESIGNS

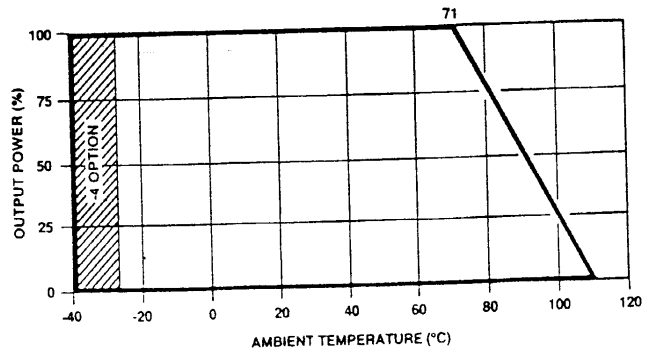
The NFC10 series are high density DC/DC converters suitable for telecom and industrial applications. These converters will deliver a full 10 watts of output power in a 71 C ambient temperature. Their small 1" × 2" × 0.375" size conserves usable PCB area and makes compact systems possible. Their wide input voltage range allows them to be powered from 12VDC, 24VDC or 48VDC distributed power systems.

Both single and dual output versions are available, and can be ordered for guaranteed operation down to −40°C (optional).

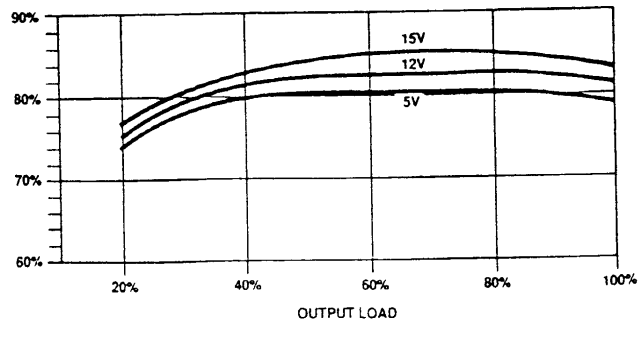
Model Number[1]	Input Voltage	Input[2] Current (max)	Output Voltage	Output Current[3] (min)	(max)	OVP[4] (typ)	Efficiency (typ)	Error Band[5]
NFC10-12S05	12V	1.09A	5.0V	.2	2A	6.2V	79%	±3% max
NFC10-12S12	12V	1.06A	12V	.08	.83A	15V	82%	±3% max
NFC10-12S15	12V	1.06A	15V	.07	.67A	18V	82%	±3% max
*NFC10-12D12	12V	1.06A	+12V −12V	.04 .04	.416A .416A	30V (total)	81%	±5% max ±5% max
NFC10-12D15	12V	1.06A	+15V −15V	.03 .03	.333A .333A	36V (total)	81%	±5% max ±5% max
NFC10-24S05	24V	.55A	5.0V	.2	2A	6.2V	81%	±3% max
NFC10-24S12	24V	.53A	12V	.08	.83A	15V	84%	±3% max
NFC10-24S15	24V	.53A	15V	.07	.67A	18V	84%	±3% max
*NFC10-24D12	24V	.52A	+12V −12V	.04 .04	.416A .416A	30V (total)	82%	±5% max ±5% max
NFC10-24D15	24V	.52A	+15V −15V	.03 .03	.333A .333A	36V (total)	82%	±5% max ±5% max
NFC10-48S05	48V	.27A	5.0V	.2	2A	6.2V	82%	±3% max
NFC10-48S12	48V	.26A	12V	.08	.83A	15V	86%	±3% max
NFC10-48S15	48V	.26A	15V	.07	.67A	18V	86%	±3% max
NFC10-48D12	48V	.26A	+12V −12V	.04 .04	.416A .416A	30V (total)	84%	±5% max ±5% max
NFC10-48D15	48V	.26A	+15V −15V	.03 .03	.333A .333A	36V (total)	84%	±5% max ±5% max

Notes:
(1) For guaranteed operation at −40°C, please add "-4" to any of these model numbers. Please contact the factory for availability.
(2) Maximum input current at 12.0V, 24.0V or 48.0V input voltage.
(3) No-load operation is allowed, but the output voltage may exceed the error band value.
(4) OverVoltage Protection threshold. Any output overvoltage is clamped at the given value.
(5) Error band is defined as the static output regulation at 25°C, including initial setting accuracy, line voltage within stated limits, and load currents within stated limits.

OPERATING TEMPERATURE LIMITS AND OUTPUT POWER RANGE



TYPICAL EFFICIENCY VS. OUTPUT LOAD
12V INPUT



PRODUCT SPECIFICATIONS(6)

Parameter	Conditions	Limits
Input Voltage Range	12V nominal 24V nominal 48V nominal	9 to 18VDC 18 to 36VDC 36 to 72VDC
Input Surge Protection	12V input 24V input 48V input	25V for 100mS 50V for 100mS 100V for 100mS
Input Filter		Pi type
Output Voltage Setting Accuracy		±0.5%
Line Regulation	Full input range	±1.0%
Load Regulation	100% to 10%	Singles ±1.0% Duals ±2.0%
Temp Coefficient		±0.02%/C
Voltage Stability	24 hours	±0.05% max
Transient Response	25% load step	2% deviation, with recovery to 1% of final value in 500 µS
Output Noise and Ripple	20MHz bandwidth Single output Dual outputs	 50mV P-P, 20mV RMS 75mV P-P, 20mV RMS
Overshoot/Undershoot	Turn-on	None
Short Circuit Protection	Automatic recovery	Continuous
Total Output Power		10 watts maximum
Isolation Voltage		500VAC, 710 VDC min
Isolation Resistance		10^8 ohms min
Switching Frequency	Normal operation	400kHz ±10%
Altitude	Operating Non-operating	10,000 feet max 40,000 feet max
Temperature	Operating ambient temperature Standard models "-4" models Case temperature Non-operating	 −25°C to +71°C −40°C to +71°C +110°C maximum −55°C to +125°C
Relative Humidity	Non-condensing	5% to 95%
Vibration	Three orthogonal axes, randon vibration, 10 minute test for each axis	2.4G rms (appx) 5 Hz to 500 Hz
Weight		26 grams
Case Material		Black coated six-sided metal case with non-conductive base
Flammability		UL 94V-0 materials

Notes:
(6) All specifications are typical at nominal input, 25°C, unless otherwise noted.
(7) Do not exceed maximum case temperature under any conditions. For guaranteed operation at −40°C, please add "-4" to any of the model numbers shown on the first page. These are special order products; contact the factory for availability details.
(8) Pin connections:
Single output: 1 +input; 2 −input; 3 +output; 4 (no pin); 5 −output
Dual output: 1 +input; 2 −input; 3 +output; 4 common; 5 −output