

Variable Capacitance Diode

Description

The 1T405A is a variable capacitance diode designed for electronic tuning of wide-band CATV tuners using a super-small-miniature flat package (SSVC).

High capacitance ratio (C25/C28) is improved to support guard band.

Features

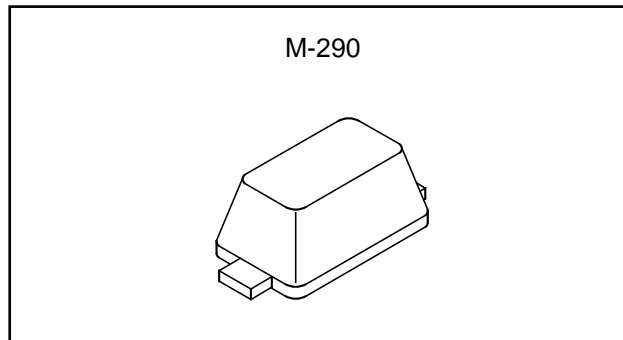
- Super-small-miniature flat package
- Low series resistance 0.85 Ω Max. (f=470 MHz)
- Large capacitance ratio 12.5 Typ. (C<sub>2</sub>/C<sub>25</sub>)  
1.03 Min. (C<sub>25</sub>/C<sub>28</sub>)
- Small leakage current 10 nA Max. (V<sub>R</sub>=28 V)
- Capacitance deviation within 2 %

Applications

Electronic tuning of VHF band and wide-band CATV tuners

Structure

Silicon epitaxial planar type diode



Absolute Maximum Ratings (Ta=25 °C)

- Reverse voltage V<sub>R</sub> 34 V
- Operating temperature Topr -20 to +75 °C
- Storage temperature Tstg -65 to +150 °C

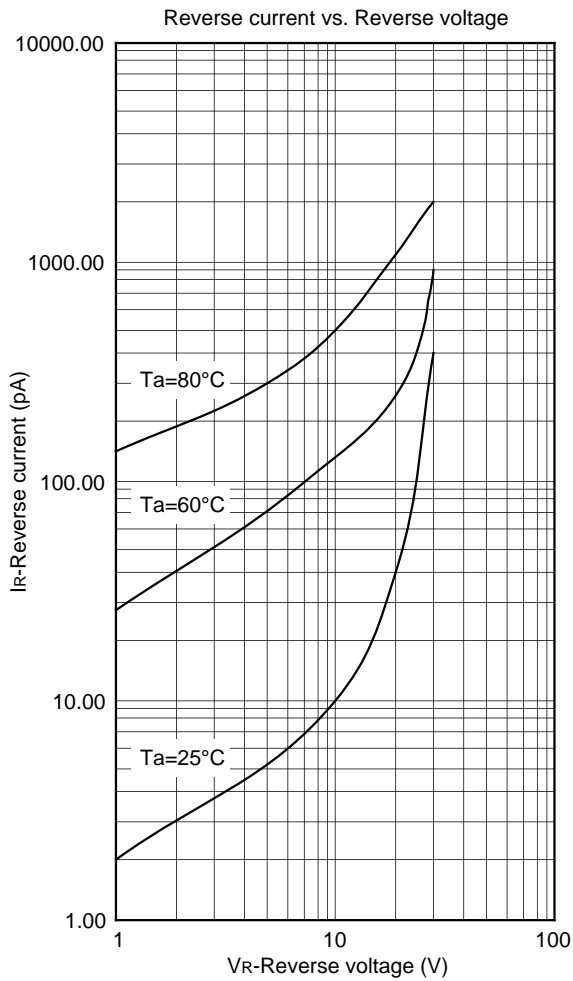
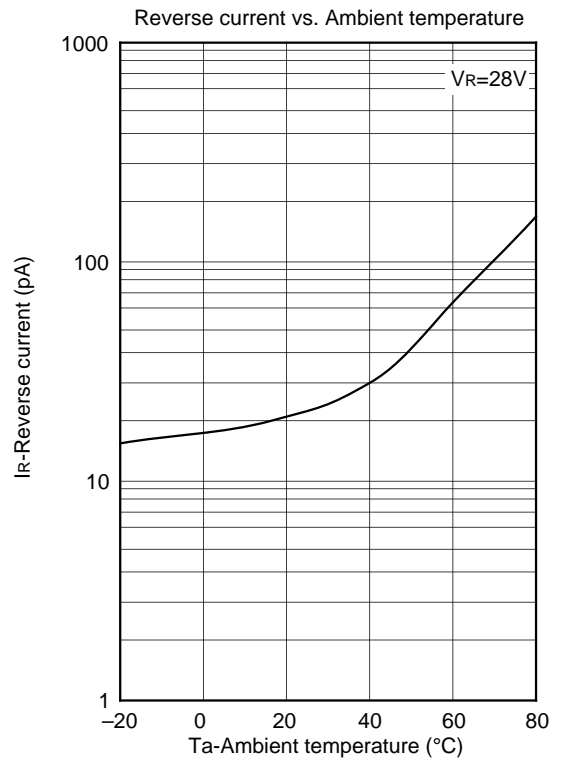
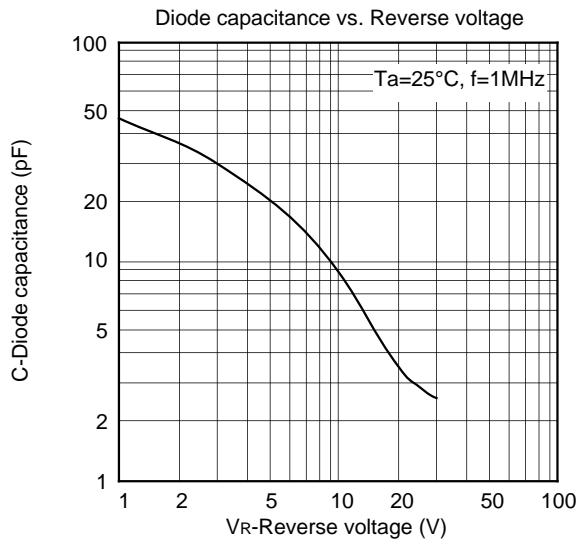
Electrical Characteristics

