

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

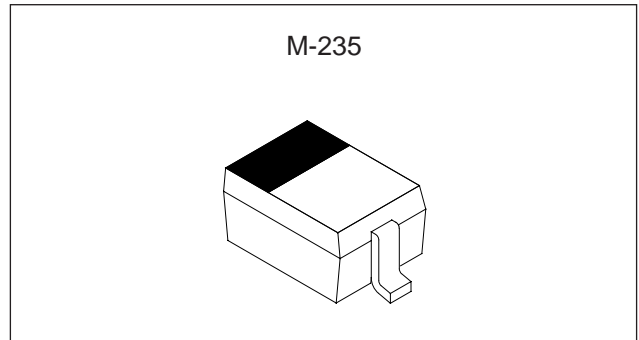
- Super miniature package
- Low series resistance: 1.5Ω Max. (f = 470MHz)
- Large capacitance ratio: 14.6 Typ. (C<sub>1</sub>/C<sub>25</sub>)
- Small leakage current: 10nA Max. (V<sub>R</sub> = 25V)
- Capacitance deviation in a matching group: within 6%

Applications

Electronic tuning of BS and CS tuners

Structure

Silicon epitaxial planar type diode



Absolute Maximum Ratings (Ta = 25°C)

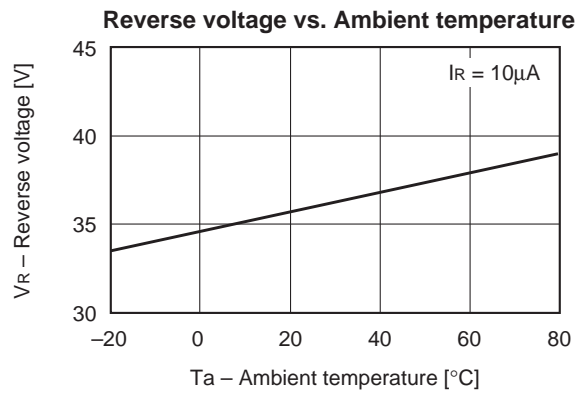
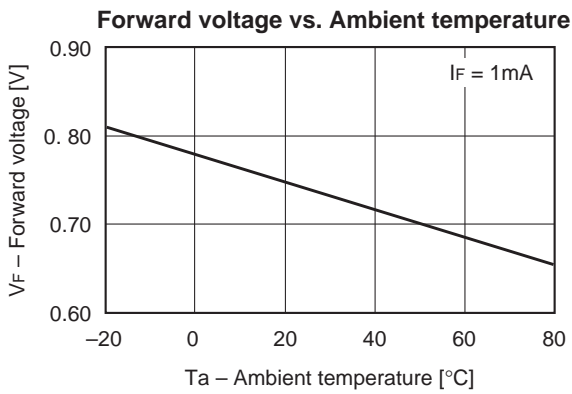
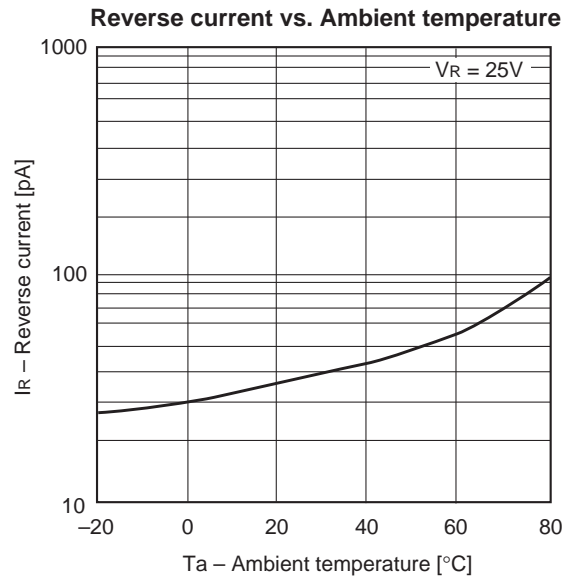
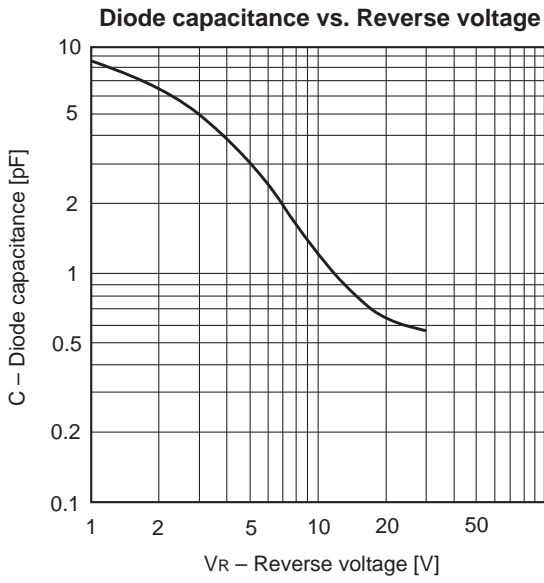
- Reverse voltage V<sub>R</sub> 30 V
- Peak reverse voltage V<sub>RM</sub> 35 V (R<sub>L</sub> ≥ 10kΩ)
- Operating temperature Topr -20 to +75 °C
- Storage temperature Tstg -65 to +150 °C

