

SPEC NO:

PART NO: DTS120125UDC-P5-SZ



CUI INC

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UNIT: mm

DATE: 08/24/00

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## 1.0 General Description

**Model DTS120125UDC-P5-SZ is a universal type switch-mode power supply, operating at input voltage 90VAC to 264VAC and output voltage of 12VDC with 1.25A DC load.**

## 2.0 Electric Characteristics

### 2.1 Input

| No | ITEM            | CONDITION        | SPECIFICATION            |
|----|-----------------|------------------|--------------------------|
| 1. | Input Connector |                  | IEC320/C7-2 2PIN         |
| 2. | EMI             |                  | FCC/EN55022 Class B      |
| 3. | Input Voltage   | *Rated Voltage   | AC100V-240V              |
|    |                 | *Vibration Range | AC90V-264V               |
| 4. | Frequency       | *Rated           | 50-60Hz                  |
|    |                 | *Vibration       | 47-63Hz                  |
| 5. | Input Current   | Rated Current    | Full load 600mA RMS Max  |
|    |                 | No Load Current  | At Rated Input 100mA Max |
|    |                 | Inrush Current   | 100V Input 30A Max       |
|    |                 |                  | 240V Input 60A Max       |
| 6. | Input Power     | 100V-240V        | 45VA Max                 |
| 7. | Efficiency      | 100V-240V        | 70% Min.                 |



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## 2.2 Output:

2.2.1 The Power supply described by this specification shall meet the following output, requirement give in the test circuit as show in 8.0

| No | ITEM                    | CONDITION                  | SPECIFICATION                |
|----|-------------------------|----------------------------|------------------------------|
| 1. | Output Voltage          | *Rated Output              | 1.25A Load 12VDC $\pm$ 5%    |
|    |                         | *Out Regulation            | AC90V-264V                   |
| 2. | Load Current            | *Rated Current             | 100V-240V 1.25A              |
|    |                         | *Min current               | 100V-240V 0mA                |
|    |                         | *Max Current               | 100V-240V 1.25A              |
| 3. | Ripple Noise            | 100V-240V                  | 120mV (p-p) Max.             |
| 4. | Over Voltage protection | Over 15.8-14.2VDC          | Shut off output              |
| 5. | Over Current Protection | Over Load<br>Short Circuit | Shut off output & Auto reset |

## 2.3 Dielectric Withstand voltage:

The unit shall withstand for 1 min. without break down , application of 3000VAC or 4240VDC between blades and output plug.

## 2.4 Insulation Resistance:

Between input and output and output plug shall not be less 100M ohm, Measured by 500VDC insulation resistance tester.

## 2.5 Temperature rise:

a)Rated input 230VAC 50Hz & rated load 1.25ADC

Enclosure:45°C Max. on ambient temperature of 25°C by use thermometer or thermocouple.

## 2.6 Humidity Test:

40°C $\pm$  2°C relative humidity 90% RH for 96 hours, After keeping 30 minutes following insulation must be more than 5 M ohm.



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## **2.7 Short circuit protection:**

Shorting the DC output shall not cause damage to the power supply Removal of the short will allow the output to return to proper output voltage. Duration of the short time is 500milliseconds.

## **2.8 Output polarity: See Reference(1)**

## **3.0 Safety approved: UL,CUL,TUV,CE**

## **4.0 Meet EMI Standard**

Design to meet FCC Class B & CE , VCC I II

## **5.0 Mechanical Specification**

### **5.1 AC Plug: IEC 320/C7-2 2PIN**

### **5.2 DC Output Cord:**

Bending test: Life 1000 times 100% guarantee. Swings 120 from left to right  
(60+60) Loading weight 500gm, 50 cycle/minute.

Pull test :DC cord and plug, weight 6kg for 1 minute

### **5.3 Cord length and Output plug: See Reference (2)**

### **5.4 Vibration Test:**

Vibration Frequency 1500 cycle/minute, swings 2mm peak-peak 3 direction  
(X-Y-Z) each 30 min.

### **5.5 Drop Test:**

The unit shall comply with 2.4 without exposing live parts by creak or open of enclosure even the unit shall dropped from a high of 100cm onto a flat wooden board which is 30mm thickness.(For CE).

