

# DC-DC PCB Mount

## 1-25 Watts DCU Series



## THE XPERTS IN POWER

- Fully Isolated Outputs
- 
- 2:1 Input Range
- 
- Metal Case
- 
- Surface Mount Construction
- 
- DIN Rail Mount Option
- 
- Screw Terminals Option
- 
- Remote ON/OFF Available

### Specification

#### Input

- Input Voltage • 4.5-9.0 VDC, 9-18 VDC, 18-36 VDC, 36-72 VDC

#### Output

- Output Voltage • See Table
- Output Voltage Adjustment •  $\pm 5\%$  DCU15 & 25 models only (3 V models 3.20 to 3.47 V)
- Minimum Load • No minimum load required
- Start Up Delay • 20 ms max
- Initial Set Accuracy •  $\pm 5\%$  -3% max  
+5%, DCU 5 V output
- Drift •  $\pm 60$  mV max
- Line Regulation • 0.5% max (0.1% typical)
- Load Regulation • 1% max single output models (0.2% typical)  
5% max dual output models (1.0% typical)
- Ripple & Noise • 40 mV p-p typical, 150 mV max. (the addition of a 100  $\mu$ F (220  $\mu$ F for 3 & 5 V outputs) capacitor across output of device reduces ripple to below 40 mV pk-pk)
- Overvoltage Protection • DCU15 & 25 models only - operates 115-140% of output (3 V models 4.0-5.25 V)
- Short Circuit & Overload Protection • Operates >105% of rating and recovers automatically
- Temperature Coefficient •  $\pm 0.02\%/^{\circ}\text{C}$
- Remote ON/OFF • DCU15 & 25 models only - link RC to -ve I/P for operation (or TTL low), open circuit for shutdown (or TTL high)

#### General

- Efficiency • 67% to 85% dependant on model
- Lead Temperature •  $+260^{\circ}\text{C}$  for less than 15 seconds
- Isolation • 500 VAC Input to Output, 500 VAC Input to Ground, 500 VAC Output to Ground

#### Environmental

- Operating Temperature •  $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$   
See Derating Curve
- Storage Temperature •  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- Shock • 50 G for 11 ms, once on each X, Y & Z axis
- Vibration • 10 G 10-55 Hz 3 mins period, 60 mins along X, Y & Z axis

#### EMC & Safety

- Emissions • EN55022 Level A Conducted with external components  
EN55022 Level A Radiated
- ESD Susceptibility • EN61000-4-2 Level 4
- Radiated Susceptibility • EN61000-4-3 Level 3
- EFT/Burst • EN61000-4-4 Level 3
- Surge • EN61000-4-5 Level 3
- Safety Approvals • EN60950, UL1950, cUL1950

