

Variable Capacitance Diode

Description

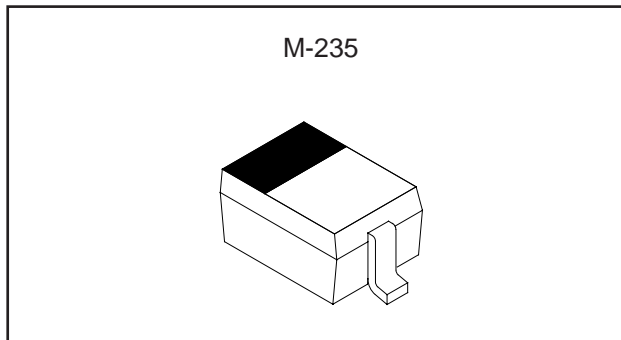
The 1T411 is a variable capacitance diode designed for analog cellular phone and it has a super miniature package.

Features

- Super miniature package
- Small series resistance 0.40 Ω Max. (f=470 MHz)
- Large capacitance ratio 6.5 Typ. (C<sub>2</sub>/C<sub>25</sub>)
- Capacitance deviation in a matching group 3 % (max.)

Structure

Silicon epitaxial planar-type diode



Absolute Maximum Ratings (T<sub>a</sub>=25 °C)

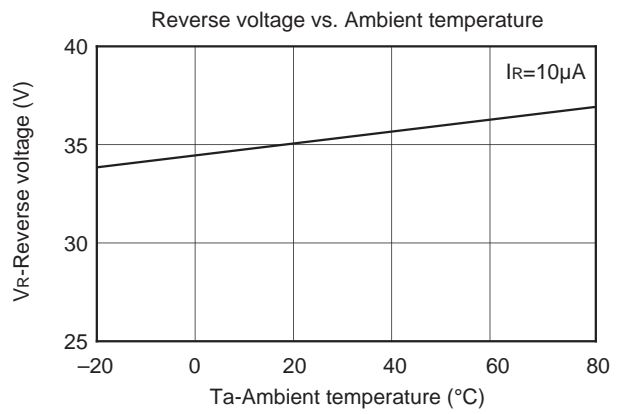
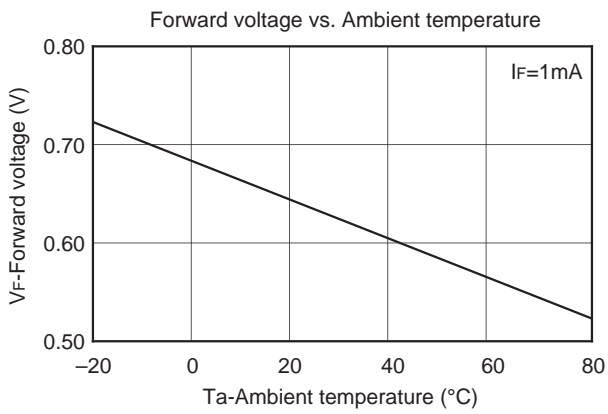
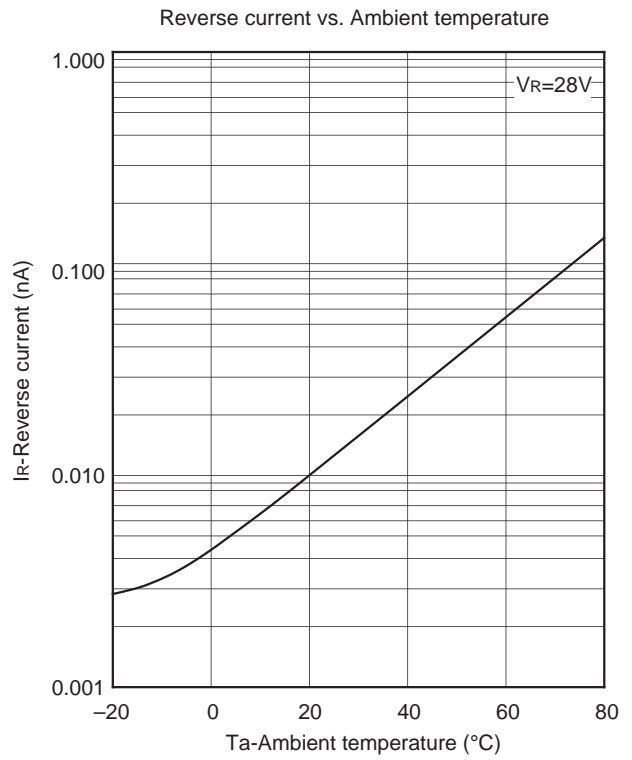
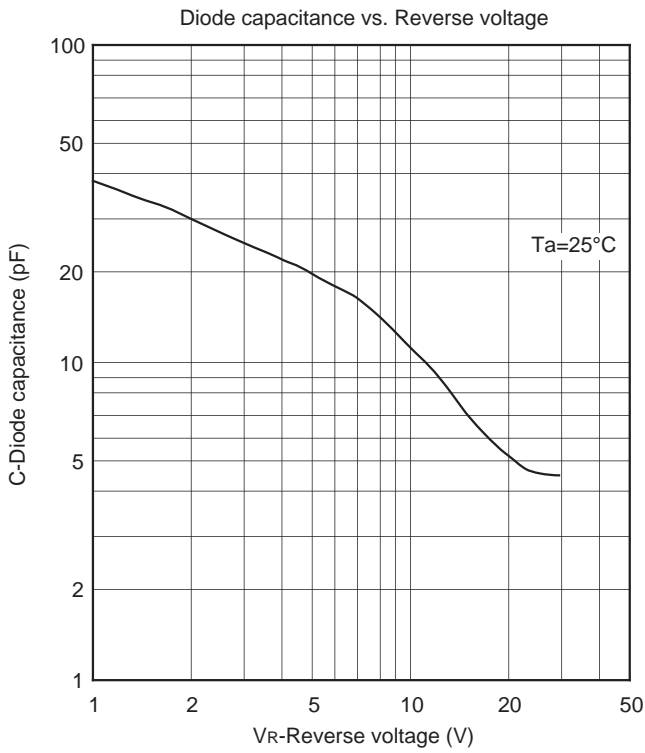
- Reverse voltage V<sub>R</sub> 30 V
- Peak reverse voltage V<sub>RM</sub> 35 V (R<sub>L</sub>≥10 kΩ)
- Operating temperature Topr -20 to +75 °C
- Storage temperature Tstg -65 to +150 °C

