

## Variable Capacitance Diode

### Description

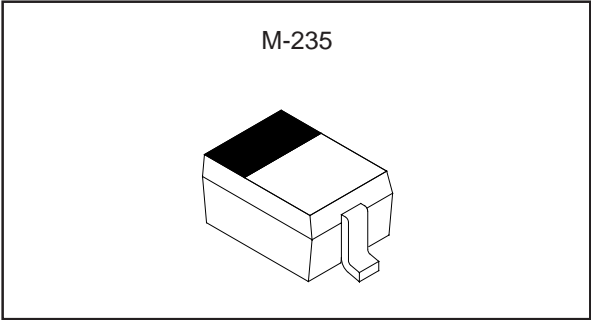
The 1T397 is a variable capacitance diode designed for the electronic tuning of wide band CATV tuners, and it has a super miniature package.

### 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  
Topr -20 to +75 °C
- Storage temperature  
Tstg -65 to +150 °C

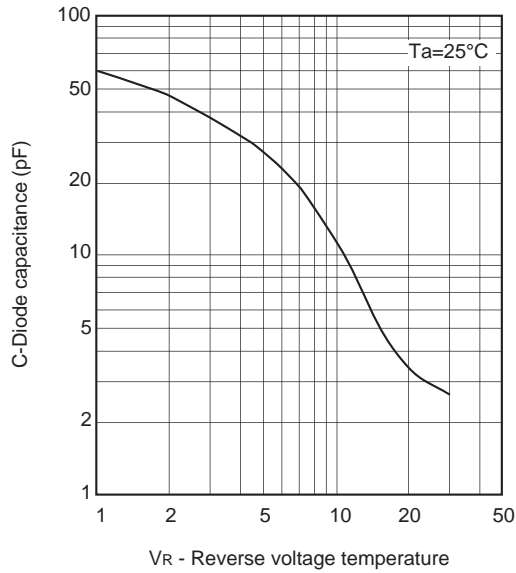
### Electrical Characteristics

(Ta=25 °C)

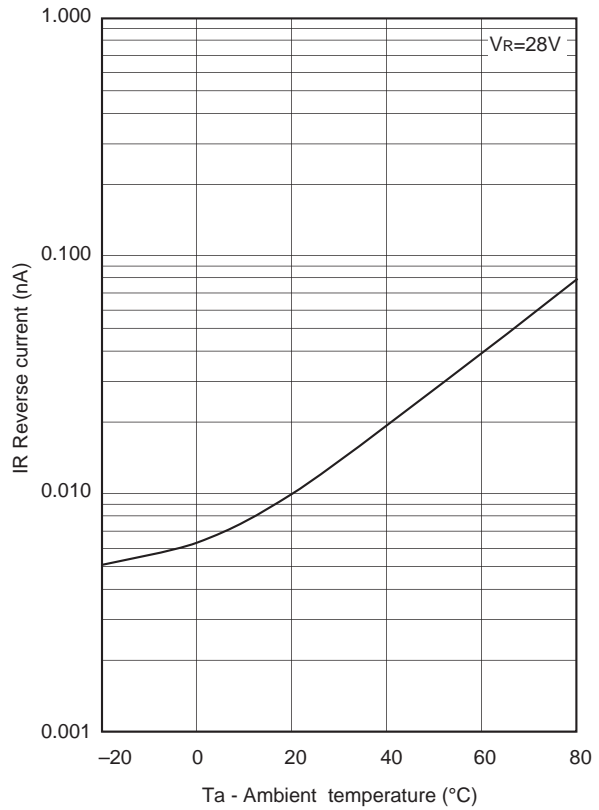
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	$I_R$	$V_R=28$ V			10	nA
Reverse voltage	$V_R$	$I_R=1 \mu A$	34			V
Diode capacitance	$C_2$	$V_R=2$ V, $f=1$ MHz	42.9		51.0	pF
	$C_{25}$	$V_R=25$ V, $f=1$ MHz	2.60		3.03	pF
Capacitance ratio	$C_2/C_{25}$		14.5	15.5		
	$C_1/C_{28}$		21.5			
	$C_{25}/C_{28}$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

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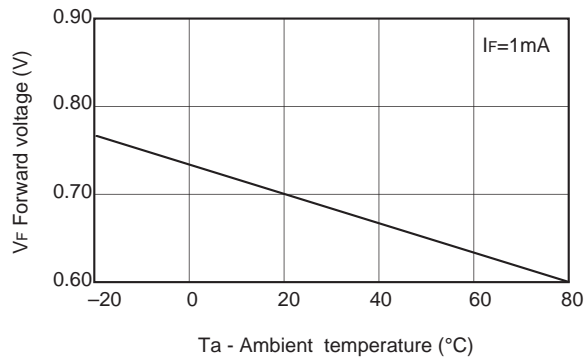
Diode capacitance vs. Reverse voltage temperature



