

Variable Capacitance Diode

Description

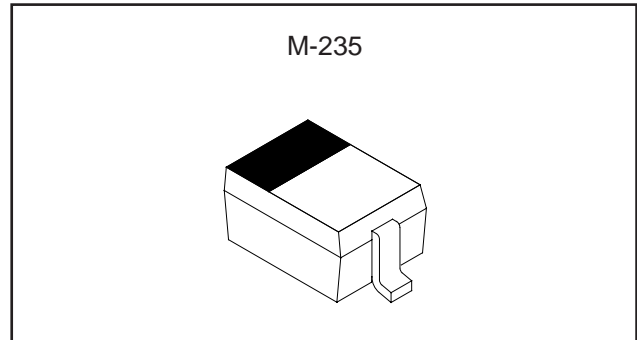
The 1T397 is a variable capacitance diode designed for the electronic tuning of wide band CATV tuners, and it has a super miniature package.

Features

- Super miniature package
- Large capacitance ratio $C_2/C_{25}=14.5$ Min.
 $C_1/C_{28}=21.5$ Min.
 $C_{25}/C_{28}=1.03$ Min.
- Small series resistance $r_s=1.1 \Omega$ Max.
- High reverse voltage $V_R=34$ V

Structure

Silicon epitaxial planar-type diode



Absolute Maximum Ratings (Ta=25 °C)

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

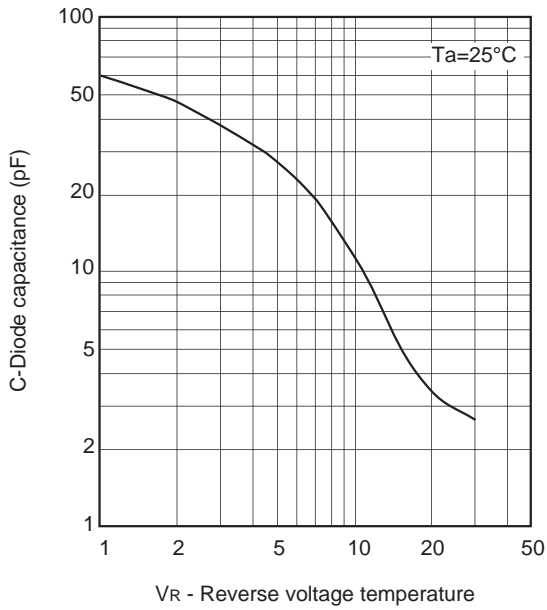
Electrical Characteristics

(Ta=25 °C)

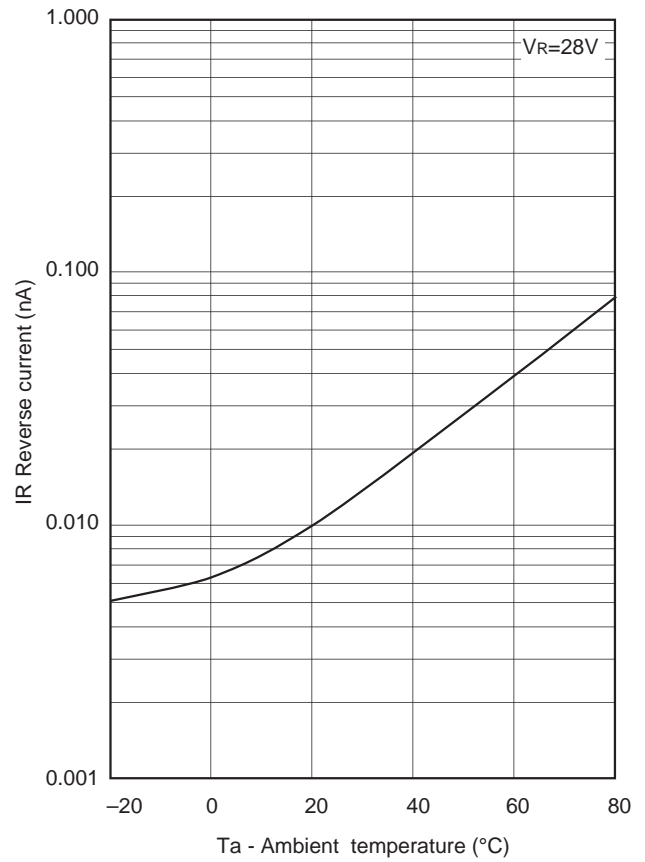
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I_R	$V_R=28$ V			10	nA
Reverse voltage	V_R	$I_R=1 \mu A$	34			V
Diode capacitance	C_2	$V_R=2$ V, $f=1$ MHz	42.9		51.0	pF
	C_{25}	$V_R=25$ V, $f=1$ MHz	2.60		3.03	pF
Capacitance ratio	C_2/C_{25}		14.5	15.5		
	C_1/C_{28}		21.5			
	C_{25}/C_{28}		1.03			
Series resistance	r_s	$C_D=14$ pF, $f=470$ MHz			1.1	Ω
Capacitance deviation in a matching group	ΔC	$V_R=1$ to 28 V			2.0	%