## OUTPUT VOLTAGE & CURRENT RATINGS - SINGLE OUTPUT MODELS

**DCU**

| Input<br>Output<br>(V) | Input Voltage<br>4.5 - 9 Volts |               |              | Input Voltage<br>9 - 18 Volts |               |              | Input Voltage<br>18 - 36 Volts |               |              | Input Voltage<br>36 - 75 Volts |               |              |
|------------------------|--------------------------------|---------------|--------------|-------------------------------|---------------|--------------|--------------------------------|---------------|--------------|--------------------------------|---------------|--------------|
| Model No.              | DCU105S05                      | DCU105S12     | DCU105S15    | DCU112S05                     | DCU112S12     | DCU112S15    | DCU124S05                      | DCU124S12     | DCU124S15    | DCU148S05                      | DCU148S12     | DCU148S15    |
| Output                 | 5 V @ 0.3 A                    | 12 V @ 0.13 A | 15 V @ 0.1 A | 5 V @ 0.3 A                   | 12 V @ 0.13 A | 15 V @ 0.1 A | 5 V @ 0.3 A                    | 12 V @ 0.13 A | 15 V @ 0.1 A | 5 V @ 0.3 A                    | 12 V @ 0.13 A | 15 V @ 0.1 A |
| Model No.              | DCU305S05                      | DCU305S12     | DCU305S15    | DCU312S05                     | DCU312S12     | DCU312S15    | DCU324S05                      | DCU324S12     | DCU324S15    | DCU348S05                      | DCU348S12     | DCU348S15    |
| Output                 | 5 V @ 0.6 A                    | 12 V @ 0.25 A | 15 V @ 0.2 A | 5 V @ 0.6 A                   | 12 V @ 0.25 A | 15 V @ 0.2 A | 5 V @ 0.6 A                    | 12 V @ 0.25 A | 15 V @ 0.2 A | 5 V @ 0.6 A                    | 12 V @ 0.25 A | 15 V @ 0.2 A |
| Model No.              | DCU605S05                      | DCU605S12     | DCU605S15    | DCU612S05                     | DCU612S12     | DCU612S15    | DCU624S05                      | DCU624S12     | DCU624S15    | DCU648S05                      | DCU648S12     | DCU648S15    |
| Output                 | 5 V @ 1 A*                     | 12 V @ 0.5 A  | 15 V @ 0.4 A | 5 V @ 1.2 A                   | 12 V @ 0.5 A  | 15 V @ 0.4 A | 5 V @ 1.2 A                    | 12 V @ 0.5 A  | 15 V @ 0.4 A | 5 V @ 1.2 A*                   | 12 V @ 0.5 A  | 15 V @ 0.4 A |
| Model No.              | DCU1005S05                     | DCU1005S12    | DCU1005S15   | DCU1012S05                    | DCU1012S12    | DCU1012S15   | DCU1024S05                     | DCU1024S12    | DCU1024S15   | DCU1048S05                     | DCU1048S12    | DCU1048S15   |
| Output                 | 5 V @ 1.6 A*                   | 12 V @ 0.7 A  | 15 V @ 0.6 A | 5 V @ 2 A                     | 12 V @ 0.9 A  | 15 V @ 0.7 A | 5 V @ 2 A                      | 12 V @ 0.9 A  | 15 V @ 0.7 A | 5 V @ 2 A*                     | 12 V @ 0.9 A  | 15 V @ 0.7 A |
| Model No.              | DCU1505S05                     | DCU1505S12    | -            | DCU1512S05                    | DCU1512S12    | -            | DCU1524S05                     | DCU1524S12    | -            | DCU1548S05                     | DCU1548S12    | -            |
| Output                 | 5 V @ 2 A*                     | 12 V @ 1 A    | -            | 5 V @ 2.4 A                   | 12 V @ 1.3 A  | -            | 5 V @ 2.4 A                    | 12 V @ 1.3 A  | -            | 5 V @ 2.4 A*                   | 12 V @ 1.3 A  | -            |
| Model No.              | DCU2505S05                     | DCU2505S12    | -            | DCU2512S05                    | DCU2512S12    | -            | DCU2524S05                     | DCU2524S12    | -            | DCU2548S05                     | DCU2548S12    | -            |
| Output                 | 5 V @ 3.2 A*                   | 12 V @ 1.7 A  | -            | 5 V @ 4 A                     | 12 V @ 2.1 A  | -            | 5 V @ 4 A                      | 12 V @ 2.1 A  | -            | 5 V @ 4 A*                     | 12 V @ 2.1 A  | -            |

**Note**

\* Also available with 3.3 V output, current rating is the same as the 5 V model except for the DCU25 where the 3.3 V is rated at 4.0 A.  
Replace 'S05' with 'S03' in the model number to order.

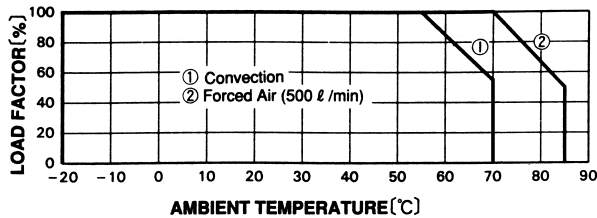
## OUTPUT VOLTAGE & CURRENT RATINGS - MULTI OUTPUT MODELS