## **6.0 Normal Operating temperature & Humidity:**

Normal operating temperature:10°C to 40°C

Humidity :20% to 80%

## **7.0 Storage Temperature & Humidity:**

Storage Temperature:-10°C to 70°C

Humidity :10% -90% RH

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| TEST CONDITION                                     | I/P  | SPEC.         | 1     | 2 | 3 | 4 | 5 | 6 |
|----------------------------------------------------|------|---------------|-------|---|---|---|---|---|
| LINE REGULATION<br>AT LOAD 1.25A<br>OUTPUT VOLTAGE | 90V  | 12VDC<br>± 5% | 12.00 |   |   |   |   |   |
|                                                    | 115V |               | 12.00 |   |   |   |   |   |
|                                                    | 132V |               | 12.00 |   |   |   |   |   |
|                                                    | 180V |               | 12.00 |   |   |   |   |   |
|                                                    | 230V |               | 12.00 |   |   |   |   |   |
| Ripple Noise V(p-p)                                | 264V |               | 12.00 |   |   |   |   |   |
|                                                    | 100V | 120mV         | 52    |   |   |   |   |   |
|                                                    | 230V | Max.          | 35    |   |   |   |   |   |

| TEST CONDITION                                  | I/P  | SPEC.         | 1     | 2 | 3 | 4 | 5 | 6 |
|-------------------------------------------------|------|---------------|-------|---|---|---|---|---|
| LINE REGULATION<br>AT LOAD 0A<br>OUTPUT VOLTAGE | 90V  | 12VDC<br>± 5% | 12.20 |   |   |   |   |   |
|                                                 | 115V |               | 12.20 |   |   |   |   |   |
|                                                 | 132V |               | 12.20 |   |   |   |   |   |
|                                                 | 180V |               | 12.20 |   |   |   |   |   |
|                                                 | 230V |               | 12.20 |   |   |   |   |   |
| Ripple Noise V(p-p)                             | 264V |               | 12.20 |   |   |   |   |   |
|                                                 | 100V | 120mV         | 5     |   |   |   |   |   |
|                                                 | 230V | Max.          | 3     |   |   |   |   |   |

## INPUT CHARACTERISTICS:

| INPUT VOLTAGE | INPUT CURRENT (A) | INPUT POWER (W) | POWER FACTOR | EFFICIENCY (%) |
|---------------|-------------------|-----------------|--------------|----------------|
| 90V           | 0.34              | 19.1            | 0.62         | 78.2           |
| 115V          | 0.28              | 18.6            | 0.58         | 80.3           |
| 132V          | 0.25              | 18.6            | 0.56         | 80.3           |
| 180V          | 0.21              | 18.6            | 0.49         | 80.3           |
| 230V          | 0.18              | 19.2            | 0.46         | 77.7           |
| 264V          | 0.17              | 19.7            | 0.44         | 75.8           |

## OUTPUT POWER PROTECTION:

| INPUT      | 90V  | 115V | 132V | 180V | 230V | 264V |
|------------|------|------|------|------|------|------|
| RESULT (W) | 22.7 | 26.0 | 27.1 | 26.8 | 23.9 | 22.1 |

## OVER CURRENT PROTECTION:

| INPUT      | 90V | 115V | 132V | 180V | 230V | 264V |
|------------|-----|------|------|------|------|------|
| RESULT (A) | 2.6 | 2.9  | 3.0  | 3.1  | 2.7  | 2.5  |

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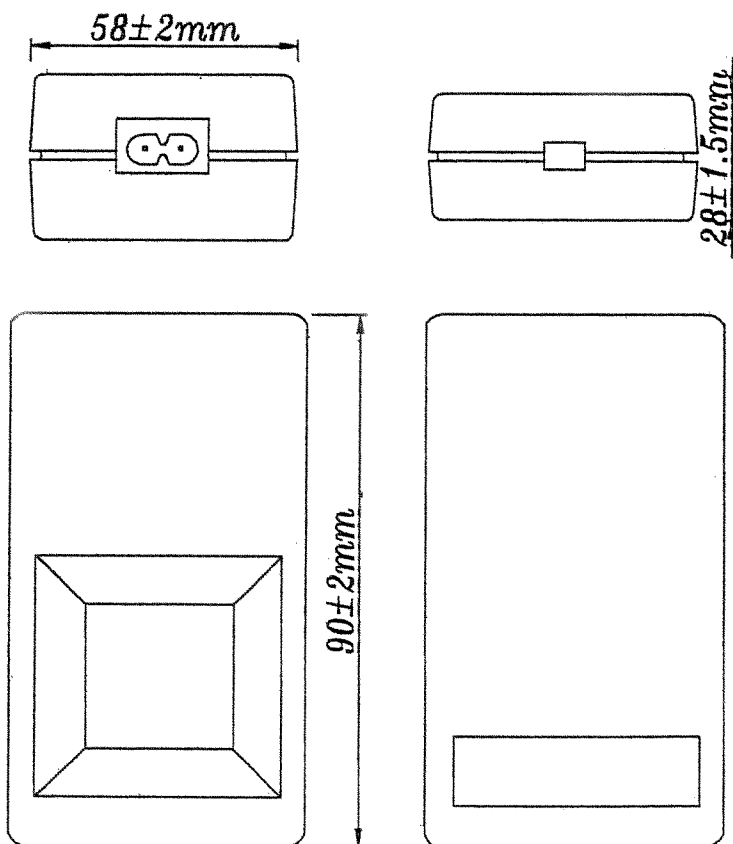
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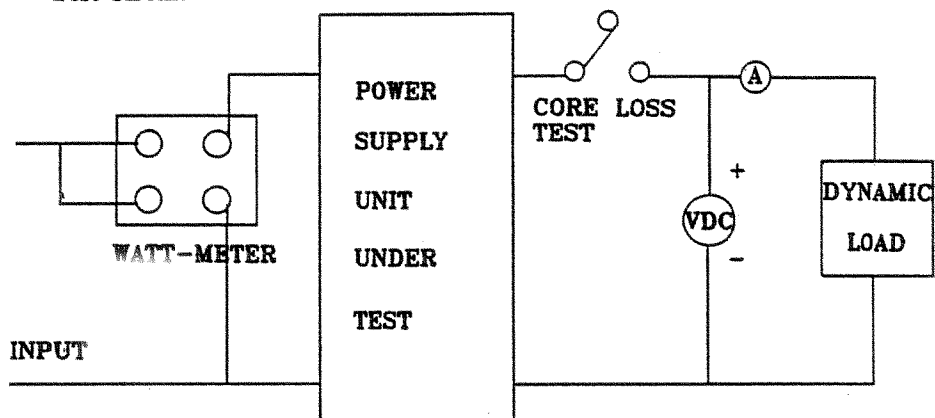
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## Test Circuit



