### FEATURES
- RoHS compliant
- Maxim MAX250/MAX251 compatible
- Isolation to 4kVrms
- Industry-standard pinout
- Surface-mount option
- UL 94 V-0 package materials
- Low profile
- Toroidal construction
- Fully encapsulated
- Industrial temperature range

### DESCRIPTION
The 78250 series of converter transformers are specifically designed for use with Maxim chipsets to provide isolated RS232 interfaces. Carefully controlled turns ratios ensure consistent performance whilst a toroidal construction minimises EMI.

**Surface-mount parts**
The surface-mount (M suffix) products are not recommended for new designs. For existing designs, however, Murata Power Solutions will continue to manufacture and fully support these parts.

For recommended alternatives please refer to the 78250J Series datasheet.

### ORDER CODE DETAILS
<table>
<thead>
<tr>
<th>Order Code</th>
<th>Package Type</th>
<th>Packaging Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>78250C / 78250VC</td>
<td>6 Pin DIL</td>
<td>Tube</td>
<td>50</td>
</tr>
<tr>
<td>78250MC / 78250MVC</td>
<td>6 Pin SM</td>
<td>Tube</td>
<td>50</td>
</tr>
<tr>
<td>78250MC-R / 78250MVC-R</td>
<td>6 Pin SM</td>
<td>Tape &amp; Reel</td>
<td>500</td>
</tr>
</tbody>
</table>

### ABSOLUTE MAXIMUM RATINGS
- Operating free air temperature range
  -40°C to 85°C
- Storage temperature range
  -50°C to 125°C
- Lead temperature 1.5mm from case for 10 seconds
  300°C
- Peak current, Ipk
  300mA
- Isolation voltage 78250(M)/C (flash tested for 1 second)
  1.5kVrms
- Isolation voltage 78250(M)/C (flash tested for 1 second)
  4.0kVrms

All specifications typical at Tref = 25°C

### TECHNICAL NOTES
#### ISOLATION VOLTAGE
- ‘Hi Pot Test’, ‘Flash Test’, ‘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.

- 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 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.

- 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. This series has toroidal isolation transformers, with no additional insulation between primary and secondary windings of enamelled 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 recognised 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.

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**www.murata-ps.com/rohs**

**www.murata-ps.com**

**www.murata.com**
78250 Series
MAX250/MAX251 Compatible Converter Transformers

PACKAGE SPECIFICATIONS

MECHANICAL DIMENSIONS

6 Pin DIL

6 Pin SM

RECOMMENDED FOOTPRINT DETAILS

6 Pin DIL

6 Pin SM

TUBE OUTLINE DIMENSIONS

SOLDERING INFORMATION

Pin finish
Matte tin

Peak wave solder temperature
300°C for 10 seconds

Peak reflow temperature
220°C²

1 For further information, please visit www.murata-ps.com/rohs
2 For high temperature reflow parts see 78250J Series.

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

* Pin 5 is connected to secondary center tap. Package Weight 1.0g TYP.

Unless otherwise stated all dimensions in inches (mm) ±0.01 (0.25). All pins on a 0.1 (2.54) pitch and within ±0.01 (0.25) of true position.
TAPE & REEL SPECIFICATIONS

TAPE OUTLINE DIMENSIONS

Unless otherwise stated all dimensions in inches (mm) ±0.01(0.25).

* Includes flange distortion at outer edge.
† Measured at hub.

REEL OUTLINE DIMENSIONS

Unless otherwise stated all dimensions in inches (mm) ±0.01(0.25).
DISCLAIMER

Unless otherwise stated in the datasheet, all products are designed for standard commercial and industrial applications and NOT for safety-critical and/or life-critical applications.

Particularly for safety-critical and/or life-critical applications, i.e. applications that may directly endanger or cause the loss of life, inflict bodily harm and/or loss or severe damage to equipment/property, and severely harm the environment, a prior explicit written approval from Murata is strictly required. Any use of Murata standard products for any safety-critical, life-critical or any related applications without any prior explicit written approval from Murata shall be deemed unauthorised use.

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- Aircraft equipment
- Aerospace equipment
- Undersea equipment
- Power plant control equipment
- Medical equipment
- Transportation equipment (automobiles, trains, ships, etc.)
- Traffic signal equipment
- Disaster prevention / crime prevention equipment
- Data Processing equipment

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