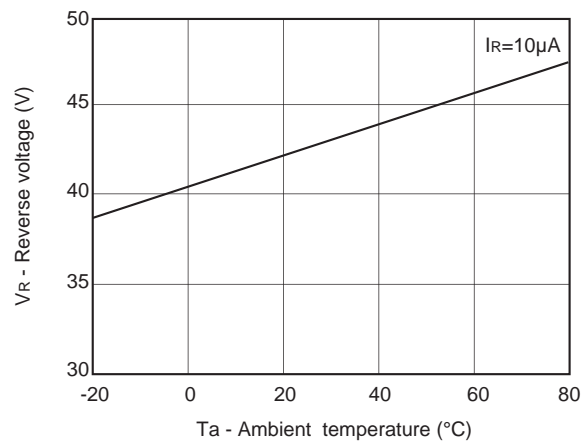
Reverse current vs. Ambient temperature



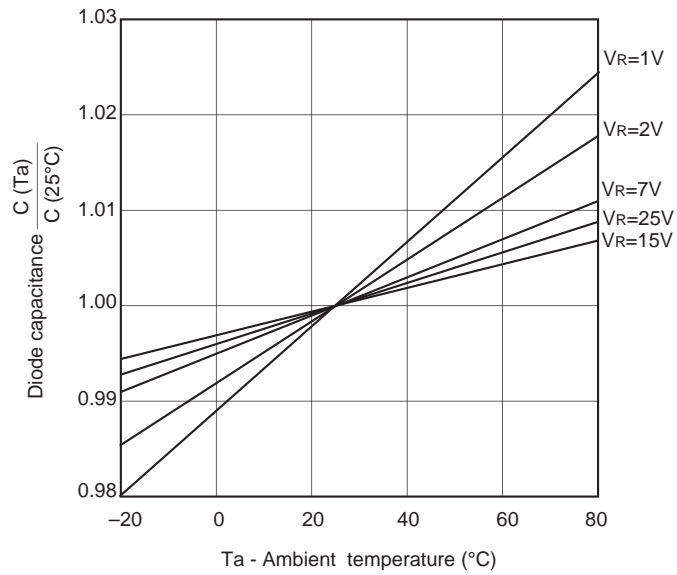
Forward voltage vs. Ambient temperature



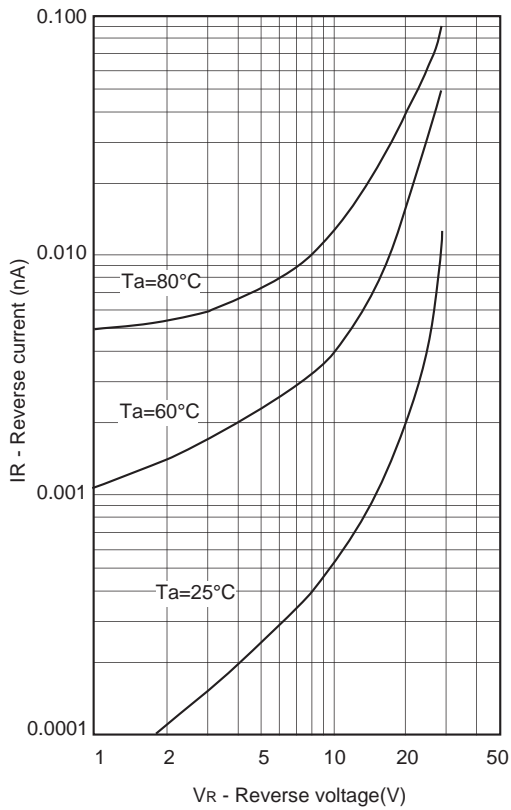
Reverse voltage vs. Ambient temperature



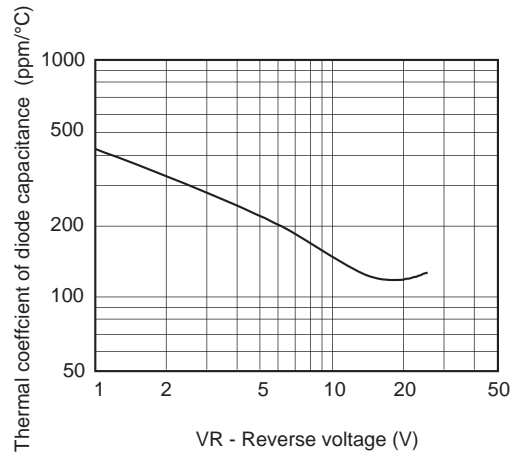
Diode capacitance vs. Ambient temperature



Reverse current vs. Reverse voltage

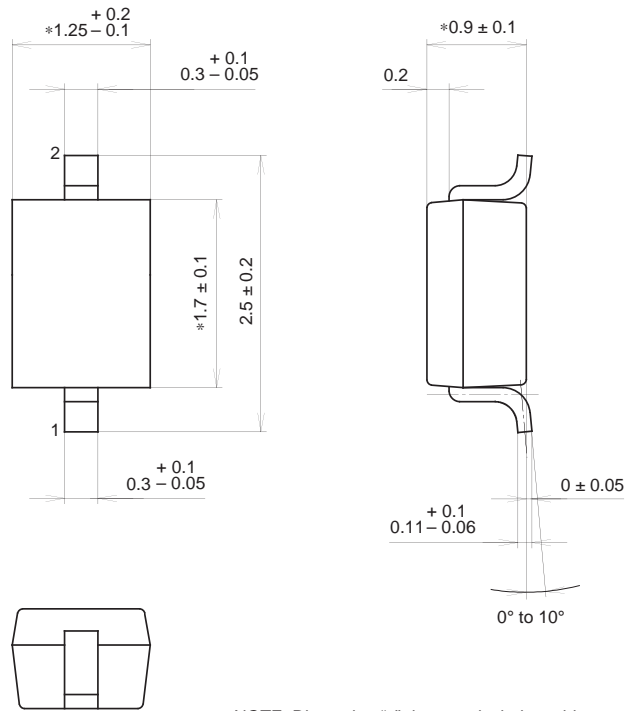


Thermal coefficient of diode capacitance vs. Reverse voltage



Package Outline Unit : mm

M-235

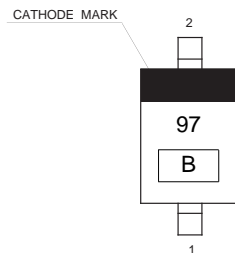


NOTE: Dimension "\*" does not include mold protrusion.

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.)