

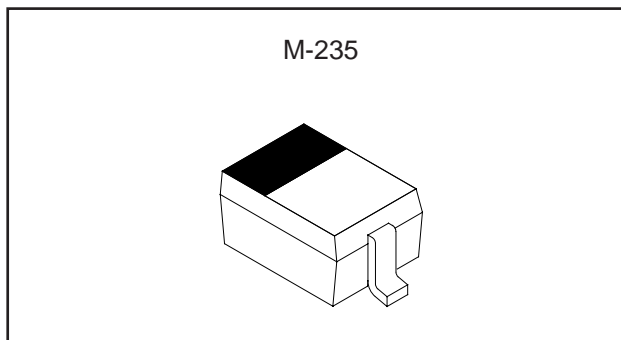
Variable Capacitance Diode

Description

The 1T399 is a variable capacitance diode designed for the electronic tuning of wide-band CATV tuners, and it has a super miniature package.

Features

- Super miniature package
- Small series resistance 0.75 Ω Max. (f=470 MHz)
- Large capacitance ratio 11.7 Typ. (C₂/C₂₅)
18.0 Typ. (C₁/C₂₈)
- Small leak current 10 nA Max. (V_R=28 V)
- Capacitance deviation in a matching group:
within 2 %



Absolute Maximum Ratings (T_a=25 °C)

- Reverse voltage V_R 34 V
- Operating temperature T_{opr} -20 to +75 °C
- Storage temperature T_{stg} -65 to +150 °C

Applications

Electronic tuning of wide-band CATV tuners

Structure

Silicon epitaxial planar-type diode

Electrical Characteristics

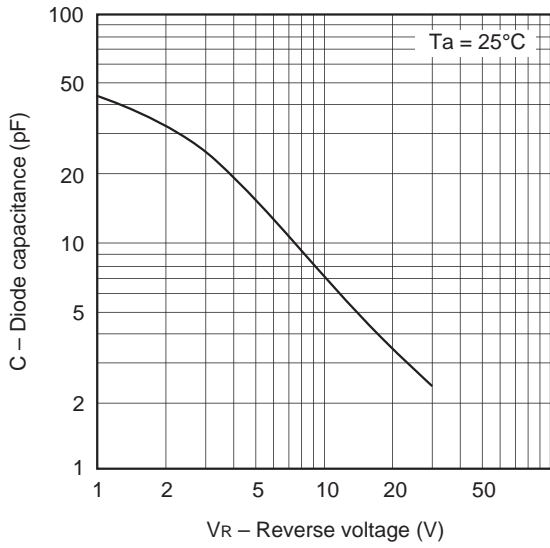
(T_a=25 °C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I _R	V _R =28 V			10	nA
Diode capacitance	C ₂	V _R =2 V, f=1 MHz	29.50		35.50	pF
	C ₂₅	V _R =25 V, f=1 MHz	2.53		2.93	pF
Capacitance ratio	C ₂ /C ₂₅		11.0	11.7		
	C ₂₅ /C ₂₈		1.03			
Series resistance	r _s	C _D =14 pF, f=470 MHz			0.75	Ω
Capacitance deviation in a matching group	Δ C	V _R =2 to 25 V, f=1 MHz			2	%

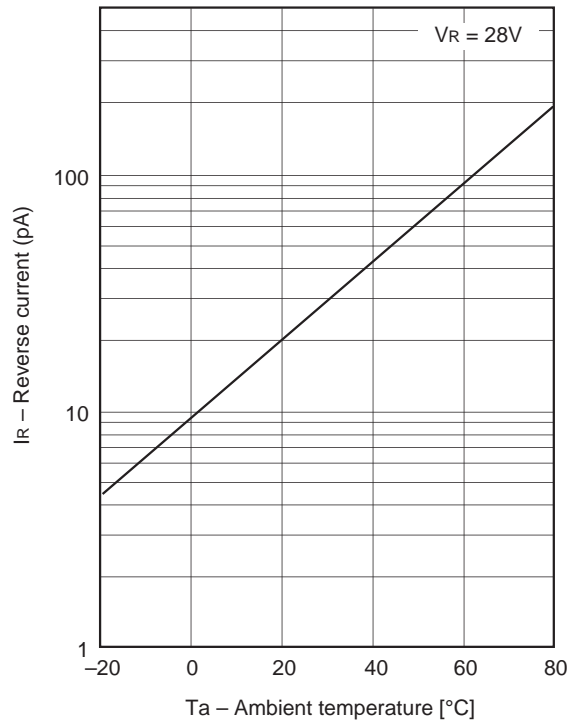
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Example of Representative Characteristics

