

## 739-92-SD

800 Watt, isolated, single output buck-boost converter with internal decoupling diode

All parameters defined on  $T_a=25^{\circ}\text{C}$ ,  $I_{oNom} = 8.7\text{ ADC}$  and  $U_{iNom} = 24\text{VDC}$

### ABSOLUTE MAXIMUM RATINGS

| parameter          | unit | typ   |
|--------------------|------|-------|
| Input peak voltage | VDC  | 38.00 |

### THERMAL CHARACTERISTICS

| parameter  | min to max                                  | typ                   |
|--|---|-----------------------|
| Ambient temperature range  | $-40^{\circ}\text{C} / +85^{\circ}\text{C}$ |                       |
| Max. case temperature for thermal shut down [ $^{\circ}\text{C}$ ] |   | $+90^{\circ}\text{C}$ |
| Storage temperature [device not in operation]                      | $-10^{\circ}\text{C} / +65^{\circ}\text{C}$ |                       |
| Relative maximum humidity under storage                            |   | 75% RH                |
| Storage under worst conditions [in days]                           |   | 25                    |

### COMMUNICATION INTERFACE

| parameter                                  | unit | fulfilled | conditions | min to max  |
|--|------|-----------|------------|-------------|
| Option shut down [left open for operation] |      | ✓         |            |             |
| Shutdown voltage for transformer           | VDC  |           | $I_{oNom}$ | -0.2 to 2.8 |

### SPECIALS

| parameter                                | unit | fulfilled | conditions     | typ                      |
|--|------|-----------|----------------|--------------------------|
| Switching frequency                      | kHz  |           |                | 130                      |
| Efficiency at light loads                | %    |           | $0.25I_{oNom}$ | 95.00                    |
| Efficiency at medium loads               | %    |           | $0.5I_{oNom}$  | 95.00                    |
| Efficiency at full loads                 | %    |           | $I_{oNom}$     | 93.00                    |
| For active loads or parallel connection  |      | ✓         |                |                          |
| Drives high capacitive loads             |      | ✓         |                |                          |
| CC/CV battery load characteristic        |      | ✓         |                |                          |
| Coupling capacitance input to output     | nF   |           |                | transformer winding only |
| Insulation strength primary to secondary | VDC  |           |                | 2100                     |
| Insulation strength primary to case      | VDC  |           |                | 2100                     |

### COMPLIANCE

| parameter   | fulfilled | notes |
|---|-----------|-------|
| 61000-6-2 [EMC-Immunity standard for industrial environment]    | ✓         |       |
| 61000-4-2 [immunity against ESD-electrostatic discharge]        | ✓         |       |
| 61000-4-3 [immunity High frequency electromagnetic fields]      | ✓         |       |
| 61000-4-4 [immunity against burst - electrical fast transients] | ✓         |       |
| 61000-4-5 [immunity against surge - high energy surges]         | ✓         |       |
| 61000-4-6 [immunity against induced, conducted disturbances]    | ✓         |       |
| 61000-6-4 [EMC - Emission standard for industrial environment]  | ✓         |       |
| 55022<A   | ✓         |       |

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### INPUT

| parameter  | unit  | conditions  | min | typ  | max |
|--|-------|-------------|-----|------|-----|
| Input voltage range                                    | VDC   | IoNom       | 22  | 24   | 36  |
| No load input current                                  | mA    | UiNom       |     | 190  |     |
| Max. input current                                     | A     | UiNom       |     | 41   |     |
| Input start up voltage                                 | VDC   | UiNom       |     | 22.0 |     |
| Undervoltage lockout                                   | VDC   | UiNom       |     | 20.5 |     |
| Input quiescent current in shutdown mode               | mA    | UiNom       |     | 3.00 |     |
| Input current overshoot during soft start ramp up      | %     | IoNom       |     | 10   |     |
| Input capacitor load peak current at initial switch on | A     | UiNom       |     | 10   |     |
| Generated AC-ripple on the supply [BW=20MHz]           | mVp-p | UiNom/loNom |     | 50   |     |
| Generated HF-noise on the supply [BW=20MHz]            | mVp-p | UiNom/loNom |     | 30   |     |

### OUTPUT

| parameter  | unit  | conditions  | min | typ        | max |
|--|-------|-------------|-----|------------|-----|
| Output voltage   | VDC   | IoNom       |     | 92.3       |     |
| No Load output voltage increase                              | %     | UiNom       |     | 4          |     |
| Minimum required load to obtain the specified output voltage | %     | UiNom       |     | 5          |     |
| Generated AC-ripple on the output [BW=20MHz]                 | mVp-p | UiNom/loNom |     | 15         |     |
| Generated HF-noise on the output [BW=20MHz]                  | mVp-p | UiNom/loNom |     | 20         |     |
| Output voltage accuracy                                      | %     | IoNom       |     | +/-2.50%   |     |
| Output voltage overshoot at initial switch-on                | %     | IoNom       |     | overdamped |     |
| Rated output power   | W     |             |     | 800        |     |

### CONTROL

| parameter                               | unit | conditions          | min | typ      | max |
|---|------|---------------------|-----|----------|-----|
| Static line regulation                  | %    | IoNom/UiMin...UiMax |     | 0.10     |     |
| Static load regulation                  | %    | IoMin...IoMax/UiNom |     | 0.8      |     |
| Maximum admissible capacitive load      | uF   | IoNom               |     | infinite |     |
| Initial switch on time                  | ms   | IoNom               |     | 300      |     |
| Softstart ramp up time                  | ms   | IoNom               |     | 30       |     |
| Restart time after undervoltage lockout | ms   | IoNom               |     | 270      |     |

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### MECHANICAL parameter

| parameter          | unit |            |
|--------------------|------|------------|
| Overall dimensions | mm   | 130x130x28 |
| Weight             | g    | 1200       |

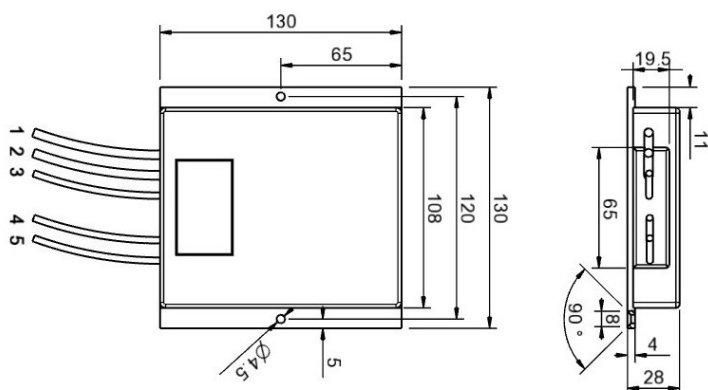
| Pin No. | Function | Electrical Determination | Colour | Cross-Section       | Cable length |
|---------|----------|--------------------------|--------|---------------------|--------------|
| 1       | Vi+      | Input voltage positive   | red    | 10 mm <sup>2</sup>  | 1000 mm      |
| 2       | Vi-      | Input voltage negative   | black  | 10 mm <sup>2</sup>  | 1000 mm      |
| 3       | SD       | Shut down                | blue   | 1,5 mm <sup>2</sup> | 1000 mm      |
| 4       | Vo-      | Output voltage negative  | black  | 2.5 mm <sup>2</sup> | 1000 mm      |
| 5       | Vo+      | Output voltage positive  | red    | 2.5 mm <sup>2</sup> | 1000 mm      |

### Mechanical dimensions and Pin configuration

All dimensions in mm

Connector type: cable

Case: FMC 130x130x28



This datasheet is preliminary. Specs may vary.

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