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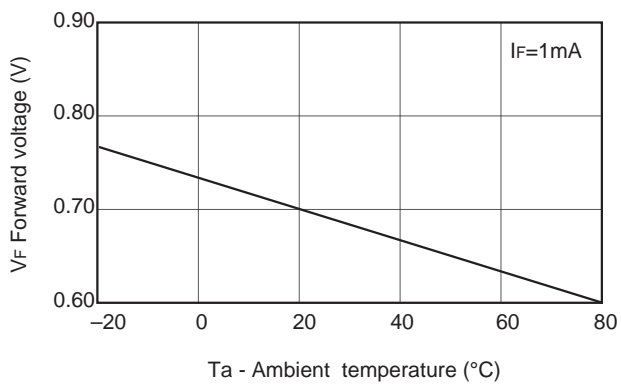
Diode capacitance vs. Reverse voltage temperature



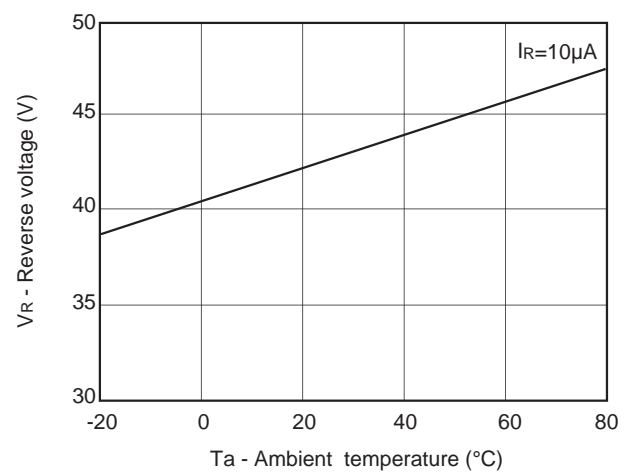
Reverse current vs. Ambient temperature



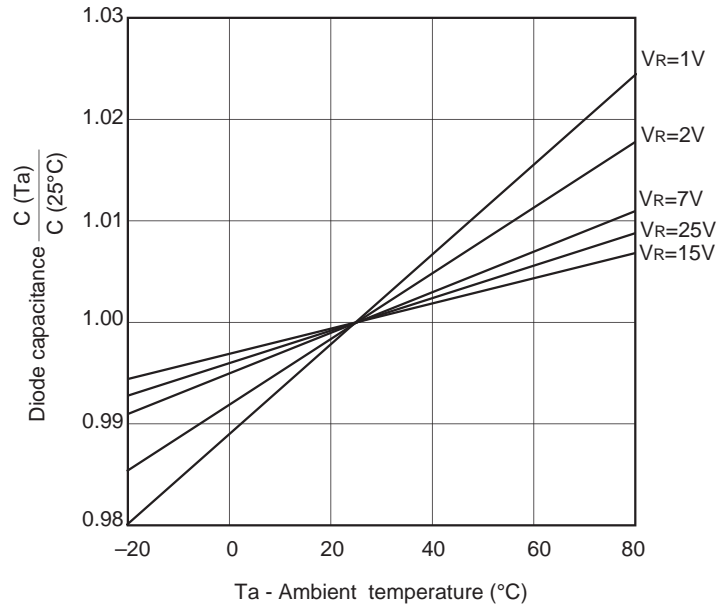
Forward voltage vs. Ambient temperature



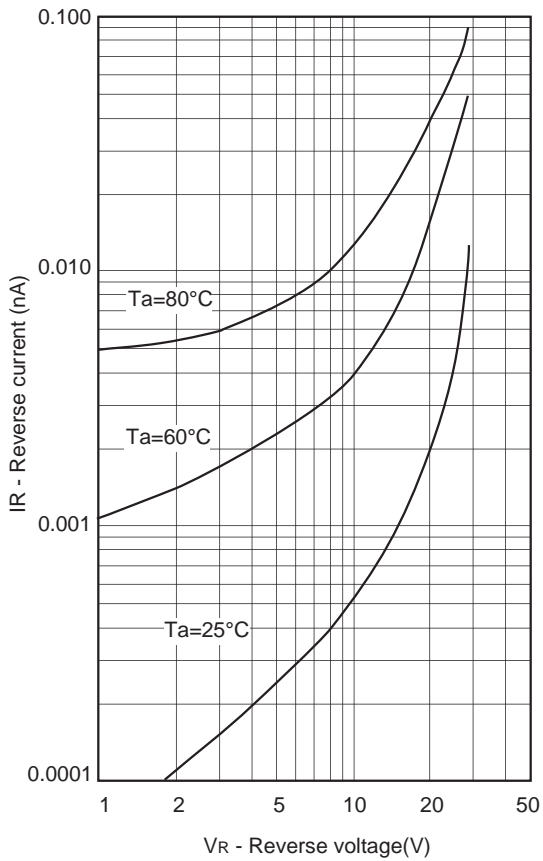
Reverse voltage vs. Ambient temperature



