



### FEATURES

- ◆ 1kVDC Isolation
- ◆ Internal SMD Construction
- ◆ UL94V-0 Package Material
- ◆ Toroidal Magnetics
- ◆ Efficiency to 85%

### MODEL SELECTION

2A<sup>①</sup>05<sup>②</sup>05<sup>③</sup>N<sup>④</sup>X<sup>⑤</sup>T<sup>⑥</sup>

- ① Product Series
- ② Input Voltage
- ③ Output Voltage
- ④ No Pin
- ⑤ Fixed Input
- ⑥ SMD Package

### APPLICATIONS

Compared to standard 2 Watt packages, space savings of 80% respectively 77% are achieved by these 2A-NXT&2B-NXT SMD Miniature DC/DC Converters. They have been specifically designed for applications where board space is at a premium, since these 2 Watt converters have only a slightly larger foot print than conventional 1 Watt converters.

At efficiencies up to 80%, external cooling is not needed, as the full output power is available over the operating temperature range -40°C to +85°C. All converters have an I/O-Isolation of 1kVDC, allowing making them suitable for many applications.



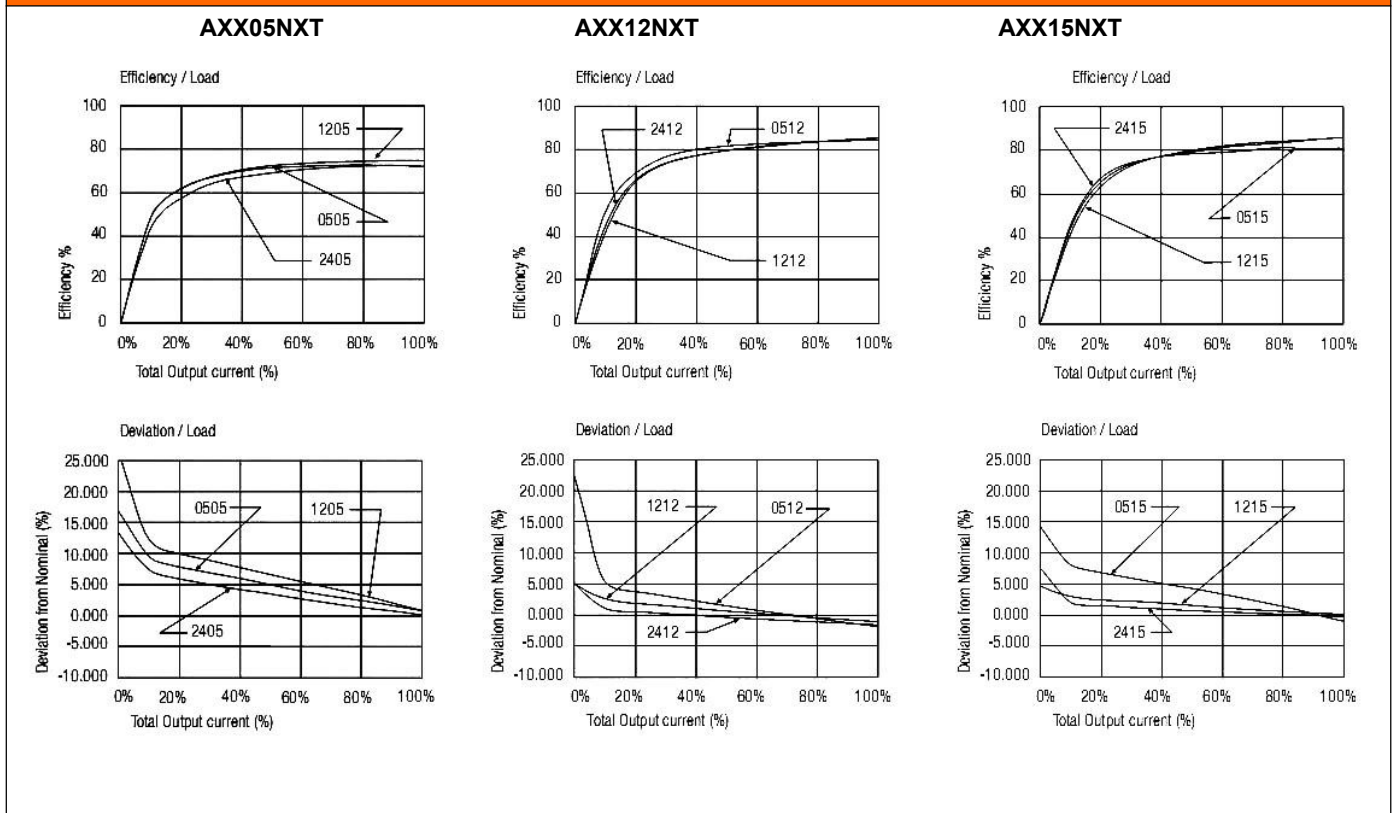
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### SELECTION GUIDE

Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)
2B0503NXT	5	3.3	606	70-75
2B0903NXT	9	3.3	606	70-75
2B1203NXT	12	3.3	606	70-75
2B1503NXT	15	3.3	606	70-75
2B2403NXT	24	3.3	606	70-75
2B0505NXT	5	5	400	80-85
2B0905NXT	9	5	400	80-85
2B1205NXT	12	5	400	80-85
2B1505NXT	15	5	400	80-85
2B2405NXT	24	5	400	80-85
2B0509NXT	5	9	222	80-85
2B0909NXT	9	9	222	80-85
2B1209NXT	12	9	222	80-85
2B1509NXT	15	9	222	80-85
2B2409NXT	24	9	222	80-85
2B0512NXT	5	12	167	80-85
2B0912NXT	9	12	167	80-85
2B1212NXT	12	12	167	80-85
2B1512NXT	15	12	167	80-85
2B2412NXT	24	12	167	80-85
2B0515NXT	5	15	133	80-85
2B0915NXT	9	15	133	80-85
2B1215NXT	12	15	133	80-85
2B1515NXT	15	15	133	80-85
2B2415NXT	24	15	133	80-85
2B0524NXT	5	24	83	80-85
2B0924NXT	9	24	83	80-85
2B1224NXT	12	24	83	80-85
2B1524NXT	15	24	83	80-85
2B2424NXT	24	24	83	80-85
2A0505NXT	5	±5	±200	70-75
2A0905NXT	9	±5	±200	70-75
2A1205NXT	12	±5	±200	70-75
2A1505NXT	15	±5	±200	70-75
2A2405NXT	24	±5	±200	70-75
2A0509NXT	5	±9	±111	75-78
2A0909NXT	9	±9	±111	75-78
2A1209NXT	12	±9	±111	75-78
2A1509NXT	15	±9	±111	75-78
2A2409NXT	24	±9	±111	75-78
2A0512NXT	5	±12	±83	75-83
2A0912NXT	9	±12	±83	75-83
2A1212NXT	12	±12	±83	75-83
2A1512NXT	15	±12	±83	75-83
2A2412NXT	24	±12	±83	75-83
2A0515NXT	5	±15	±66	75-85
2A0915NXT	9	±15	±66	75-85
2A1215NXT	12	±15	±66	75-85
2A1515NXT	15	±15	±66	75-85
2A2415NXT	24	±15	±66	75-85
2A0524NXT	5	±24	±42	78-85
2A0924NXT	9	±24	±42	78-85
2A1224NXT	12	±24	±42	78-85
2A1524NXT	15	±24	±42	78-85
2A2424NXT	24	±24	±42	78-85

