



### FEATURES

- RoHS compliant
- Efficiency to 80%
- Power density up to 0.85W/cm<sup>3</sup>
- Wide temperature performance at full 1 Watt load, -40°C to 85°C
- UL 94V-0 package material
- No heatsink required
- Footprint from 1.17cm<sup>2</sup>
- Industry standard pinout
- 3kVDC isolation (1 minute)
- Internal SMD construction
- Fully encapsulated with toroidal magnetics
- No external components required
- No electrolytic or tantalum capacitors

### DESCRIPTION

CD1329C is a custom 1W DC/DC converter, offering 5V input with output of 5V at 1W.

### SELECTION GUIDE

| Order Code     | Nominal Input Voltage | Output Voltage | Output Current | Load Regulation (Typ.) | Load Regulation (Max.) | Ripple & Noise (Typ.) | Ripple & Noise (Max.) | Efficiency |
|----------------|-----------------------|----------------|----------------|------------------------|------------------------|-----------------------|-----------------------|------------|
|                | V                     | V              | mA             | %                      |                        | mVp-p                 |                       | % (Min.)   |
| <b>CD1329C</b> | 5                     | 5              | 200            | 5.5                    | 8.0                    | 125                   | 150                   | 70         |

When operated **with** additional external load capacitance the rise time of the input voltage will determine the maximum external capacitance value for guaranteed start up. The slower the rise time of the input voltage the greater the maximum value of the additional external capacitance for reliable start up.

### INPUT CHARACTERISTICS

| Parameter                | Conditions           | Min. | Typ. | Max. | Units  |
|--------------------------|----------------------|------|------|------|--------|
| Voltage range            | Continuous operation | 4.5  | 5    | 5.5  | V      |
| Reflected ripple current |                      |      | 20   | 40   | mA p-p |

### ABSOLUTE MAXIMUM RATINGS

|   |          |
|---|----------|
| Short-circuit protection <sup>1</sup>           | 1 second |
| Lead temperature 1.5mm from case for 10 seconds | 300°C    |
| Internal power dissipation                      | 560mW    |
| Input voltage V <sub>IN</sub>                   | 7V       |

### OUTPUT CHARACTERISTICS

| Parameter                  | Conditions                                  | Min. | Typ. | Max. | Units |
|----------------------------|---|------|------|------|-------|
| Rated Power <sup>2</sup>   | T <sub>A</sub> =-40°C to 120°C              |      |      | 1    | W     |
| Voltage Set Point Accuracy | See tolerance envelope                      |      |      |      |       |
| Line regulation            | High V <sub>IN</sub> to low V <sub>IN</sub> |      | 1.06 | 1.1  | %/%   |

### ISOLATION CHARACTERISTICS

| Parameter              | Conditions                | Min. | Typ. | Max. | Units |
|------------------------|---------------------------|------|------|------|-------|
| Isolation test voltage | Flash tested for 1 minute | 3000 |      |      | VDC   |
| Resistance             | Viso= 1000VDC             | 10   |      |      | GΩ    |

### GENERAL CHARACTERISTICS

| Parameter           | Conditions | Min. | Typ. | Max. | Units |
|---------------------|------------|------|------|------|-------|
| Switching frequency |            |      | 80   |      | kHz   |

### TEMPERATURE CHARACTERISTICS

| Parameter                      | Conditions          | Min. | Typ. | Max. | Units |
|--------------------------------|---------------------|------|------|------|-------|
| Specification                  | All output types    | -40  |      | 85   | °C    |
| Storage                        |                     | -50  |      | 125  |       |
| Case Temperature above ambient |                     |      |      | 28   |       |
| Cooling                        | Free air convection |      |      |      |       |

### RoHS COMPLIANCE INFORMATION



This DC/DC converter is compatible with RoHS soldering systems with a peak wave solder temperature of 300°C for 10 seconds. The pin termination finish is Tin Plate, Hot Dipped over Matte Tin with Nickel Preplate and is backward compatible with Sn/Pb soldering systems.

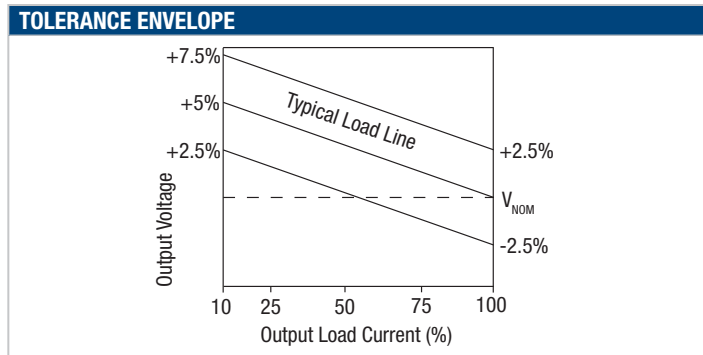
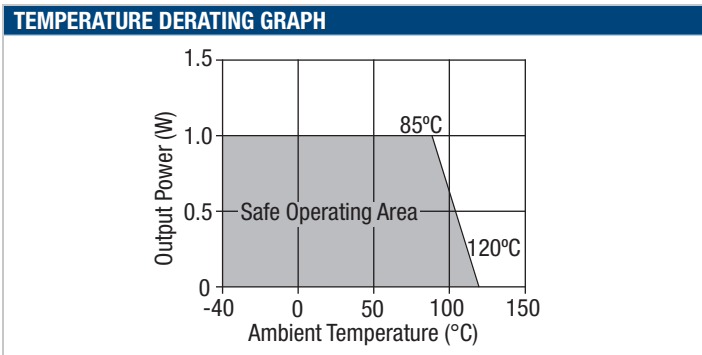
For further information, please visit [www.murata-ps.com/rohs](http://www.murata-ps.com/rohs)



For full details go to [www.murata-ps.com/rohs](http://www.murata-ps.com/rohs)

1. Supply voltage must be discontinued at the end of the short circuit duration.

All specifications typical at T<sub>A</sub>=25°C, nominal input voltage and rated output current unless otherwise specified.