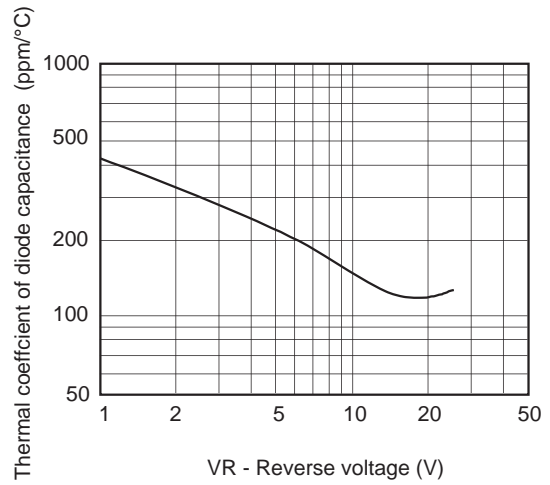
Diode capacitance vs. Ambient temperature



Reverse current vs. Reverse voltage

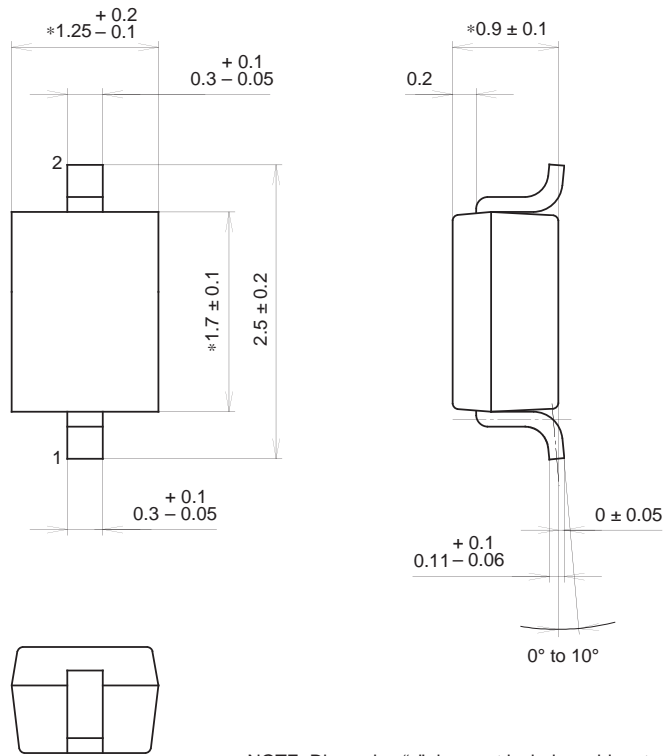


Thermal coefficient of diode capacitance vs. Reverse voltage



Package Outline Unit : mm

M-235

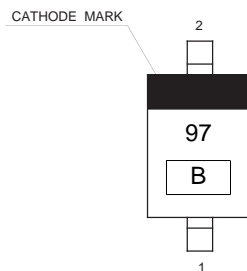


NOTE: Dimension "*" does not include mold protrusion.

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.)