**DCU**

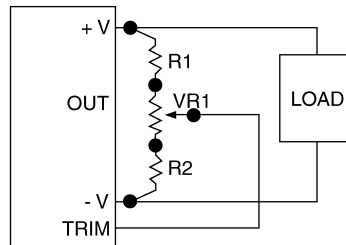
| Input<br>Output<br>(V) | Input Voltage<br>4.5 - 9 Volts |                    | Input Voltage<br>9 - 18 Volts |                    | Input Voltage<br>18 - 36 Volts |                    | Input Voltage<br>36 - 75 Volts |                    |
|------------------------|--------------------------------|--------------------|-------------------------------|--------------------|--------------------------------|--------------------|--------------------------------|--------------------|
| Model No.              | DCU105D12                      | DCU105D15          | DCU112D12                     | DCU112D15          | DCU124D12                      | DCU124D15          | DCU148D12                      | DCU148D15          |
| Output                 | ±12 V(24) @ 0.065 A            | ±15 V(30) @ 0.05 A | ±12 V(24) @ 0.065 A           | ±15 V(30) @ 0.05 A | ±12 V(24) @ 0.065 A            | ±15 V(30) @ 0.05 A | ±12 V(24) @ 0.065 A            | ±15 V(30) @ 0.05 A |
| Model No.              | DCU305D12                      | DCU305D15          | DCU312D12                     | DCU312D15          | DCU324D12                      | DCU324D15          | DCU348D12                      | DCU348D15          |
| Output                 | ±12 V(24) @ 0.13 A             | ±15 V(30) @ 0.1 A  | ±12 V(24) @ 0.13 A            | ±15 V(30) @ 0.1 A  | ±12 V(24) @ 0.13 A             | ±15 V(30) @ 0.1 A  | ±12 V(24) @ 0.13 A             | ±15 V(30) @ 0.1 A  |
| Model No.              | DCU605D12                      | DCU605D15          | DCU612D12                     | DCU612D15          | DCU624D12                      | DCU624D15          | DCU648D12                      | DCU648D15          |
| Output                 | ±12 V(24) @ 0.25 A             | ±15 V(30) @ 0.2 A  | ±12 V(24) @ 0.25 A            | ±15 V(30) @ 0.2 A  | ±12 V(24) @ 0.25 A             | ±15 V(30) @ 0.2 A  | ±12 V(24) @ 0.25 A             | ±15 V(30) @ 0.2 A  |
| Model No.              | DCU1005D12                     | DCU1005D15         | DCU1012D12                    | DCU1012D15         | <b>DCU1024D12</b>              | DCU1024D15         | DCU1048D12                     | DCU1048D15         |
| Output                 | ±12 V(24) @ 0.35 A             | ±15 V(30) @ 0.3 A  | ±12 V(24) @ 0.45 A            | ±15 V(30) @ 0.35 A | ±12 V(24) @ 0.45 A             | ±15 V(30) @ 0.35 A | ±12 V(24) @ 0.45 A             | ±15 V(30) @ 0.35 A |
| Model No.              | DCU1505D12                     | DCU1505D15         | DCU1512D12                    | DCU1512D15         | DCU1524D12                     | DCU1524D15         | DCU1548D12                     | DCU1548D15         |
| Output                 | ±12 V(24) @ 0.6 A              | ±15 V(30) @ 0.5 A  | ±12 V(24) @ 0.65 A            | ±15 V(30) @ 0.5 A  | ±12 V(24) @ 0.65 A             | ±15 V(30) @ 0.5 A  | ±12 V(24) @ 0.65 A             | ±15 V(30) @ 0.5 A  |
| Model No.              | DCU2505D12                     | DCU2505D15         | <b>DCU2512D12</b>             | <b>DCU2512D15</b>  | <b>DCU2524D12</b>              | DCU2524D15         | DCU2548D12                     | DCU2548D15         |
| Output                 | ±12 V(24) @ 0.84 A             | ±15 V(30) @ 0.67 A | ±12 V(24) @ 1.05 A            | ±15 V(30) @ 0.85 A | ±12 V(24) @ 1.05 A             | ±15 V(30) @ 0.85 A | ±12 V(24) @ 1.05 A             | ±15 V(30) @ 0.85 A |

### Application Notes

Temperature Derating



Output trim (±5%) DCU15 & 25 models



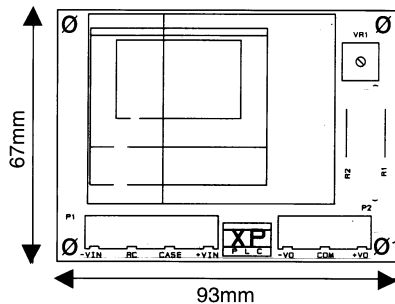
| O/P   | VR1  | R1    | R2     |
|-------|------|-------|--------|
| 5 V   | 1 kΩ | 100 Ω | 270 Ω  |
| 12 V  | 5 kΩ | 270 Ω | 2.7 kΩ |
| ±12 V | 5 kΩ | 10 kΩ | 3.9 kΩ |
| ±15 V | 5 kΩ | 10 kΩ | 2.7 kΩ |

Note: if output set too high OVP may operate

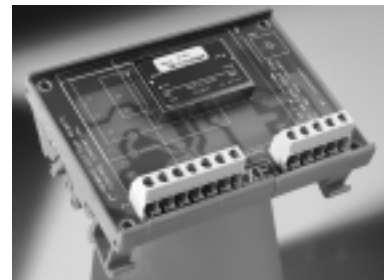
### Mounting Accessories

**DCU-BOARD**

The DCU-BOARD is designed to accept any of the DCU Series, it provides screw terminals and has provision for the trim resistors for the DCU15 and 25 watt models. It can be supplied with a DIN HOUSING for mounting on DIN rails - both top hat and G types.