**TECHNICAL NOTES**

**ISOLATION VOLTAGE**

'Hi Pot Test', 'Flash Tested', 'Withstand Voltage', 'Proof Voltage', 'Dielectric Withstand Voltage' & 'Isolation Test Voltage' are all terms that relate to the same thing, a test voltage, applied for a specified time, across a component designed to provide electrical isolation, to verify the integrity of that isolation.

Murata Power Solutions CD1329C DC/DC converter is 100% production tested at their stated isolation voltage. This is 3kVDC for 1 minute.

A question commonly asked is, "What is the continuous voltage that can be applied across the part in normal operation?"

For a part holding no specific agency approvals, such as the CD1329C, both input and output should normally be maintained within SELV limits i.e. less than 42.4V peak, or 60VDC. The isolation test voltage represents a measure of immunity to transient voltages and the part should never be used as an element of a safety isolation system. The part could be expected to function correctly with several hundred volts offset applied continuously across the isolation barrier; but then the circuitry on both sides of the barrier must be regarded as operating at an unsafe voltage and further isolation/insulation systems must form a barrier between these circuits and any user-accessible circuitry according to safety standard requirements.

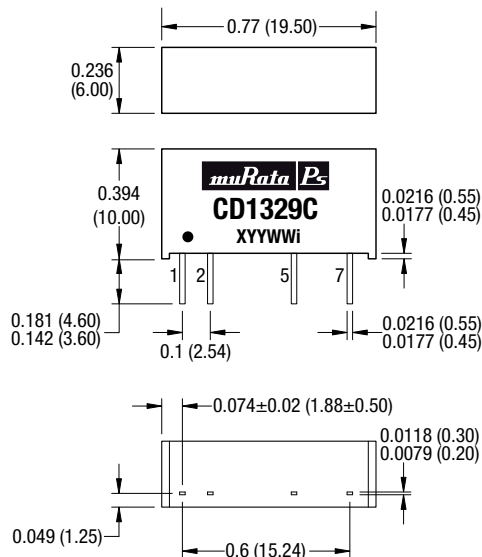
**REPEATED HIGH-VOLTAGE ISOLATION TESTING**

It is well known that repeated high-voltage isolation testing of a barrier component can actually degrade isolation capability, to a lesser or greater degree depending on materials, construction and environment. CD1329C has toroidal isolation transformers, with no additional insulation between primary and secondary windings of enameled wire. While parts can be expected to withstand several times the stated test voltage, the isolation capability does depend on the wire insulation. Any material, including this enamel (typically polyurethane) is susceptible to eventual chemical degradation when subject to very high applied voltages thus implying that the number of tests should be strictly limited. We therefore strongly advise against repeated high voltage isolation testing, but if it is absolutely required, that the voltage be reduced by 20% from specified test voltage.

This consideration equally applies to agency recognized parts rated for better than functional isolation where the wire enamel insulation is always supplemented by a further insulation system of physical spacing or barriers.

**PACKAGE SPECIFICATIONS**

**MECHANICAL DIMENSIONS**

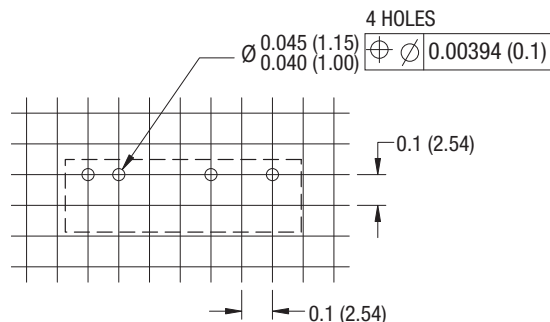


| 7 Pin SIP |          |
|-----------|----------|
| Pin       | Function |
| 1         | +VIN     |
| 2         | -VIN     |
| 5         | -VOUT    |
| 7         | +VOUT    |

All dimensions in inches ±0.01 (mm ±0.25mm). All pins on a 0.1 (2.54) pitch and within ±0.01 (0.25) of true position.

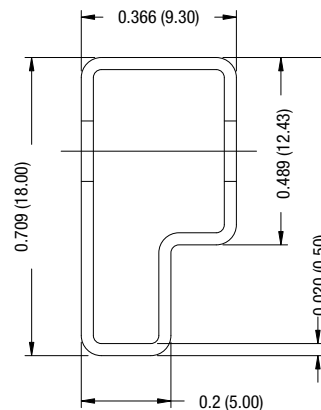
Weight: 2.1g

**RECOMMENDED FOOTPRINT DETAILS**



Unless otherwise stated all dimensions in inches (mm) ±0.5mm.

**TUBE OUTLINE DIMENSIONS**



Unless otherwise stated all dimensions in inches (mm) ±0.5mm.  
Tube length : 20.47 (520mm ±2mm).

Tube Quantity : 25

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