

Silicon Variable Capacitance Diode

Description

The 1T364 is a variable capacitance diode designed for the tuning of wide band multichannel CATV tuners.

Features

- Super miniature package
- Low series resistance 0.85 Ω Typ. ($f=470$ MHz)
- Capacitance ratio 12.5 Typ. (C_2/C_{25})
- Small leakage current 10 nA Max. ($V_R=28$ V)
- Capacitance deviation within 3 %

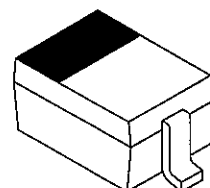
Applications

Electronic tuning of wide band CATV tuners

Structure

Silicon epitaxial planar type diode

M-235



Absolute Maximum Ratings ($T_a=25$ °C)

- Reverse voltage V_R 30 V
- Peak reverse voltage V_{RM} 35 V ($R_L \geq 10$ k Ω)
- Operating temperature T_{opr} 85 °C
- Storage temperature T_{stg} -55 to +150 °C

Recommended Operating Conditions

- Operating temperature T_{opr} -20 to +75 °C

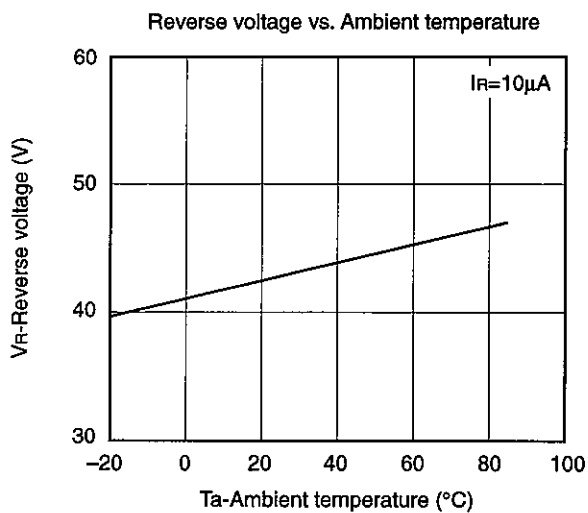
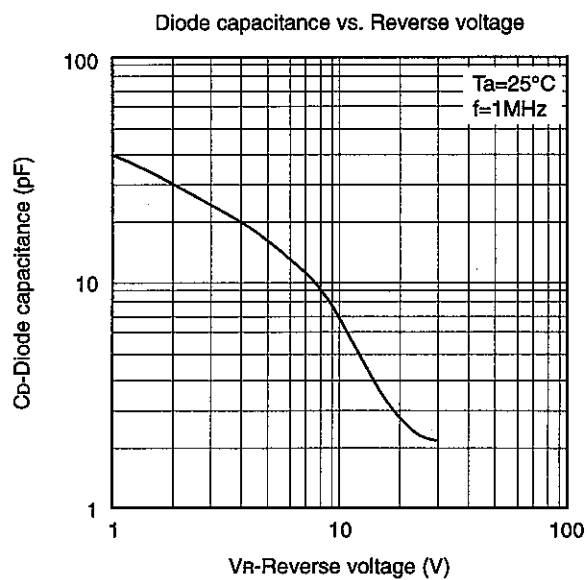
Electrical Characteristics

($T_a=25$ °C)

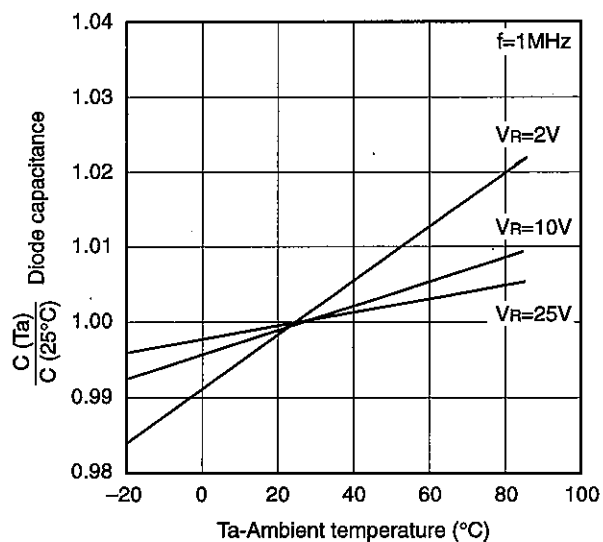
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I_R	$V_R=28$ V			10	nA
Diode capacitance	C_2	$V_R=2$ V, $f=1$ MHz	28.0	31.25	34.0	pF
	C_{25}	$V_R=25$ V, $f=1$ MHz	2.30	2.50	2.65	pF
Capacitance ratio	C_2/C_{25}	$f=1$ MHz	11.5	12.5		
Serial resistance	r_s	$C_D=14$ pF, $f=470$ MHz		0.85	1.00	Ω
Capacitance deviation in a matching group	ΔC	$V_R=2$ to 25 V, $f=1$ MHz			3	%

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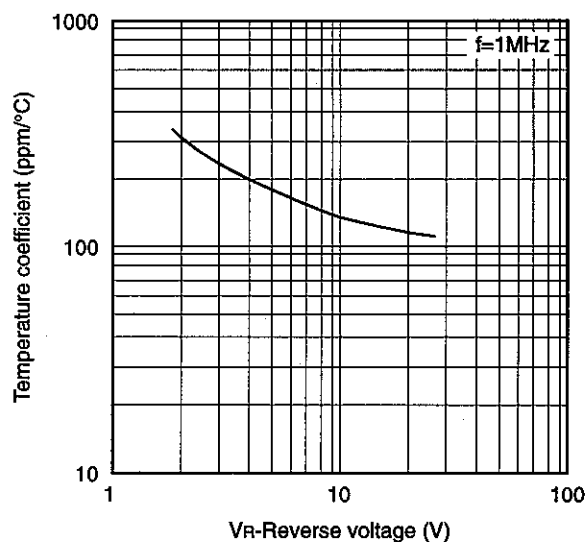
Example of Representative Characteristics