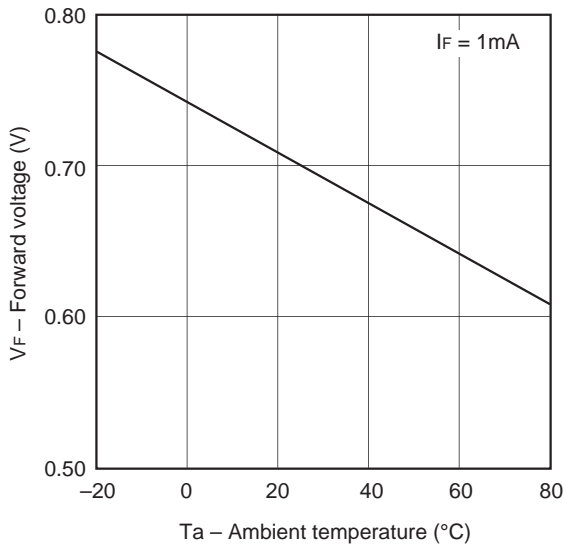
Diode capacitance vs. Reverse voltage



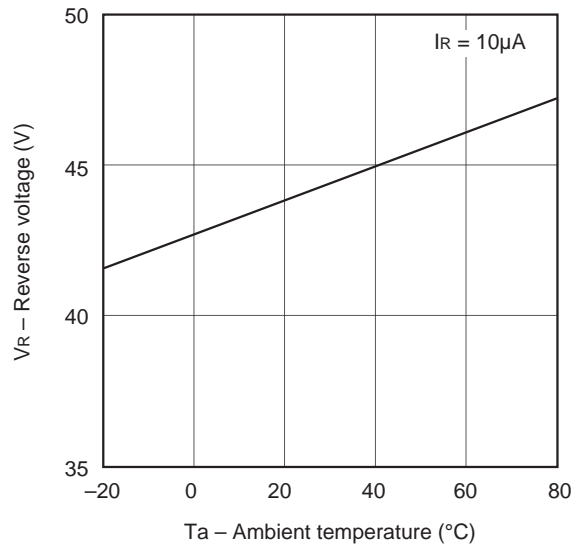
Reverse current vs. Ambient temperature

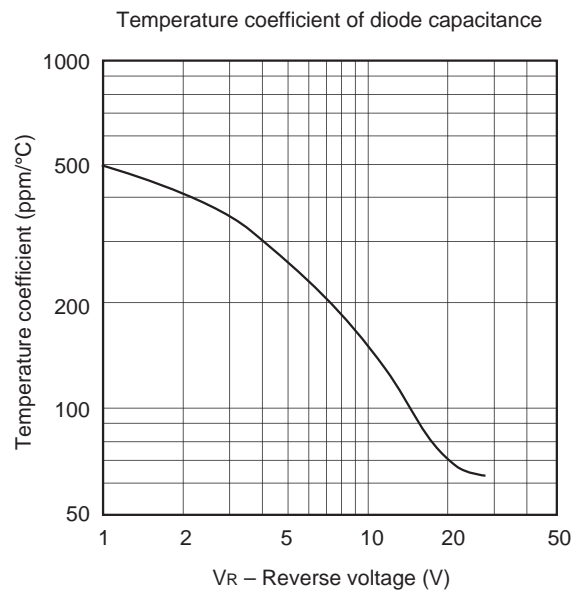
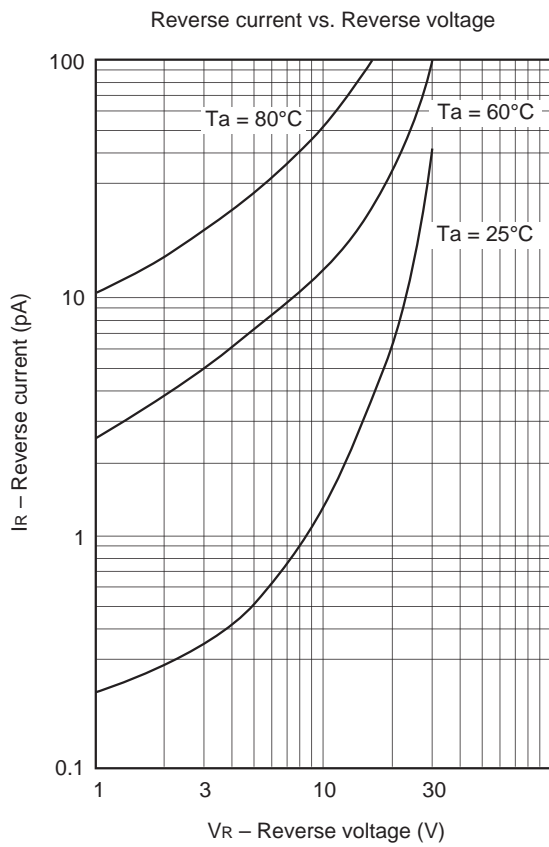
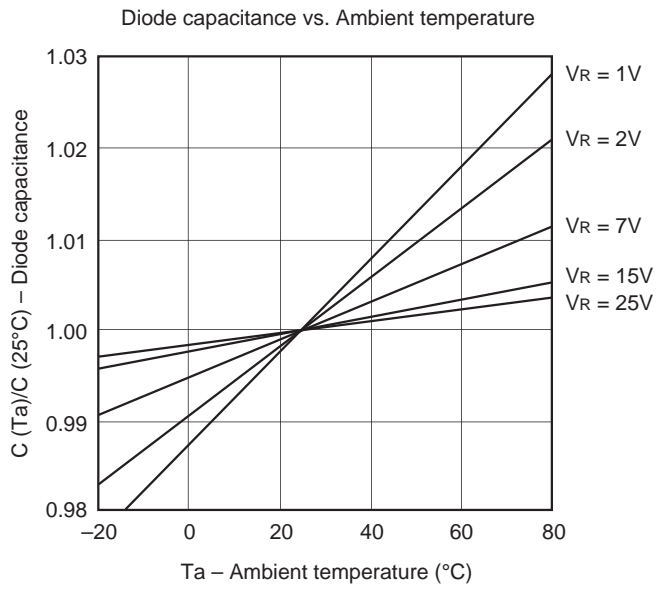


Forward voltage vs. Ambient temperature



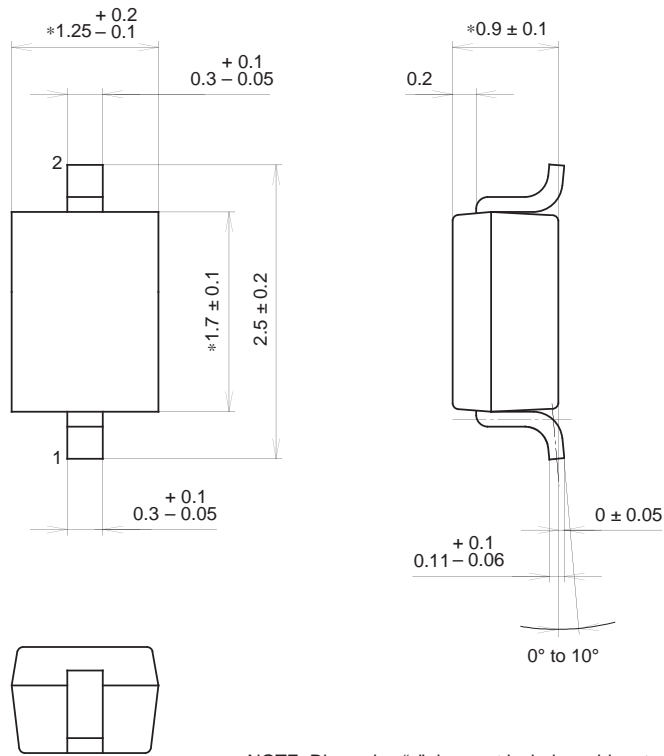
Reverse voltage vs. Ambient temperature





Package Outline Unit : mm

M-235

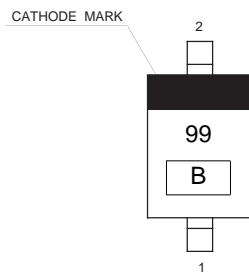


NOTE: Dimension "*" does not include mold protrusion.

SONY CODE	M-235
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE WEIGHT	0.1g
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Marking



- 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.)