

Variable Capacitance Diode

Description

The 1T387 is a variable capacitance diode designed for electronic tuning of BS and CS tuners using a super miniature package (SMVC).

Features

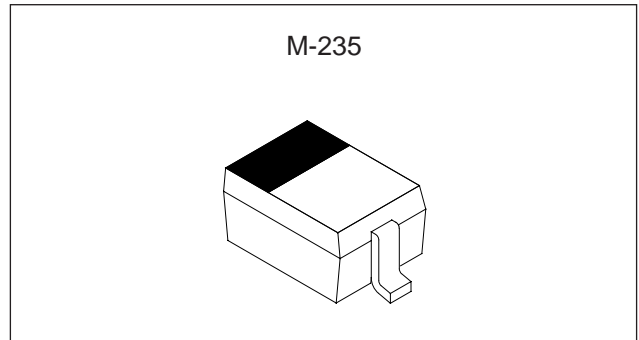
- Super miniature package
- Low series resistance: 1.5Ω Max. (f = 470MHz)
- Large capacitance ratio: 14.6 Typ. (C₁/C₂₅)
- Small leakage current: 10nA Max. (V_R = 25V)
- Capacitance deviation in a matching group: within 6%

Applications

Electronic tuning of BS and CS tuners

Structure

Silicon epitaxial planar type diode



Absolute Maximum Ratings (Ta = 25°C)

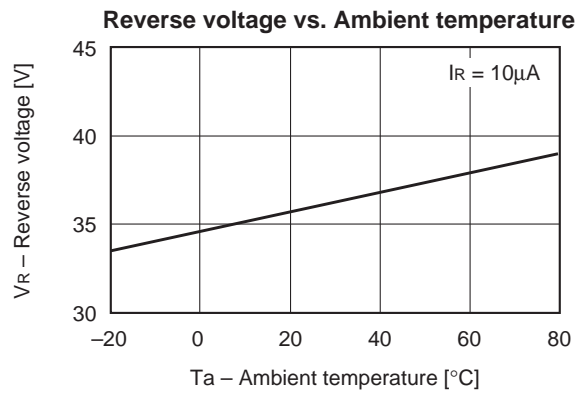
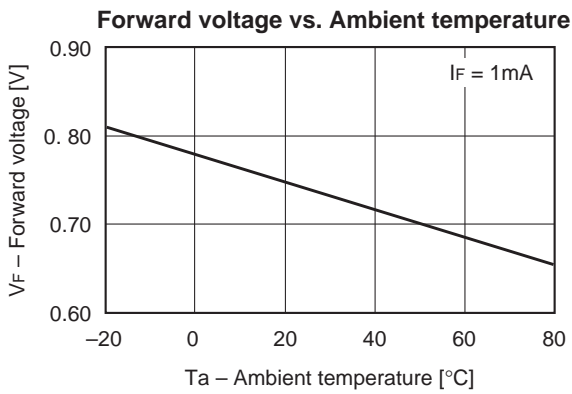
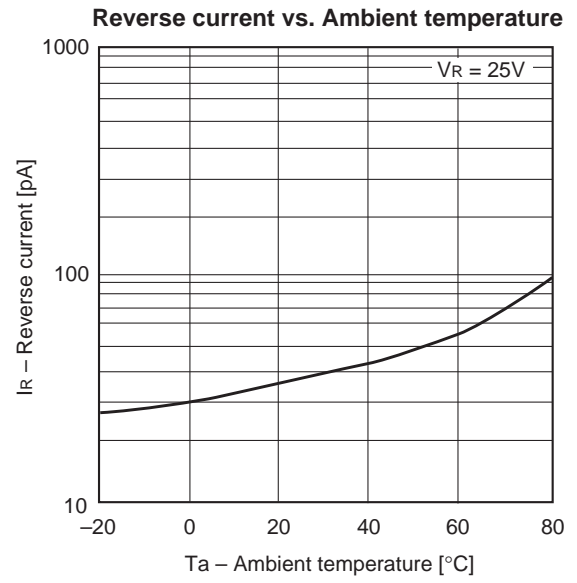
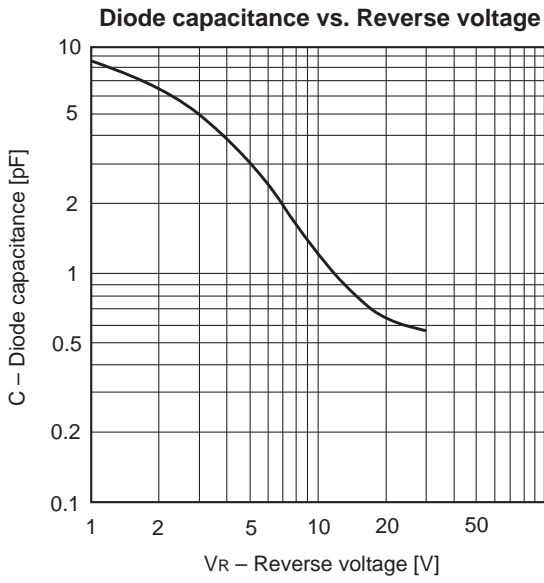
- Reverse voltage V_R 30 V
- Peak reverse voltage V_{RM} 35 V (R_L ≥ 10kΩ)
- Operating temperature Topr -20 to +75 °C
- Storage temperature Tstg -65 to +150 °C

