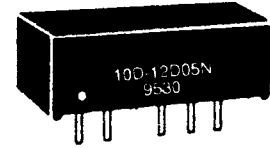


## 10D/12D SERIES 1 WATT MINIATURE SIP DC/DC CONVERTERS

**FEATURES**

- Up to 1 watt output power
- 7 pin SIP package
- 500 VDC/\*3000 VRMS isolation available
- Unregulated output types



**GENERAL SPECIFICATIONS**

- Output ripple & noise — 100mVp-p(20KHz B.W.)
- Isolation resistance — 100MΩ min @ 500VDC
- Switching frequency — 20KHz min
- Operating temperature — 0°C to 70°C

**ELECTRICAL SPECIFICATIONS**

- Input voltage range — ± 5%
- Output voltage tolerance — ± 5%
- Line regulation — ± 1.2%
- Load regulation — ± 10%

Ordering Code: 10D = Pin option 1 (500V isolation)  
 12D = Pin option 2 (3000VRMS isolation)

(typical at nominal input, rated load, and 25°C unless otherwise specified)

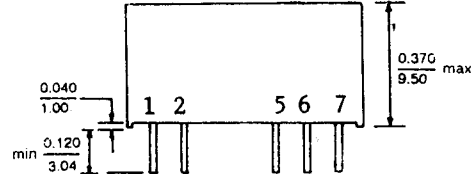
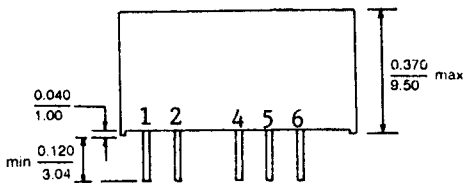
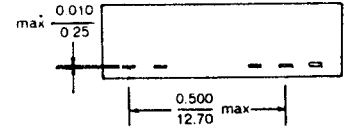
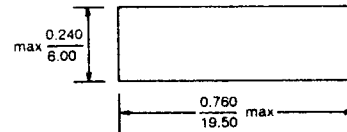
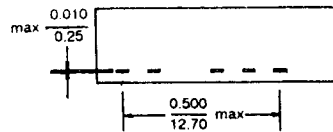
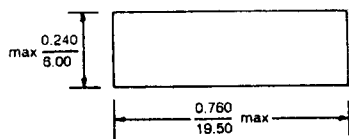
Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (% Typ.)
1XD-05S05N	5	5	200	70
1XD-05S09N	5	9	110	75
1XD-05S12N	5	12	85	75
1XD-05S15N	5	15	66	75
1XD-05D05N	5	± 5	± 100	70
1XD-05D12N	5	± 12	± 42	75
1XD-05D15N	5	± 15	± 33	75
1XD-12S05N	12	5	200	70
1XD-12S09N	12	9	110	75
1XD-12S12N	12	12	85	75
1XD-12S15N	12	15	66	75
1XD-12D05N	12	± 5	± 100	70
1XD-12D12N	12	± 12	± 42	75
1XD-12D15N	12	± 15	± 33	75

S = Single Output D = Dual Output R = Regulated N = Unregulated

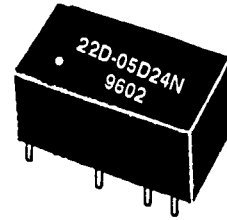
- Other outputs available; contact CET for details.

**Pin Option 1 10D-xxxxx**

**Pin Option 2 12D-xxxxx**



## 22D/26D SERIES 1 WATT 14 PIN DIL DC/DC CONVERTERS



### FEATURES

- Up to 1 watt output power
- 14 pin DIL package
- 1000 VDC/\*3000 VDC isolation available
- Unregulated and regulated output types

### GENERAL SPECIFICATIONS

- Output ripple & noise — 150mVp-p(20KHz B.W.)
- Isolation resistance — 1000MΩ Min @ 500VDC
- Switching frequency — 20KHz min
- Operating temperature — 0°C to 70°C
- Short circuit protection — short term/\*1 sec.

### ELECTRICAL SPECIFICATIONS

- Input voltage range —  $\pm 10\%$
- Output voltage tolerance —  $\pm 5\%$
- Line regulation (10% to 100% F.L.) —  $\pm 1.2\%$  of  $V_{in}$
- Load regulation (10% to 100% F.L.)
  - 5V output types: 15% max.
  - 9V, 12V, and 15V output types: 10% max.