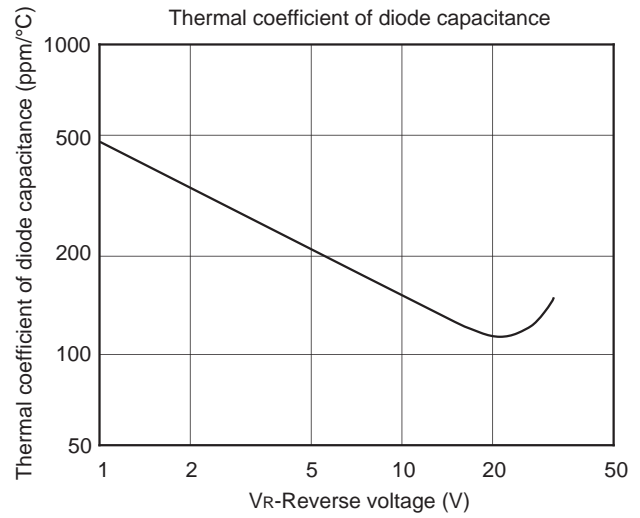
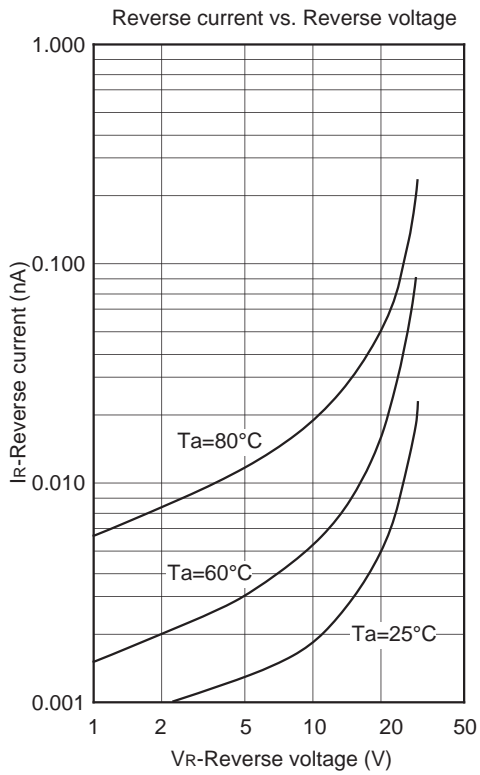
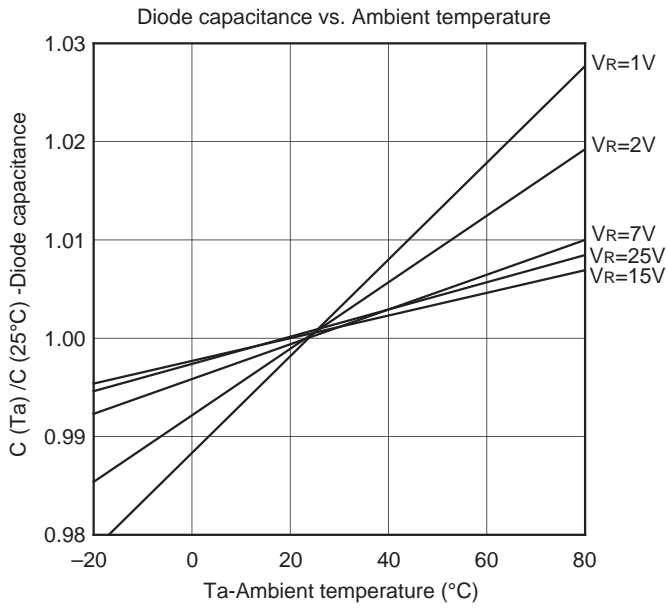
Electrical Characteristics