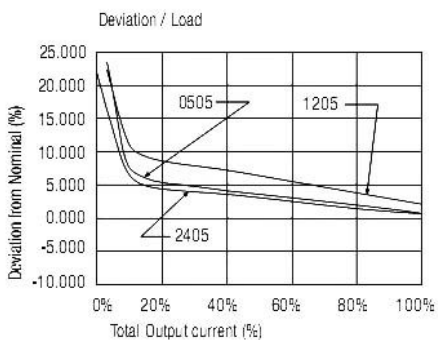
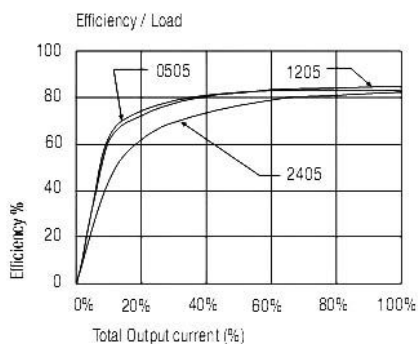
Specifications (Core Operating Area)		
Input Voltage Range		±10
Output Voltage Accuracy		±5
Line Voltage Regulation		1.2%/1% of Vin max.
Load Voltage Regulation (10% to 100% full load)	3.3V output types 5V output type 9V, 12V, 15V, 24V output types	20% max. 15% max. 10% max.
Output Ripple and Noise (20MHz limited)		150mVp-p max.
Operating Frequency		20kHz min. / 50kHz typ. / 85kHz max.
Efficiency at Full Load		70% min. / 80% typ.
No Load Power Consumption	B-NXT typ. A-NXT typ.	124mW min. / 186mW typ. / 250mW max. 159mW min. / 192mW typ. / 240mW max.
Isolation Voltage	(tested for 1 second)	1000VDC min.
Rated Working Voltage	(long term isolation)	see Application Notes
Isolation Capacitance		40pF min. / 115pF max.
Isolation Resistance		10 GΩ min.
Short Circuit Protection		1 Second
Operating Temperature Range (free air convection)		-40°C to +85°C (see Graph)
Storage Temperature Range		-55°C to +125°C
Reflow Temperature ROHS compliant (for more details see Application Notes)		245°C (30 sec) max.
Relative Humidity	MSL Level 1	95% RH
Package Weight	B-NXT types A-NXT types	2.1g 2.5g
MTBF (+25°C) (+85°C)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F using MIL-HDBK 217F
		886 x 10 <sup>3</sup> hours 128 x 10 <sup>3</sup> hours

### Typical Characteristics

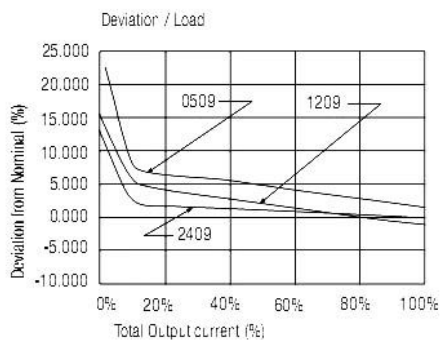
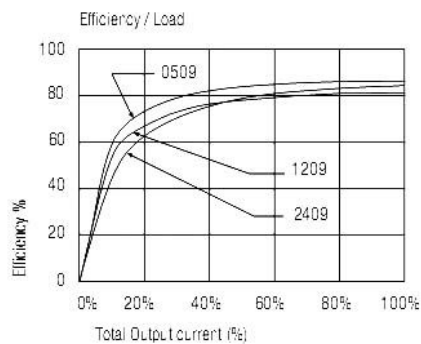


**Typical Characteristics**

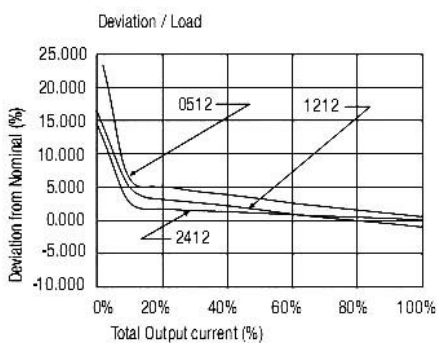
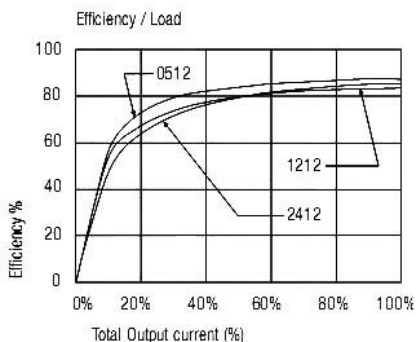
**BXX05NXT**



