

Variable Capacitance Diode

Description

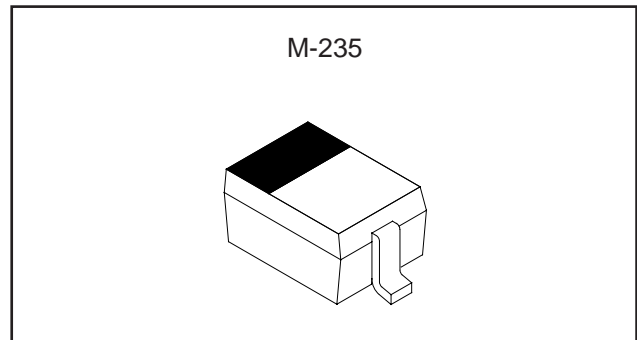
The 1T397 is a variable capacitance diode designed for the electronic tuning of wide band CATV tuners, and it has a super miniature package.

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

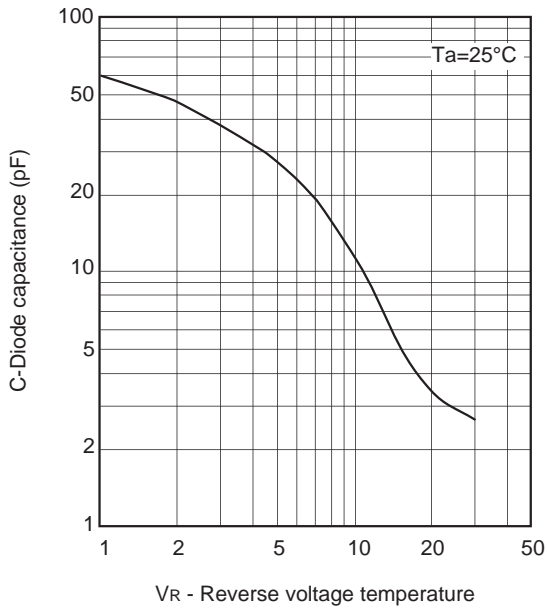
Electrical Characteristics

(Ta=25 °C)

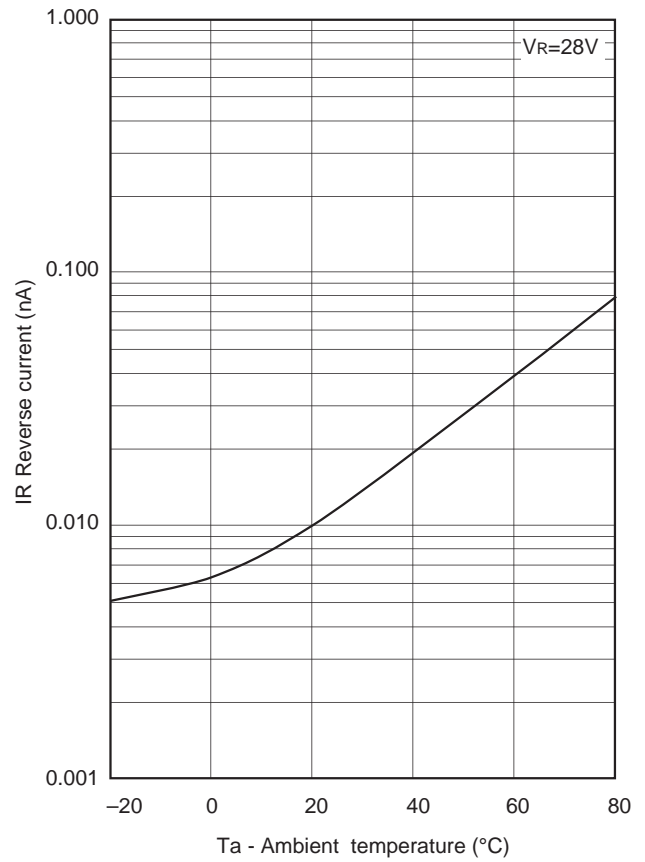
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	$I_R$	$V_R=28$ V			10	nA
Reverse voltage	$V_R$	$I_R=1 \mu A$	34			V
Diode capacitance	$C_2$	$V_R=2$ V, $f=1$ MHz	42.9		51.0	pF
	$C_{25}$	$V_R=25$ V, $f=1$ MHz	2.60		3.03	pF
Capacitance ratio	$C_2/C_{25}$		14.5	15.5		
	$C_1/C_{28}$		21.5			
	$C_{25}/C_{28}$		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	%

Sony reserves the right to change products and specifications without prior notice. This information does not convey any license by any implication or otherwise under any patents or other right. Application circuits shown, if any, are typical examples illustrating the operation of the devices. Sony cannot assume responsibility for any problems arising out of the use of these circuits.