Ordering Code: 22D = pin option 1 (1000V isolation)  
26D = Pin option 2 (3000VRMS isolation)

**Note:** 22D series is short term circuit protection  
26D series is 1 sec. circuit protection

(typical at nominal input, rated load, and 25°C unless otherwise specified)

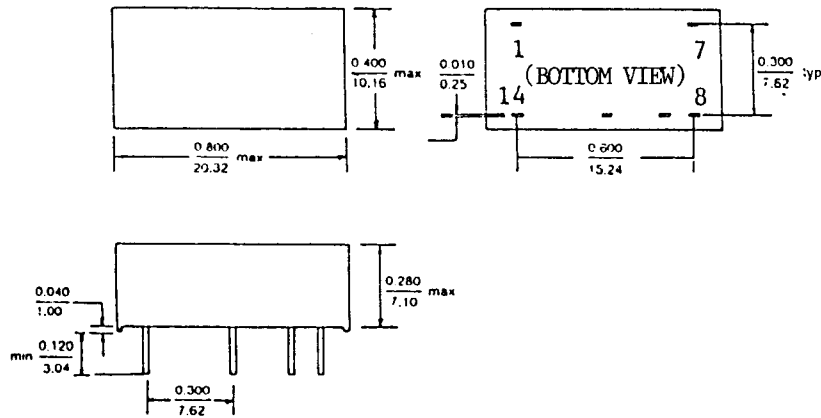
Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (% Typ.)
2XD-05S05N 2XD-12S05N 2XD-24S05N	5 12 24	5 5 5	200 200 200	65 65 65
2XD-05S09N 2XD-12S09N 2XD-24S09N	5 12 24	9 9 9	112 112 112	70 70 70
2XD-05S12N 2XD-12S12N 2XD-24S12N	5 12 24	12 12 12	84 84 84	70 70 70
2XD-05S15N 2XD-12S15N 2XD-24S15N	5 12 24	15 15 15	68 68 68	70 70 70
2XD-05S24N 2XD-12S24N 2XD-24S24N	5 12 24	24 24 24	42 42 42	70 70 70
2XD-05D05N 2XD-12D05N 2XD-24D05N	5 12 24	$\pm 5$ $\pm 5$ $\pm 5$	$\pm 100$ $\pm 100$ $\pm 100$	65 65 65
2XD-05D09N 2XD-12D09N 2XD-24D09N	5 12 24	$\pm 9$ $\pm 9$ $\pm 9$	$\pm 56$ $\pm 56$ $\pm 56$	70 70 70
2XD-05D12N 2XD-12D12N 2XD-24D12N	5 12 24	$\pm 12$ $\pm 12$ $\pm 12$	$\pm 42$ $\pm 42$ $\pm 42$	70 70 70
2XD-05D15N 2XD-12D15N 2XD-24D15N	5 12 24	$\pm 15$ $\pm 15$ $\pm 15$	$\pm 34$ $\pm 34$ $\pm 34$	70 70 70
2XD-05D24N 2XD-12D24N 2XD-24D24N	5 12 24	$\pm 24$ $\pm 24$ $\pm 24$	$\pm 21$ $\pm 21$ $\pm 21$	70 70 70

S = Single Output D = Dual Output R = Regulated N = Unregulated

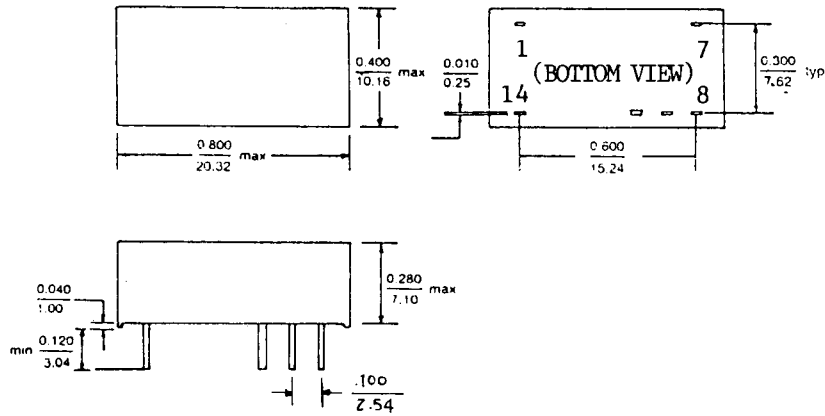
• Other outputs available; contact CET for details.