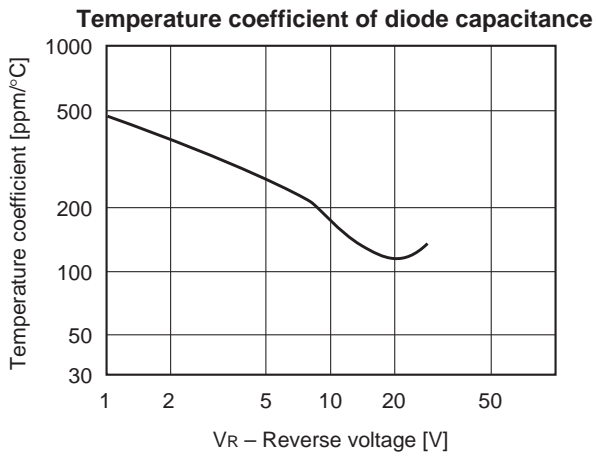
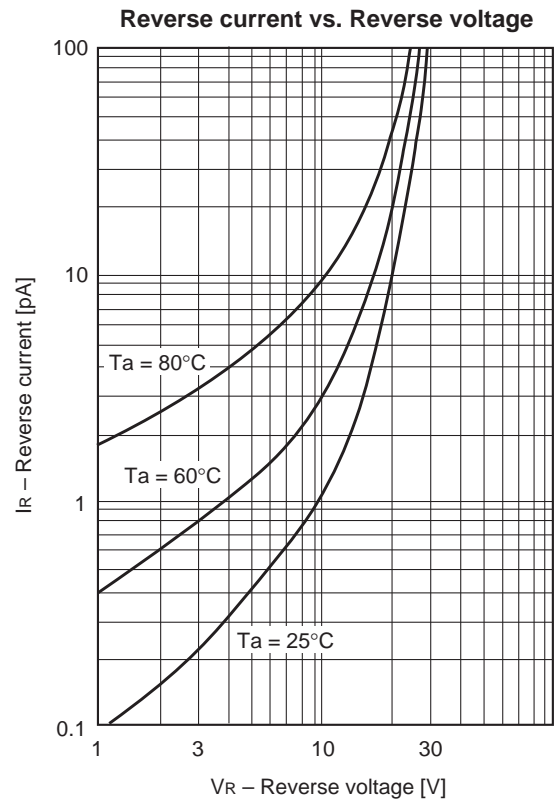
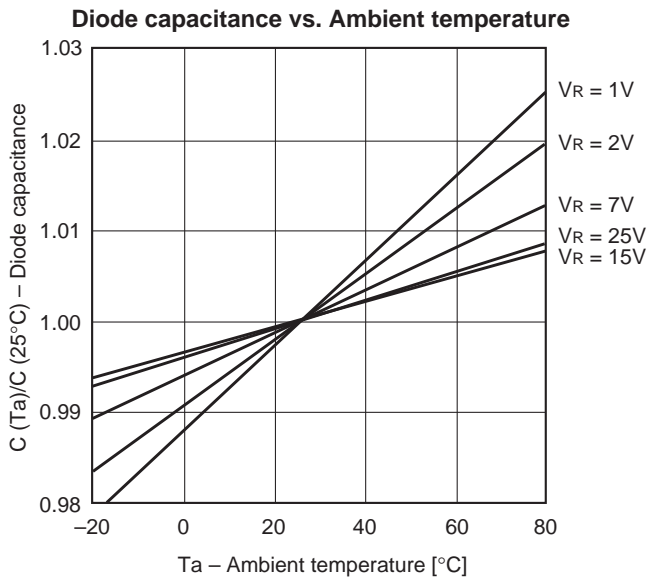
Electrical Characteristics

(Ta = 25°C)

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

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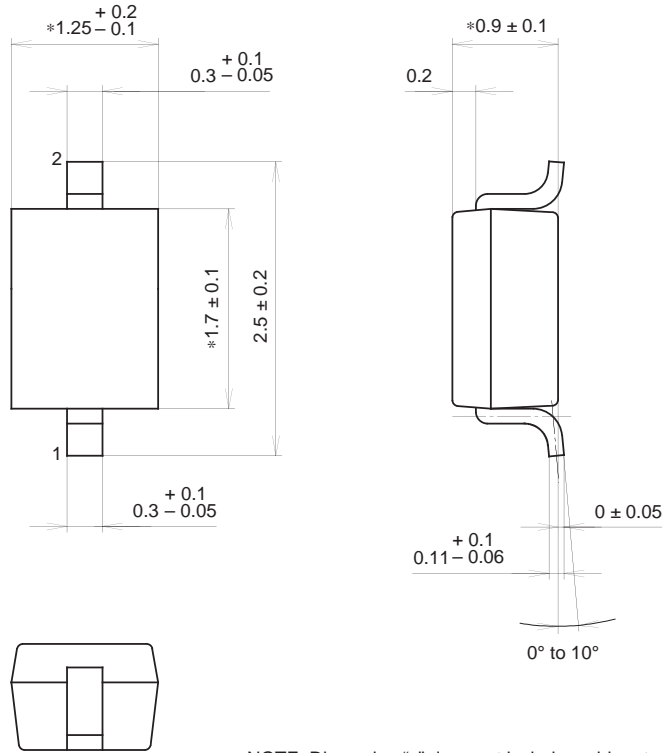




Package Outline

Unit: mm

M-235

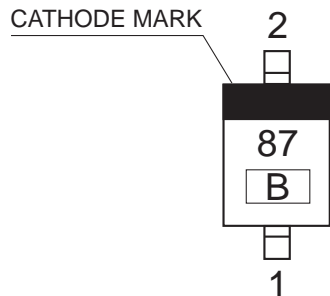


NOTE: Dimension "\*" does not include mold protrusion.

SONY CODE	M-235
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE WEIGHT	0.1g
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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.)