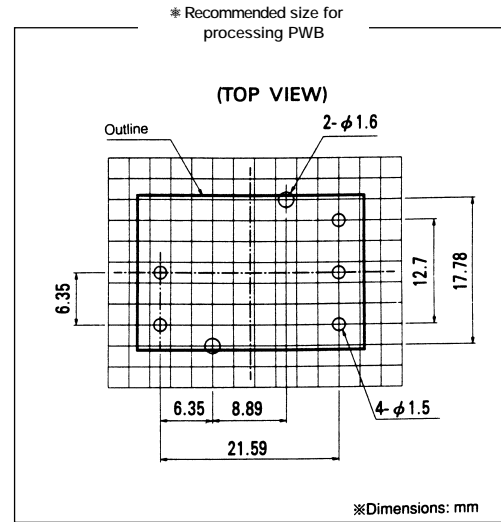
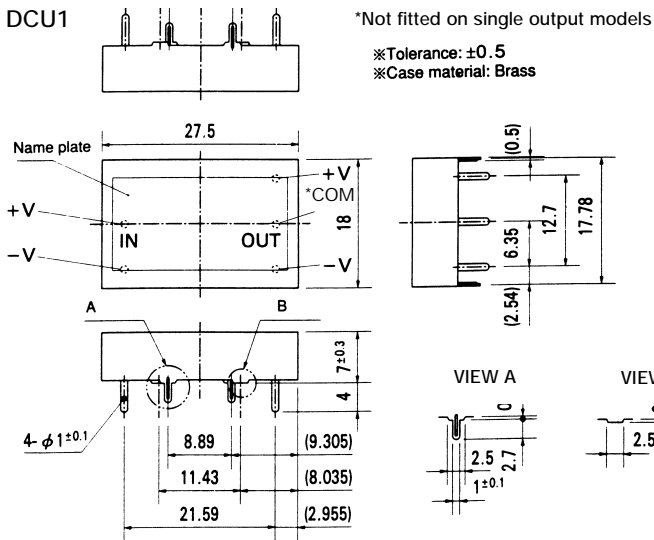


4 x 4mm ø holes  
85 x 60mm centres



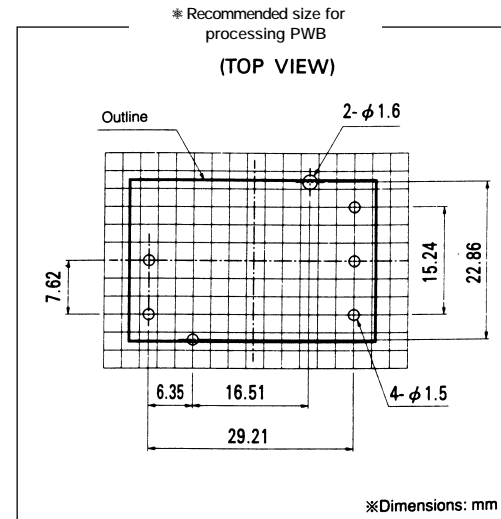
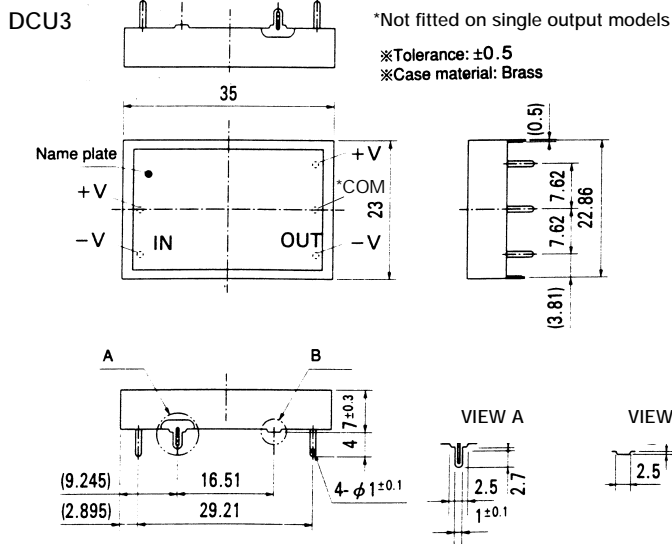
## Mechanical Details - 1.5 to 6 Watt Models