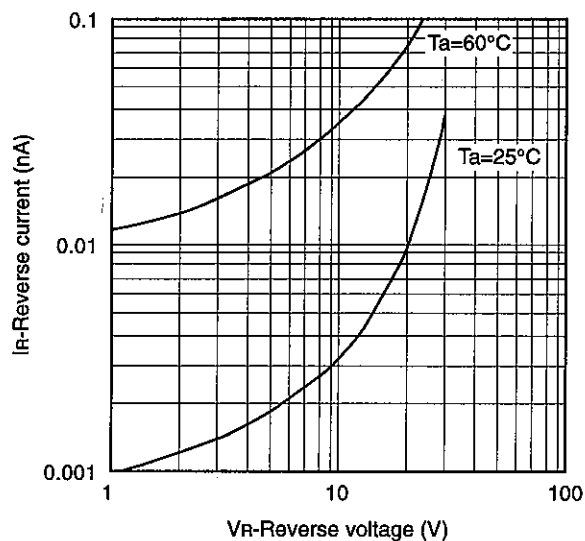
Diode capacitance vs. Ambient temperature



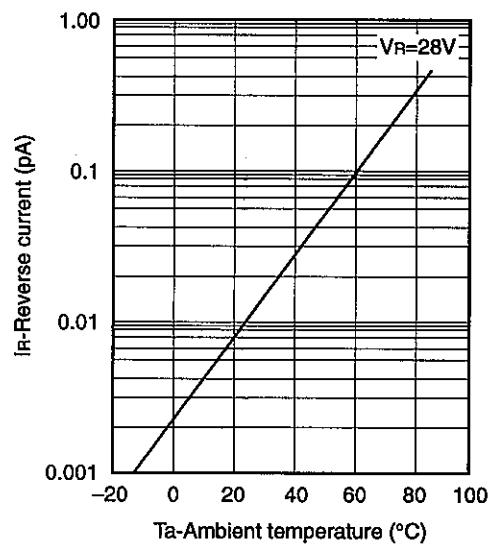
Temperature coefficient of the diode capacitance



Reverse current vs. Reverse voltage

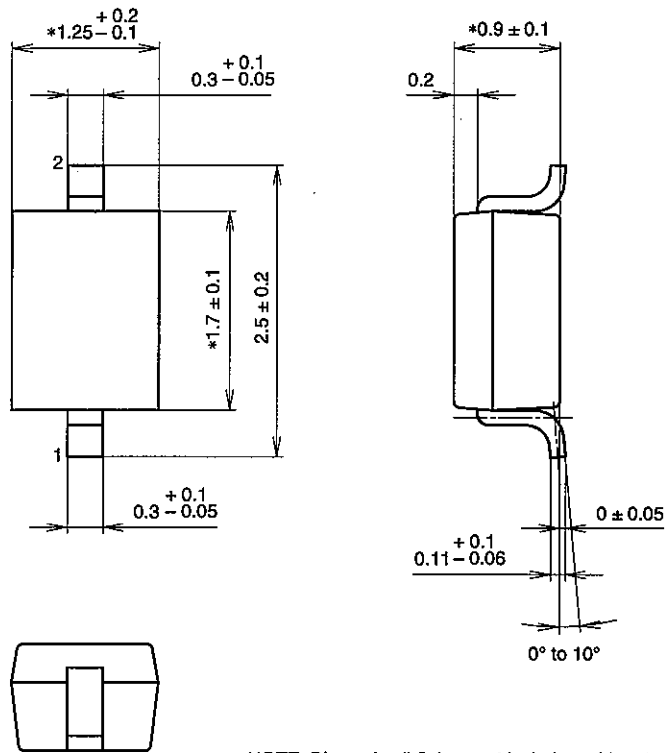


Reverse current vs. Ambient temperature



Package Outline Unit : mm

M-235

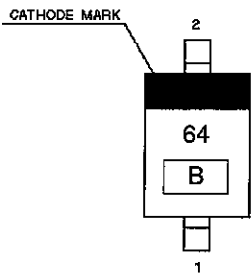


NOTE: Dimension "*" does not include mold protrusion.

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.)

1T364 容量細分表 ($\Delta C 3\%$ 保証)

(単位: pF)

ランク	C 2		C13		C15		C25	
	Min	Max	Min	Max	Min	Max	Min	Max
1	33.01	34.00	5.838	6.013	4.868	5.011	2.570	2.647
2	32.17	33.13	5.695	5.866	4.747	4.889	2.507	2.581
3	31.40	32.33	5.556	5.722	4.630	4.768	2.445	2.518
4	30.64	31.55	5.420	5.582	4.516	4.651	2.385	2.456
5	29.86	30.75	5.286	5.445	4.405	4.537	2.327	2.396
6	29.14	30.01	5.157	5.311	4.298	4.426	2.300	2.359
7	28.43	29.28	5.031	5.181	4.193	4.318		
8	28.00	28.70	4.907	5.054	4.090	4.211		
9			4.787	4.930	3.990	4.109		
10			4.670	4.809	3.892	4.008		
11			4.555	4.690	3.795	3.908		
12								
13								
14								
15								