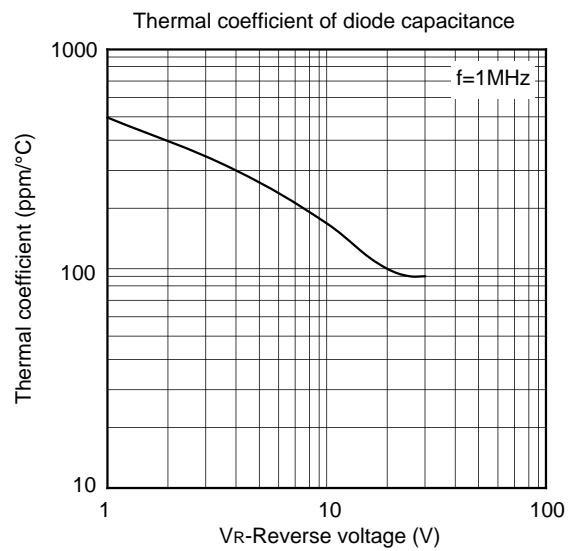
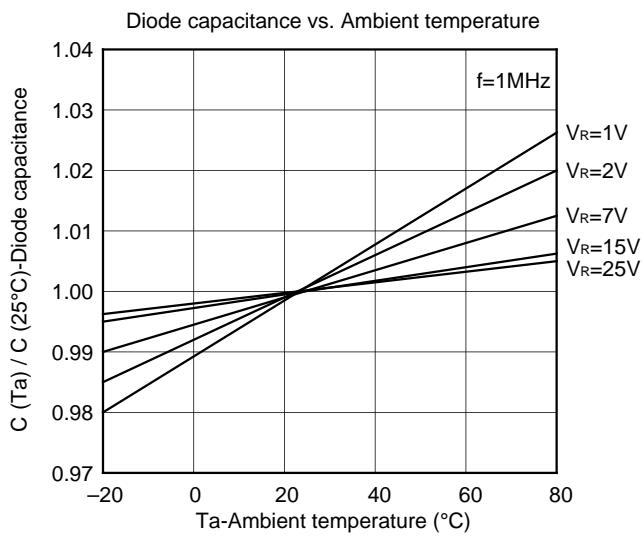
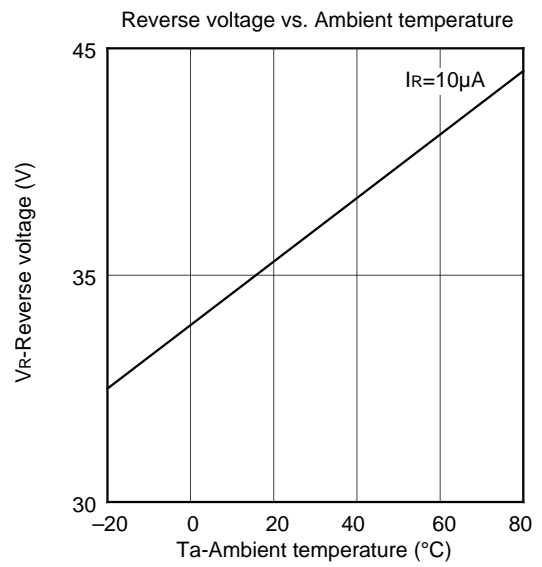
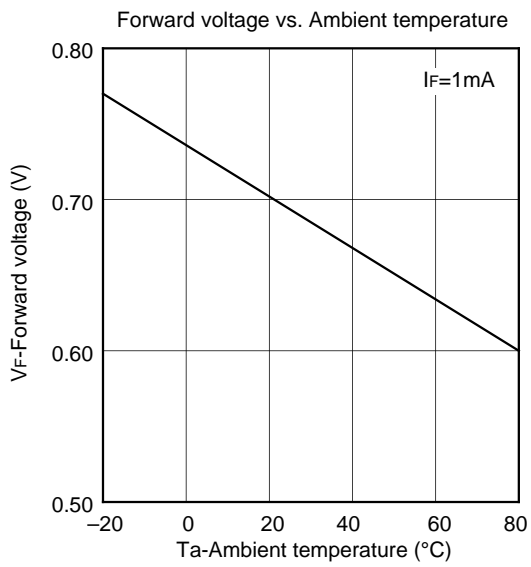
(Ta=25 °C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I <sub>R</sub>	V <sub>R</sub> =28 V			10	nA
Reverse voltage	V <sub>R</sub>	I <sub>R</sub> =1 μA	34			V
Diode capacitance	C <sub>2</sub>	V <sub>R</sub> =2 V, f=1 MHz	32.96		38.96	pF
	C <sub>25</sub>	V <sub>R</sub> =25 V, f=1 MHz	2.53		2.96	pF
Capacitance ratio	C <sub>2</sub> /C <sub>25</sub>		12.0	12.5		
	C <sub>25</sub> /C <sub>28</sub>		1.03			
Series resistance	r <sub>s</sub>	C <sub>D</sub> =14 pF, f=470 MHz			0.85	Ω
Capacitance deviation in a matching group	ΔC	V <sub>R</sub> =2 to 25 V, f=1 MHz			2	%