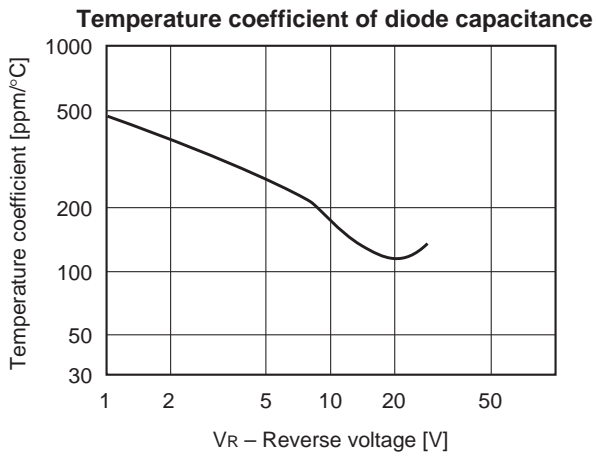
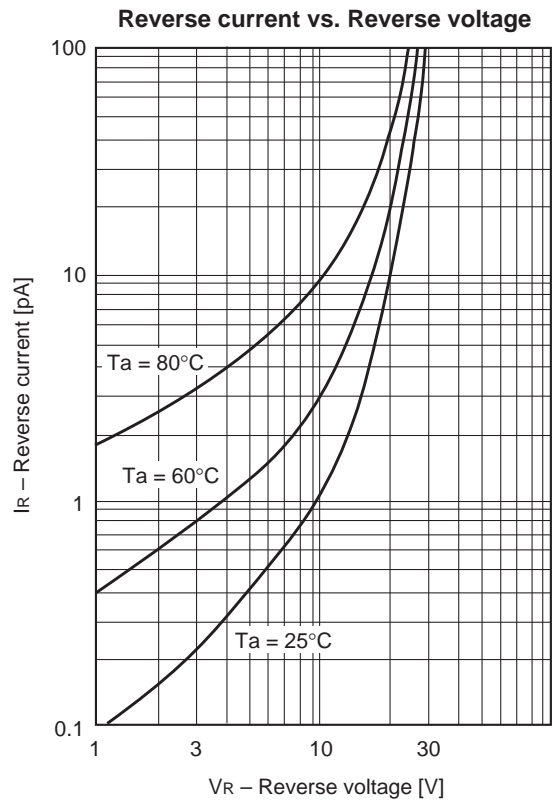
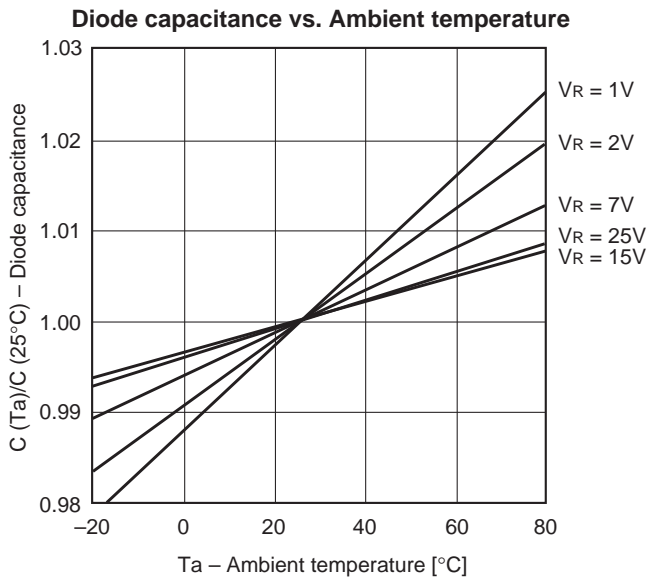
Electrical Characteristics