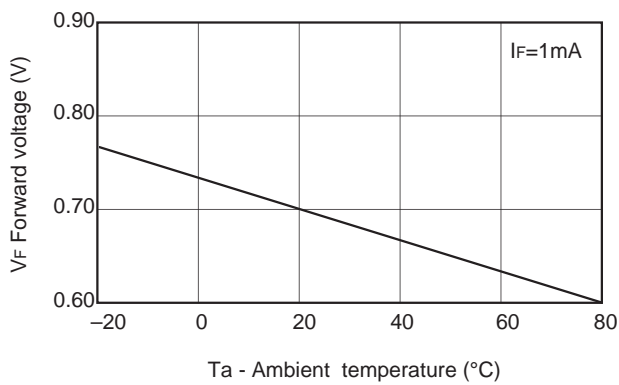
Diode capacitance vs. Reverse voltage temperature



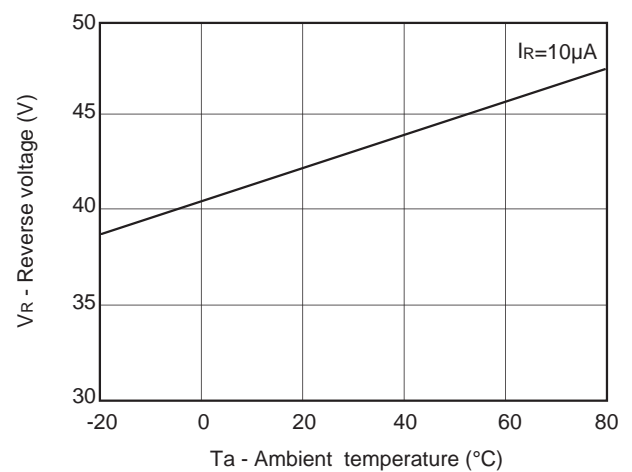
Reverse current vs. Ambient temperature



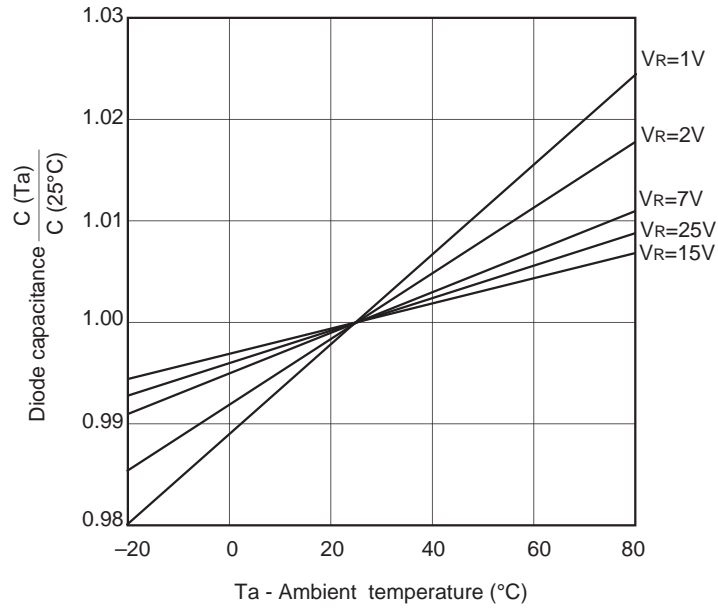
Forward voltage vs. Ambient temperature



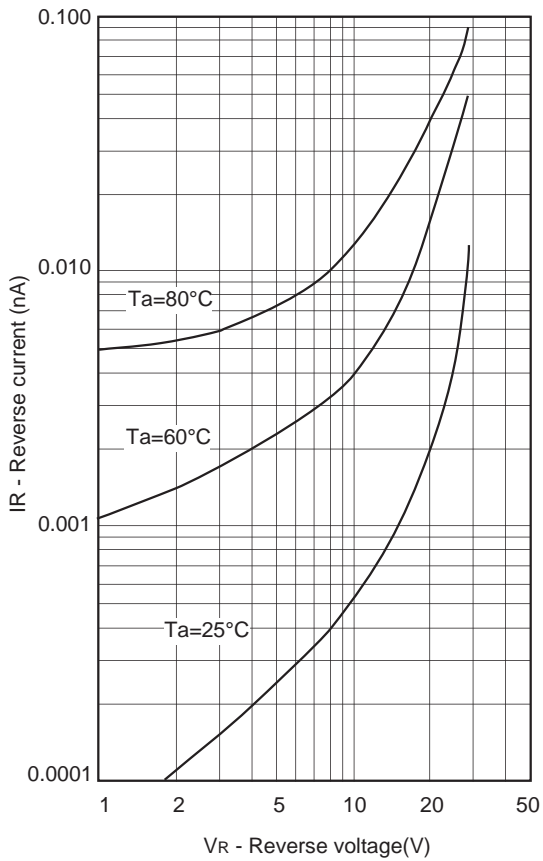
Reverse voltage vs. Ambient temperature



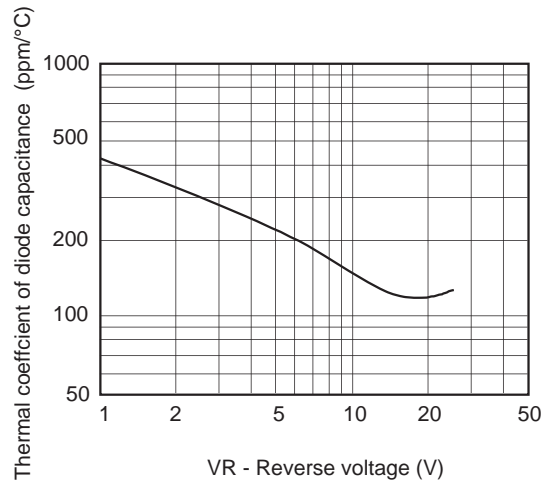
Diode capacitance vs. Ambient temperature