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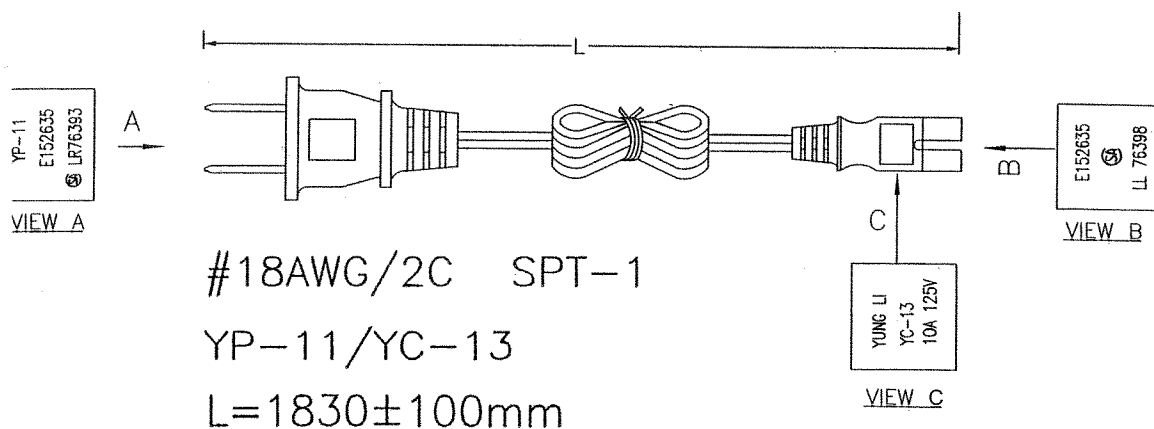
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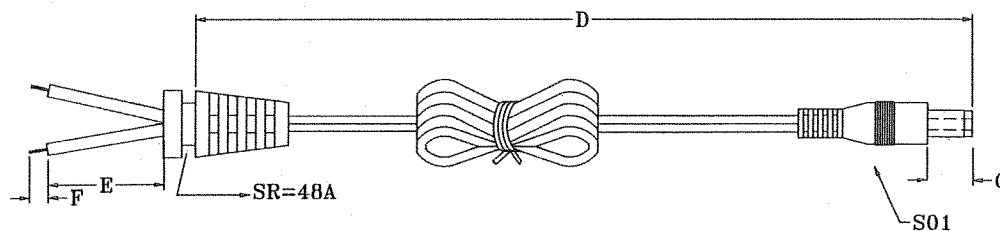
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CABLE-135



CABLE-206



| AWG   | A         | B         | C         | D              | E      | F      | DATE | SING |
|-------|-----------|-----------|-----------|----------------|--------|--------|------|------|
| 20/2C | 5.5±0.1mm | 2.1±0.1mm | 9.5±0.5mm | 1030mm/+200/-0 | 30±5mm | 10±5mm |      |      |
|       |           |           |           |                |        |        |      |      |
|       |           |           |           |                |        |        |      |      |
|       |           |           |           |                |        |        |      |      |
|       |           |           |           |                |        |        |      |      |