Silicon Variable Capacitance Diode

Description
The 1T362 is a variable capacitance diode designed for electronic tuning of TV tuners, and the super miniature package allows the tuner miniaturization.

Features
• Super miniature package
• Low series resistance 0.65 Ω Max. (f=470 MHz)
• Large capacitance ratio 6.5 Typ. (C2/C25)
• Small leakage current 10 nA Max. (VR=28 V)
• Maximum capacitance deviation 3 % Max.

Applications
Electronic tuning for TV and CATV

Structure
Silicon epitaxial planar type diode

Absolute Maximum Ratings (Ta=25 °C)
• Reverse voltage VR 30 V
• Peak reverse voltage VRM 35 V (RL≥10 kΩ)
• Operating temperature Topr 85 °C
• Storage temperature Tstg -55 to +150 °C

Electrical Characteristics (Ta=25 °C)

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Conditions</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverse current</td>
<td>IR</td>
<td>VR=28 V</td>
<td></td>
<td></td>
<td></td>
<td>nA</td>
</tr>
<tr>
<td>Diode capacitance</td>
<td>C2</td>
<td>VR=2 V, f=1 MHz</td>
<td>14.01</td>
<td>15.00</td>
<td>16.33</td>
<td>pF</td>
</tr>
<tr>
<td></td>
<td>C25</td>
<td>VR=25 V, f=1 MHz</td>
<td>2.10</td>
<td>2.27</td>
<td>2.39</td>
<td>pF</td>
</tr>
<tr>
<td>Capacitance ratio</td>
<td>C2/C25</td>
<td>f=1 MHz</td>
<td>6.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Series resistance</td>
<td>rs</td>
<td>CD=14 pF, f=470 MHz</td>
<td>0.57</td>
<td>0.65</td>
<td></td>
<td>Ω</td>
</tr>
<tr>
<td>Maximum-capacitance deviation in the same ranking</td>
<td>ΔC</td>
<td>VR=2 to 25 V, f=1 MHz</td>
<td></td>
<td></td>
<td>3</td>
<td>%</td>
</tr>
</tbody>
</table>
Diode capacitance vs. Reverse voltage

- Diode capacitance (pF) vs. Reverse voltage (V)
- Ta = 25°C
- f = 1 MHz

Reverse voltage vs. Ambient temperature

- Reverse voltage (V) vs. Ambient temperature (°C)
- IR = 10 µA
- Ta = 25°C
Diode capacitance vs. Ambient temperature

Reverse current vs. Reverse voltage

Thermal coefficient of diode capacitance

Reverse current vs. Ambient temperature
Package Outline  Unit: mm

M-235

NOTE: Dimension "∗" does not include mold protrusion.

<table>
<thead>
<tr>
<th>SONY CODE</th>
<th>M-235</th>
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<tbody>
<tr>
<td>EIAJ CODE</td>
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<tr>
<td>JEDEC CODE</td>
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</tbody>
</table>

| PACKAGE WEIGHT | 0.1g |

Marking

CATHODE MARK

62

B

Notes
1) B: Lot No. (Year and Month of manufacture)
   Year: Last one digit
   Month: A, B, C (for Oct. to Dec.)
   1 to 9 (for Jan. to Sept.)