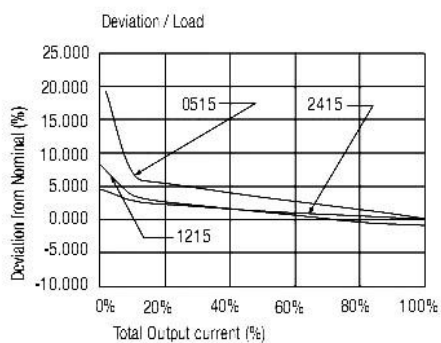
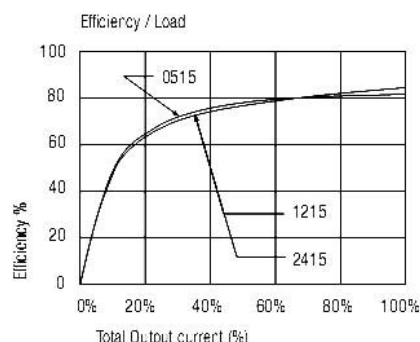
**BXX09NXT**



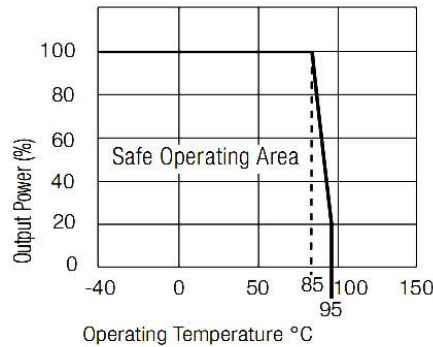
**BXX12NXT**



**BXX15NXT**

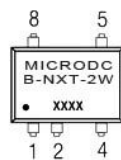
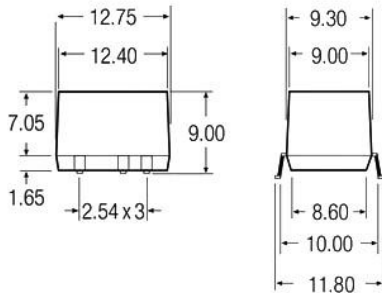


### Derating-Graph(Ambient Temperature)

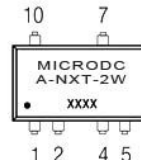
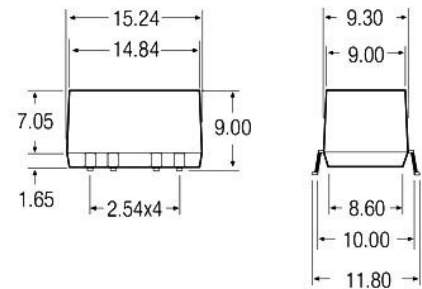


### Package Style and Pinning (mm)

#### 8 PIN Single SMD Package



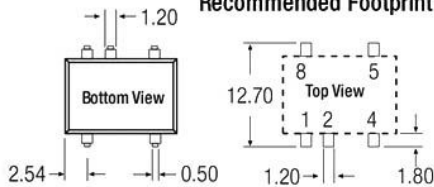
#### 10 PIN Dual SMD Package



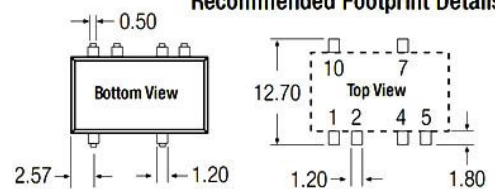
#### Pin Connections

Pin #	Single	Dual
1	-V <sub>in</sub>	-V <sub>in</sub>
2	+V <sub>in</sub>	+V <sub>in</sub>
4	-V <sub>out</sub>	Com
5	+V <sub>out</sub>	-V <sub>out</sub>
7	No Pin	+V <sub>out</sub>
8	NC	No Pin
10	No Pin	NC

#### Recommended Footprint Details



#### Recommended Footprint Details



NC = No Connection  
 XX.X ± 0.5 mm  
 XX.XX ± 0.25 mm