SONY

1T378A

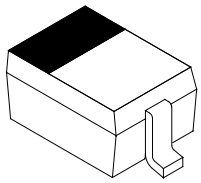
Variable Capacitance Diode

Description

The 1T378A is a variable capacitance diode designed for electronic tuning of wide-band CATV tuners, and the super miniature package allows the tuner miniaturization.

High capacitance ratio (C_{25}/C_{28}) is improved to support guard band.

M-235



Features

- Super miniature package
- Low series resistance 0.85 Ω Max. (f=470 MHz)
- Large capacitance ratio 12.5 Typ. (C_2/C_{25})
  1.03 Min. (C_{25}/C_{28})
- Small leakage current 10 nA Max. (V_R=28 V)
- Capacitance deviation within 2 %

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

Applications

Electronic tuning of VHF band and wide-band CATV tuners

Structure

Silicon epitaxial planar type diode

Electrical Characteristics

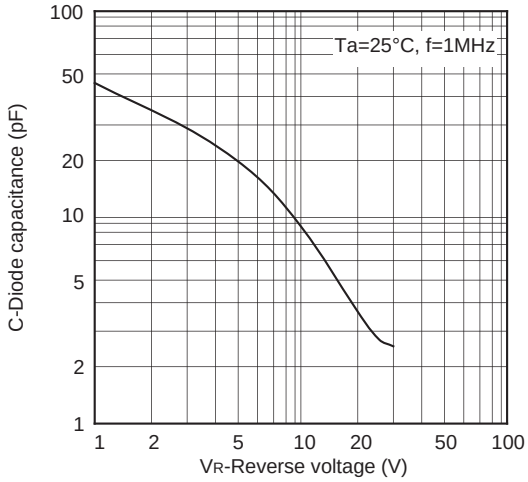
(Ta=25 °C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I_R	V_R=28 V			10	nA
Reverse voltage	V_R	I_R=1 µA	34			V
Diode capacitance	C_2	V_R=2 V, f=1 MHz	33.0		39.0	pF
	C_{25}	V_R=25 V, f=1 MHz	2.57		3.00	pF
Capacitance ratio	C_2/C_{25}		12.0	12.5		
	C_{25}/C_{28}		1.03			
Series resistance	rs	C_D=14 pF, f=470 MHz			0.85	Ω
Capacitance deviation in a matching group	ΔC	V_R=2 to 25 V, f=1 MHz			2	%

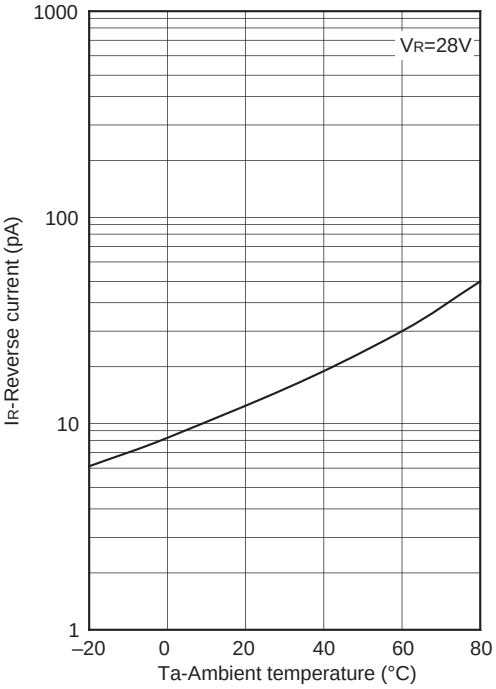
The continuous 20 pieces of ΔC are guaranteed.