(Ta = 25°C)

| Item | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---------------------------------|-------------------------------------|------|------|------|------|
| Reverse voltage | V _R | I _R = 1μA | 30.0 | | | V |
| Reverse current | I _R | V _R = 25V | | | 10.0 | nA |
| Diode capacitance | C ₁ | V _R = 1V, f = 1MHz | 7.84 | | 9.44 | pF |
| | C ₂₅ | V _R = 25V, f = 1MHz | 0.54 | | 0.64 | pF |
| Capacitance ratio | C ₁ /C ₂₅ | | 12.2 | 14.6 | | |
| Series resistance | r _s | V _R = 5V, f = 470MHz | | 1.30 | 1.50 | Ω |
| Capacitance deviation in a matching group | ΔC | V _R = 1 to 25V, f = 1MHz | | | 6.0 | % |

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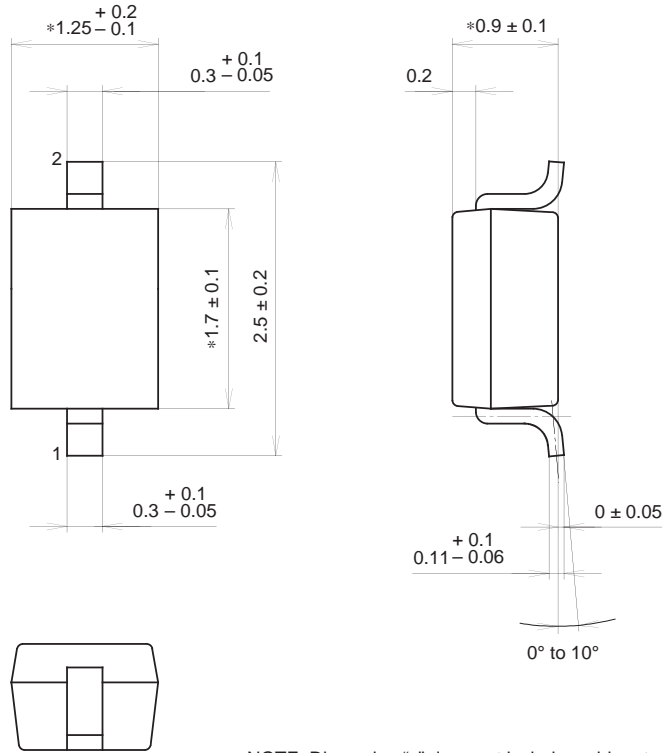




Package Outline

Unit: mm

M-235

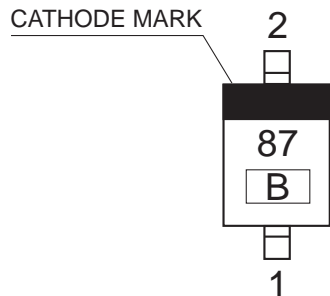


NOTE: Dimension "*" does not include mold protrusion.

| | |
|------------|-------|
| SONY CODE | M-235 |
| EIAJ CODE | _____ |
| JEDEC CODE | _____ |

| | |
|----------------|------|
| PACKAGE WEIGHT | 0.1g |
|----------------|------|

Marking



Note
 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.)