Reverse current vs. Reverse voltage

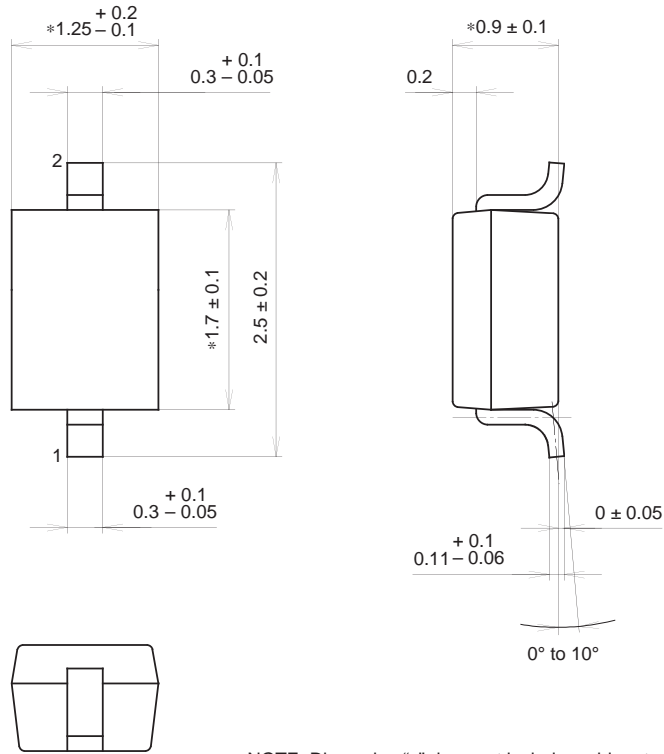


Thermal coefficient of diode capacitance vs. Reverse voltage



Package Outline Unit : mm

M-235

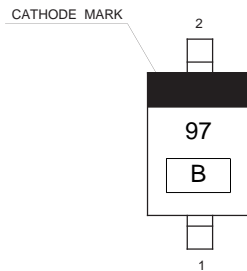


NOTE: Dimension "\*" does not include mold protrusion.

SONY CODE	M-235
EIAJ CODE	_____
JEDEC CODE	_____

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

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.)