The continuous 20 pieces of ΔC are guaranteed.

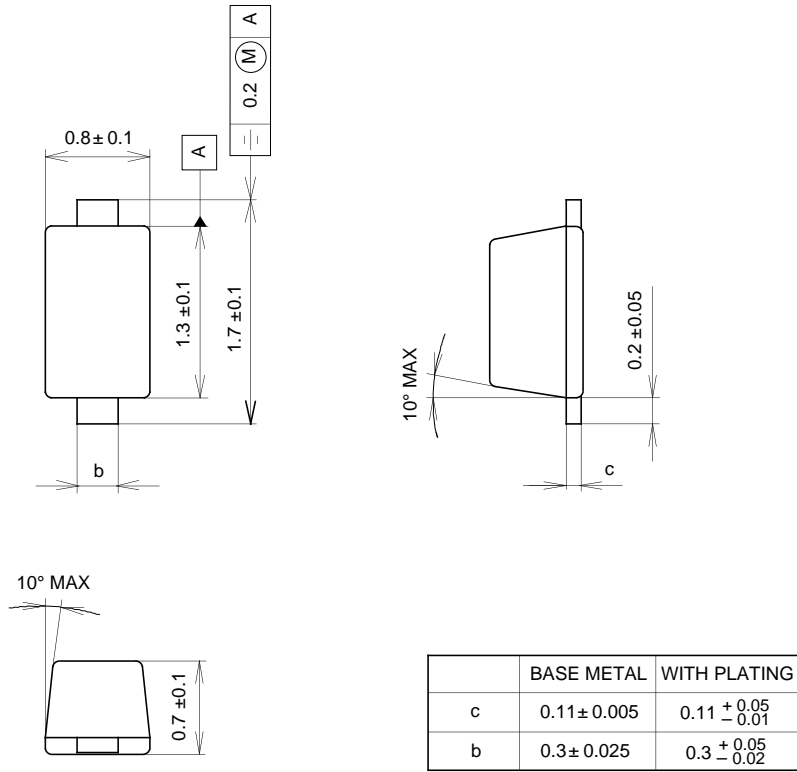
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Package Outline Unit : mm

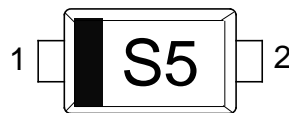
M-290



SONY CODE	M-290
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE MATERIAL	EPOXY RESIN
LEAD TREATMENT	SOLDER PLATING
LEAD MATERIAL	COPPER
PACKAGE WEIGHT	0.002g

MARK



1 : Cathode  
2 : Anode

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Datasheets for electronics components.