DCU1



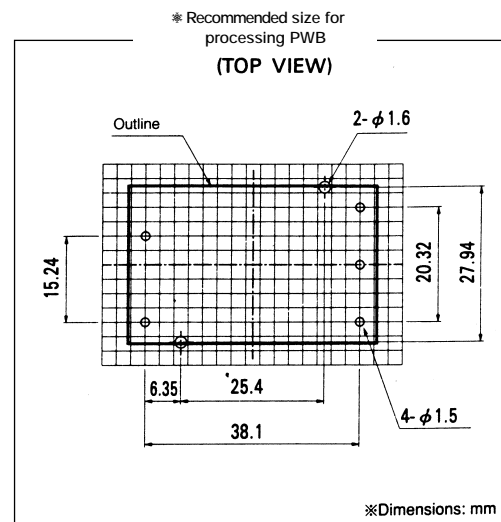
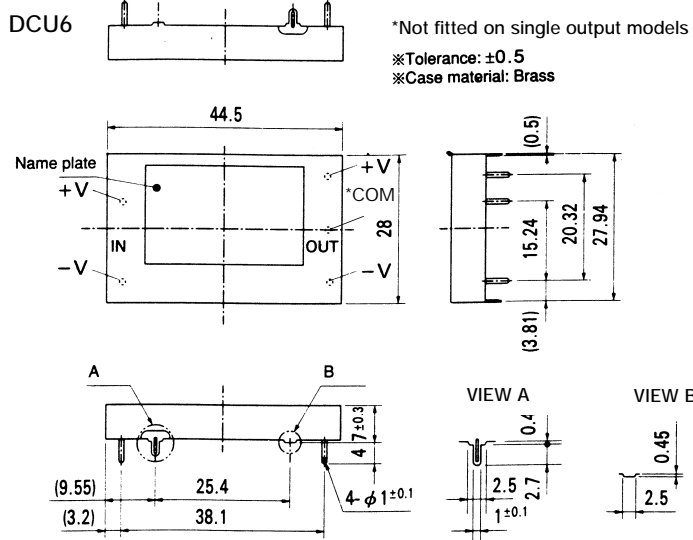
Weight 10g

DCU3



Weight 16g

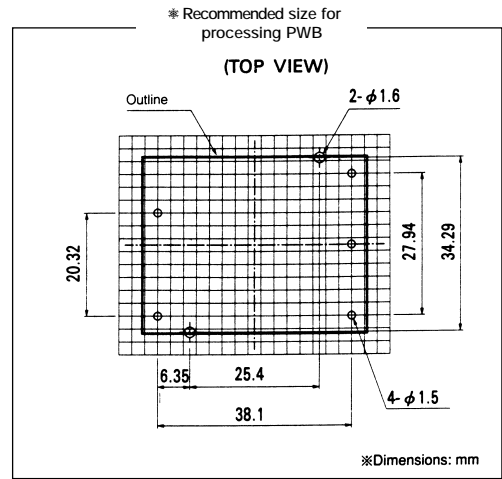
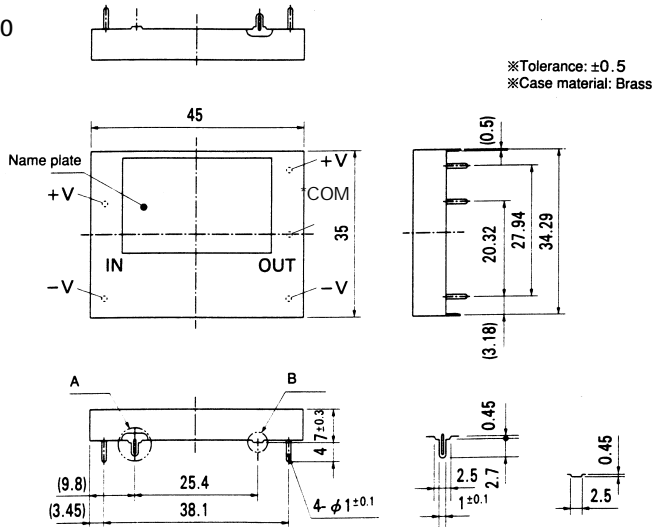
DCU6