E97108A82-TE

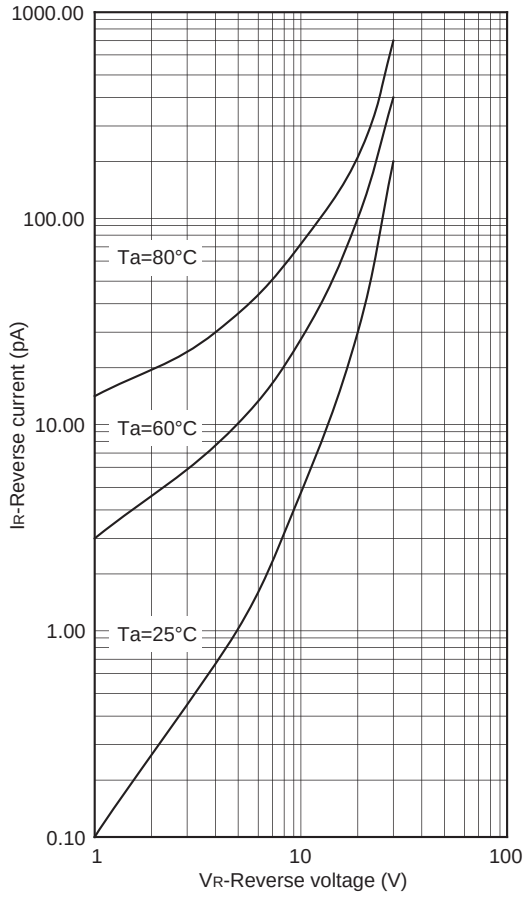
Diode capacitance vs. Reverse voltage



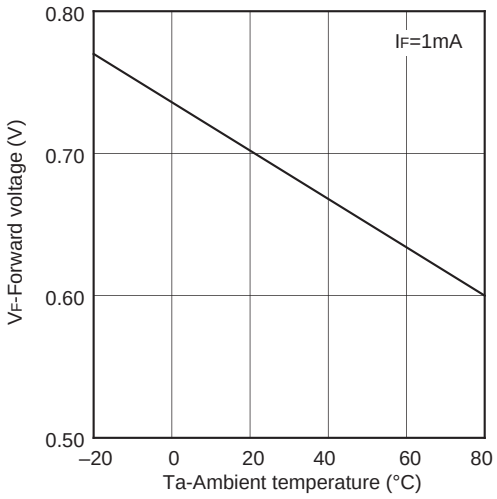
Reverse current vs. Ambient temperature



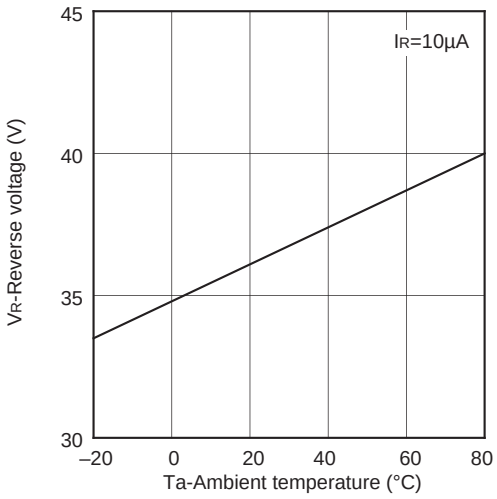
Reverse current vs. Reverse voltage



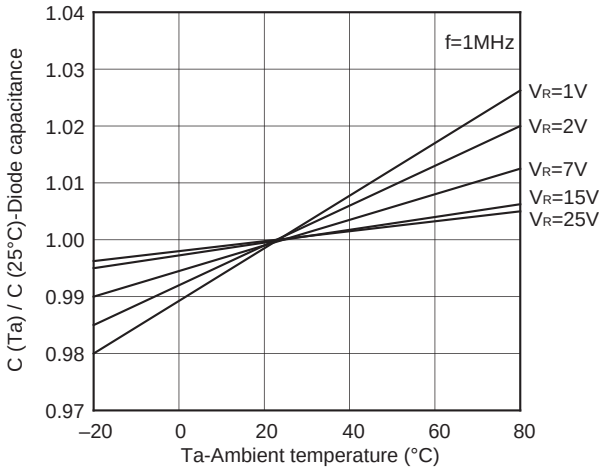
Forward voltage vs. Ambient temperature



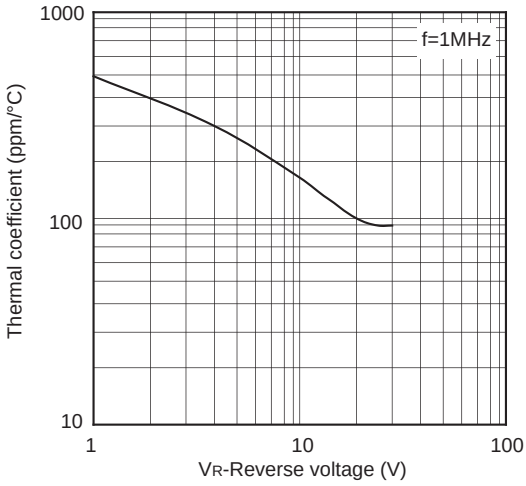
Reverse voltage vs. Ambient temperature



Diode capacitance vs. Ambient temperature



Thermal coefficient of diode capacitance



Package Outline Unit : mm

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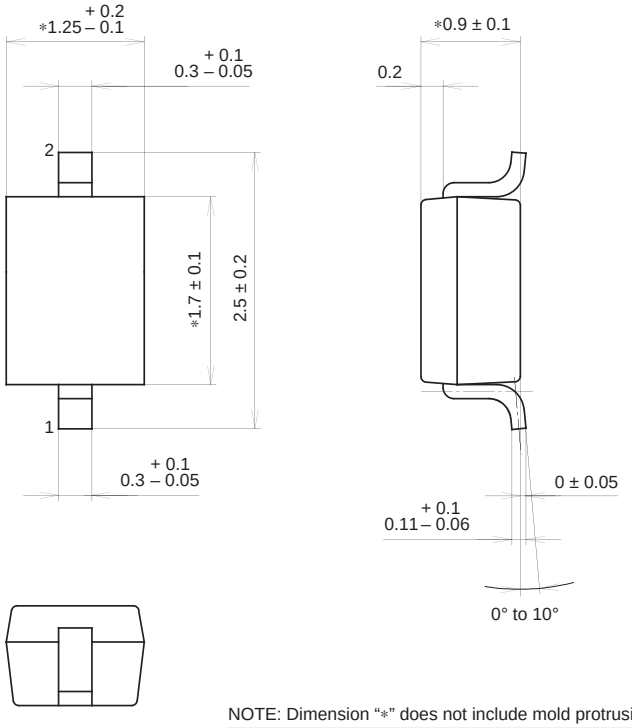
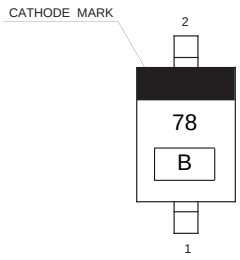


NOTE: Dimension "∗" does not include mold protrusion.

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.)