## 22D/26D SERIES PACKAGE SELECTION

### Pin Option 1 (22D)



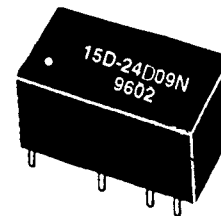
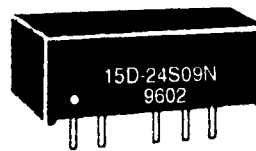
### Pin Option 2 (26D)



## 15D SERIES 1 WATT MINIATURE SIP DC/DC CONVERTERS

### FEATURES

- Up to 1 watt output power
- 7 pin SIP package
- 1000 VDC isolation
- Regulated output types



### GENERAL SPECIFICATIONS

- Output ripple & noise — 60mVp-p(20KHz B.W.)
- Isolation resistance — 100MΩ min @ 500VDC
- Switching frequency — 20KHz min
- Operating temperature — 0°C to 70°C
- Efficiency — 50% typ.

### ELECTRICAL SPECIFICATIONS

- Input voltage range —  $\pm 5\%$
- Output voltage tolerance —  $\pm 5\%$
- Line regulation (10% to 100% F.L.) —  $\pm 0.25\%/1\%$  of  $V_{in}$
- Load regulation (10% to 100% F.L.) — 0.9% typ 1.5% max.

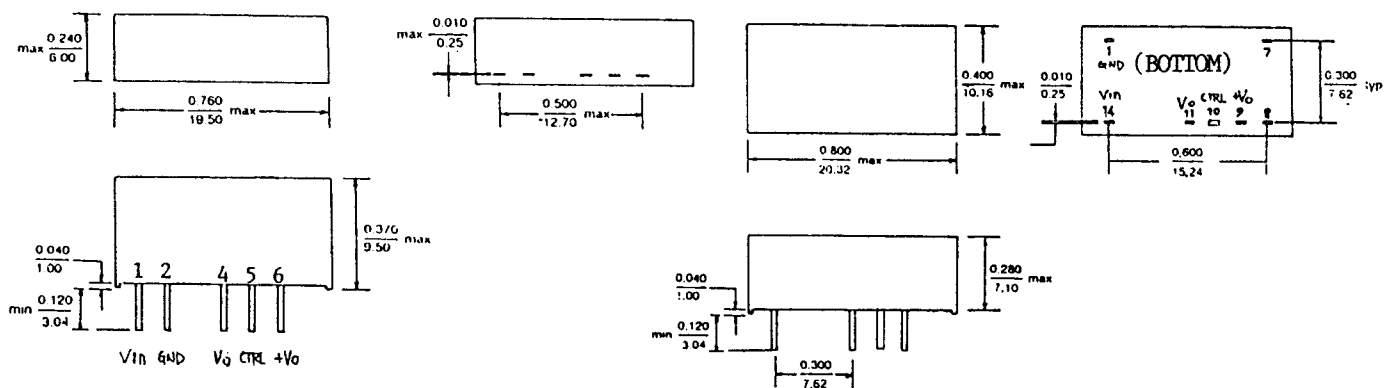
(typical at nominal input, rated load and 25° unless otherwise specified.)

Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (% Typ.)
15D-05S05R	5	5	200	45
15D-12S05R	12	5	200	45
15D-24S05R	24	5	200	45
15D-48S05R	48	5	200	45
15D-05S09R	5	9	110	55
15D-12S09R	12	9	110	55
15D-24S09R	24	9	110	55
15D-48S09R	48	9	110	55
15D-05S12R	5	12	85	55
15D-12S12R	12	12	85	55
15D-24S12R	24	12	85	55
15D-48S12R	48	12	85	55
15D-05S15R	5	15	66	55
15D-12S15R	12	15	66	55
15D-24S15R	24	15	66	55
15D-48S15R	48	15	66	55
15D-05D05R	5	$\pm 5$	$\pm 100$	45
15D-12D05R	12	$\pm 5$	$\pm 100$	45
15D-24D05R	24	$\pm 5$	$\pm 100$	45
15D-48D05R	48	$\pm 5$	$\pm 100$	45
15D-05D09R	5	$\pm 9$	$\pm 55$	55
15D-12D09R	12	$\pm 9$	$\pm 55$	55
15D-24D09R	24	$\pm 9$	$\pm 55$	55
15D-48D09R	48	$\pm 9$	$\pm 55$	55
15D-05D12R	5	$\pm 12$	$\pm 42$	55
15D-12D12R	12	$\pm 12$	$\pm 42$	55
15D-24D12R	24	$\pm 12$	$\pm 42$	55
15D-48D12R	48	$\pm 12$	$\pm 42$	55
15D-05D15R	5	$\pm 15$	$\pm 33$	55
15D-12D15R	12	$\pm 15$	$\pm 33$	55
15D-24D15R	24	$\pm 15$	$\pm 33$	55
15D-48D15R	48	$\pm 15$	$\pm 33$	55