Weight 25g

# Mechanical Details - 10 to 25 Watt Models

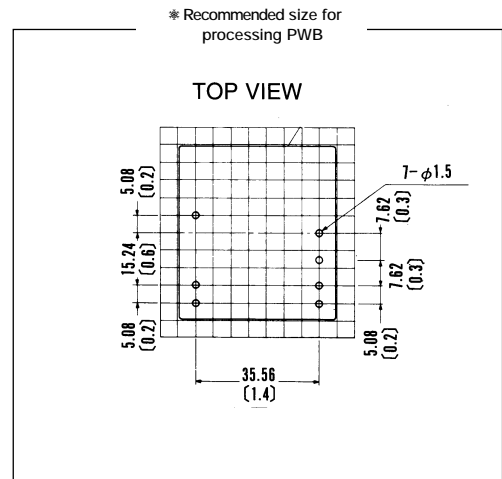
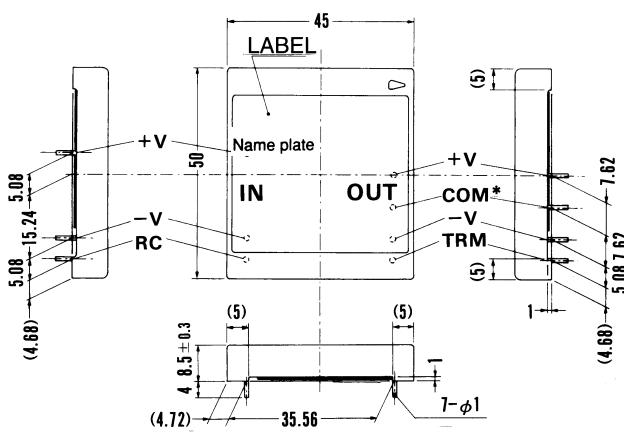
DCU10



Weight 40g

\*Not fitted on single output models

DCU15

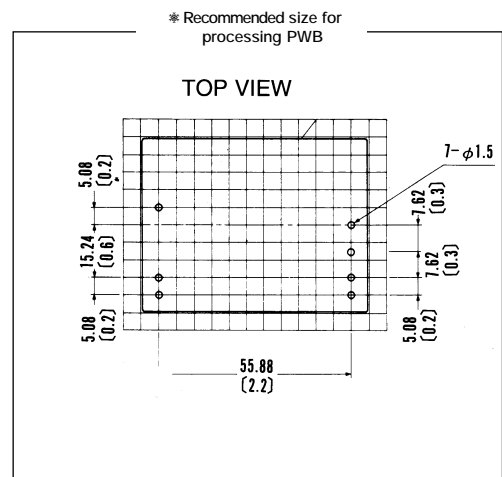
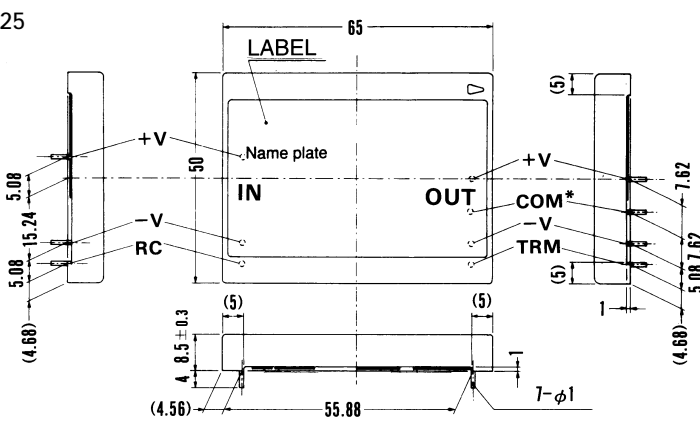


Weight 55g

\*Not fitted on single output models.  
 N.B. Link RC to -ve I/P for operation (or TTL Low), O/C for shutdown (or TTL High)

\*Tolerance:  $\pm 0.5$   
 \*Dimensions in mm.

DCU25



Weight 65g

\*Not fitted on single output models.  
 N.B. Link RC to -ve I/P for operation (or TTL Low), O/C for shutdown (or TTL High)

\*Tolerance:  $\pm 0.5$   
 \*Dimensions in mm.