(T<sub>a</sub>=25 °C)

| Item                                      | Symbol                          | Conditions                         | Min.  | Typ.  | Max.  | Unit |
|---|---------------------------------|------------------------------------|-------|-------|-------|------|
| Reverse current                           | I <sub>R</sub>                  | V <sub>R</sub> =28 V               |       |       | 20    | nA   |
| Diode capacitance                         | C <sub>2</sub>                  | V <sub>R</sub> =2 V, f=1 MHz       | 26.37 | 29.50 | 33.05 | pF   |
|   | C <sub>25</sub>                 | V <sub>R</sub> =25 V, f=1 MHz      | 4.030 | 4.400 | 4.807 | pF   |
| Capacitance ratio                         | C <sub>2</sub> /C <sub>25</sub> | f=1 MHz                            |       | 6.5   |       |      |
| Series resistance                         | r <sub>S</sub>                  | C <sub>D</sub> =14 pF, f=470 MHz   |       | 0.35  | 0.40  | Ω    |
| Capacitance deviation in a matching group | ΔC                              | V <sub>R</sub> =2 to 25 V, f=1 MHz |       |       | 3     | %    |

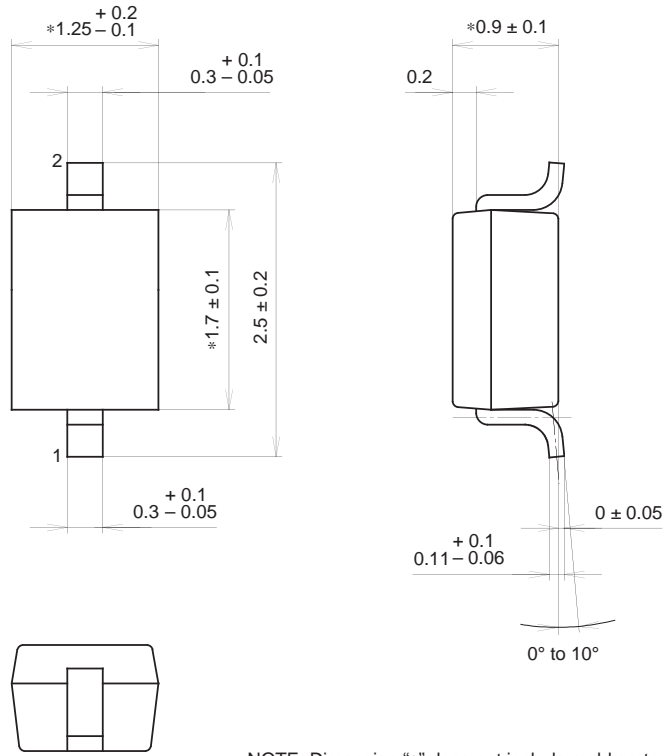
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Package Outline Unit : mm

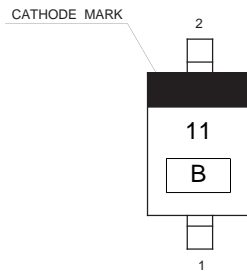
M-235



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

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

Marking



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.)