# 15D SERIES PACKAGE SELECTION

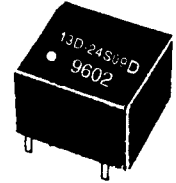
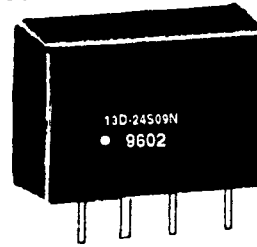
## MARKINGS AND DIMENSION



## 13D SERIES 1 WATT MINIATURE DC/DC CONVERTERS

**FEATURES**

- Up to 1 watt output power
- 4 Pin/8 pin DIL package
- 1000 VDC isolation
- Unregulated output types



**GENERAL SPECIFICATIONS**

- Output ripple & noise — 100mVp-p(20KHz B.W.)
- Isolation resistance — 1000MΩ Min @ 500VDC
- Switching frequency — 20KHz min
- Operating temperature — 0°C to 70°C
- Efficiency — 70% typ.

**ELECTRICAL SPECIFICATIONS**

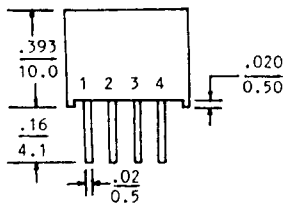
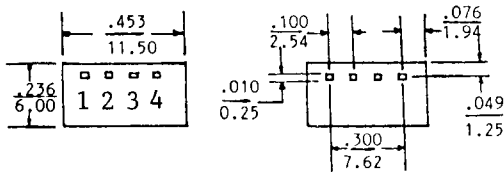
- Input voltage range — ± 10%
- Output voltage tolerance — ± 5%
- Line regulation (10% to 100% F.L.) — ± 1.2%/1% of Vin
- Load regulation (10% to 100% F.L.)  
— 3.3 and 5V output types: 15% max.  
— 9V, 12V, and 15V output types: 10% max.

(typical at nominal input, rated load and 25° unless otherwise specified.)

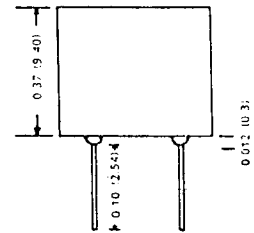
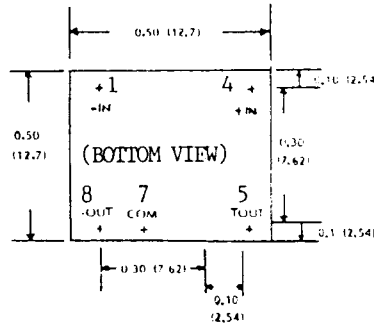
Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%Typ.)
13D-03S03N	3.3	3.3	303	70
13D-05S05N	5	5	200	75
13D-12S09N	12	9	110	75
13D-24S12N	24	12	84	75
13D-48S15N	48	15	67	75
13D-03D03N	3.3	± 3.3	± 154	70
13D-05D05N	5	± 5	± 100	75
13D-12D09N	12	± 9	± 56	75
13D-24D12N	24	± 12	± 42	75
13D-48D24N	48	±24	± 34	70

\* S = Single Output D = Dual Output

**MARKINGS AND DIMENSIONS**



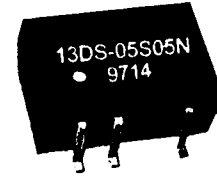
PIN	FUNCTION
1	-Vin
2	+Vin
3	-Vout
4	+Vout



## 13DS SERIES 1 WATT SINGLE OUTPUT SURFACE MOUNT

### FEATURES

- Up to 1 watt output power
- 14 pin SMD package
- 1000 VDC isolation
- Unregulated output types



### GENERAL SPECIFICATIONS

- Output ripple & noise — 100mVp-p(20KHz B.W.)
- Isolation resistance — 100MΩ min @ 500VDC
- Switching frequency — 20KHz min
- Operating temperature — 0°C to 70°C
- Efficiency — 70% typ.

### ELECTRICAL SPECIFICATIONS

- Input voltage range — ± 5%
- Output voltage tolerance — ± 5%
- Line regulation — ± 1.2%
- Load regulation — ±10%

(typical at nominal input, rated load and 25° unless otherwise specified.)

Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%Typ.)
13DS-05S05N	5	5	200	70
13DS-05S09N	5	9	110	75
13DS-05S12N	5	12	85	75
13DS-05S15N	5	15	66	75
13DS-12S05N	12	5	200	70
13DS-12S09N	12	9	110	75
13DS-12S12N	12	12	85	75
13DS-12S15N	12	15	66	75

### MARKINGS AND DIMENSIONS

