

DC to DC Converters

Non-insulation, High Power Type

DE Series DEM Type

SPECIFICATIONS AND STANDARDS

Part No.		DEM05-1R0P	DEM05-2R0P	DEM12-1R0P
Maximum output power	W	5	10	12
Input conditions				
Input voltage E _{dc}	V	+21.6 to +26.4(+24typ.)	+21.6 to +26.4(+24typ.)	+21.6 to +26.4(+24typ.)
Efficiency* ¹	%	82typ.	83typ.	90typ.
Output characteristics				
Output voltage E _{dc}	V	+5	+5	+12
Maximum output current	A	1	2	1
Output voltage setting deviation* ²	%	±3max.	±3max.	±3max.
Output voltage total variation* ³	%	±2max.	±2max.	±2max.
Ripple E _p -p* ⁴	mV	150max. (External capacitor 220μF×1)	200max. (External capacitor 560μF×2)	200max. (External capacitor 270μF×2)
Ripple noise E _p -p* ⁴	mV	300max. (External capacitor 220μF×1)	300max. (External capacitor 560μF×2)	300max. (External capacitor 270μF×2)
Shapes and dimensions				
Weight	g	8max.	10max.	10max.

*¹ Typical input voltage, maximum output current, ambient temperature 25°C.

*² Rated input and output, ambient temperature 25°C.

*³ Output voltage total variation within the operating range is indicated by the derating chart and within the 0 to +50°C temperature range.

*⁴ Measurement bandwidth: 50MHz.

• Dynamic load variation is ±4% max., the value determined for 50 to 100% sudden load change over a time interval of 1ms max.

DERATINGS

Derating is necessary when ambient temperature exceeds 40°C or 50°C. Please refer to Table 1, DESIGN RECOMMENDATIONS.

COMMON SPECIFICATIONS

Temperature range	Operating(°C)	-10 to +70
	Storage(°C)	-20 to +70
		[Derating is necessary when ambient temperature exceeds 40°C or 50°C.]

TEMPERATURE DERATINGS

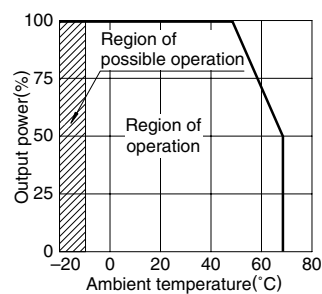


Fig.1

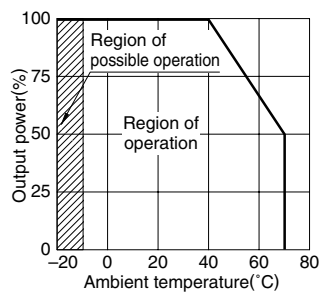


Fig.2

TABLE 1

DESIGN RECOMMENDATIONS

Part No.	Derating temperature	Input fuse (A)	External capacitor (μF)max.
DEM05-1R0P	Fig.1	1.6	1000
DEM05-2R0P	Fig.2	2.5	4700
DEM12-1R0P	Fig.1	2.5	4700

PRECAUTIONS

- Series or parallel operation
Series or parallel operation of this product is not possible.
- Input fuse
Recommended input fuse ratings are listed in the Table 1, DESIGN RECOMMENDATIONS.
- Input capacitor
A capacitor should be connected between the DC input terminals (+) and (COM in). The capacitor of 100 to 330μF is appropriate, while the range depends upon impedance. For this purpose, it should be used with a 0.3V/ms or higher incline of an input voltage rise. A long rise time may disable the start-up.
- External capacitor
Ripple and noise can be reduced by connecting an external capacitor to the output. Capacitance should be below the value listed in the table 1, DESIGN RECOMMENDATIONS.
- Overcurrent protection
Overcurrent protection is provided to protect the power supply circuit from problems such as load short circuits, etc. It should be noted, however, that 5 minutes or longer short circuit and a use with overload are undesirable.

SOLDERING CONDITIONS

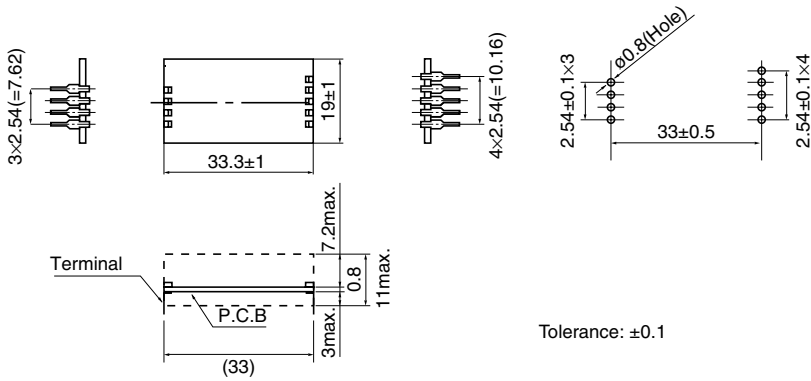
Dipping: 260°C, 10s max.

CLEANING CONDITIONS

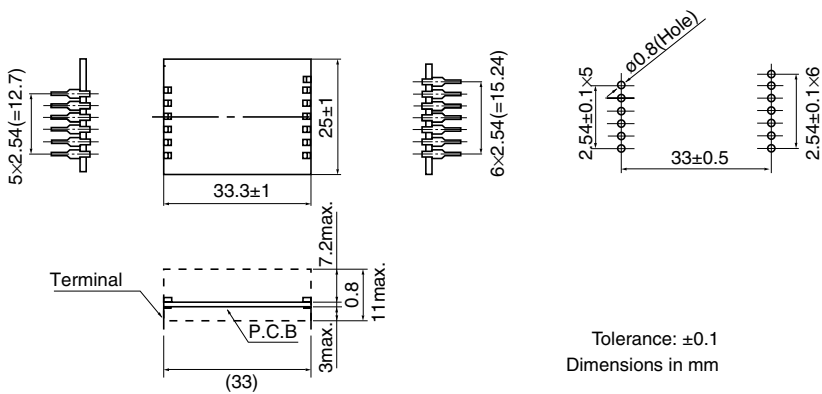
Cleaning should be limited to terminal portions.

SHAPES AND DIMENSIONS/RECOMMENDED PIN PATTERNS

A TYPE

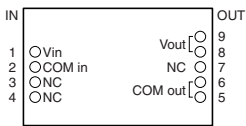


B TYPE

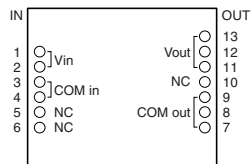


TERMINAL DESIGNATIONS AND FUNCTIONS[TOP VIEW]

A TYPE



B TYPE



V _{in}	DC input terminal(+)	Connect to DC input line.
COM in	DC input terminal(COM)	Connect to DC input line.
NC	No connection	Do not connect.
V _{out}	DC output terminal(+)	Connect to load.
COM out	DC output terminal(COM)	Connect to load.