

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

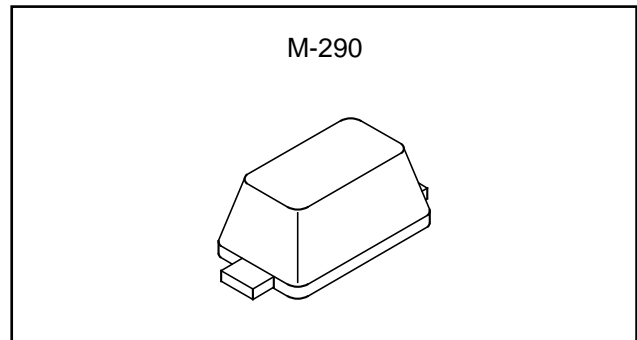
- Super-small-miniature flat package
- Low series resistance 0.85 Ω Max. (f=470 MHz)
- Large capacitance ratio 12.5 Typ. (C₂/C₂₅)
1.03 Min. (C₂₅/C₂₈)
- Small leakage current 10 nA Max. (V_R=28 V)
- Capacitance deviation within 2 %

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 _R | 34 | V |
| • Operating temperature | T _{opr} | -20 to +75 | °C |
| • Storage temperature | T _{stg} | -65 to +150 | °C |

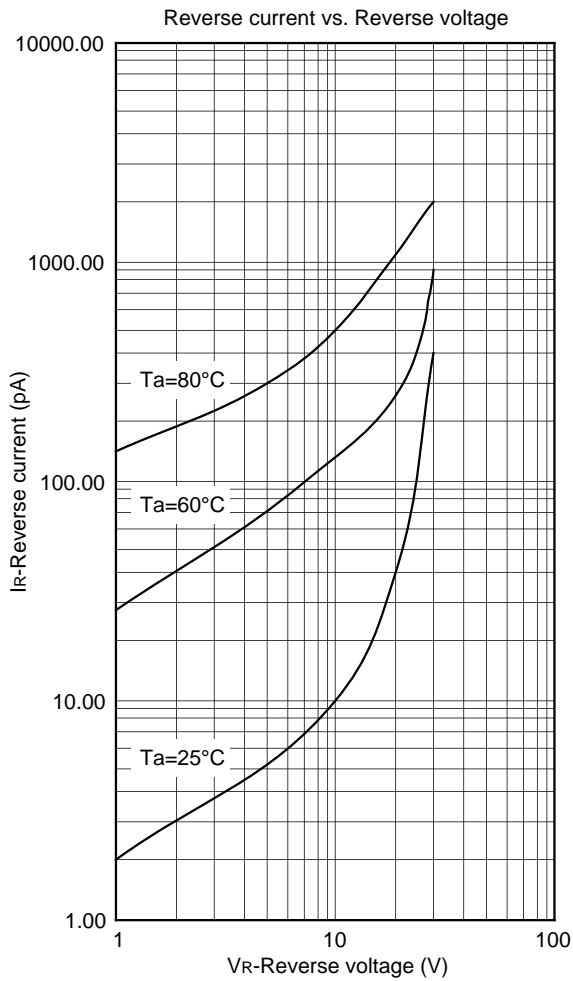
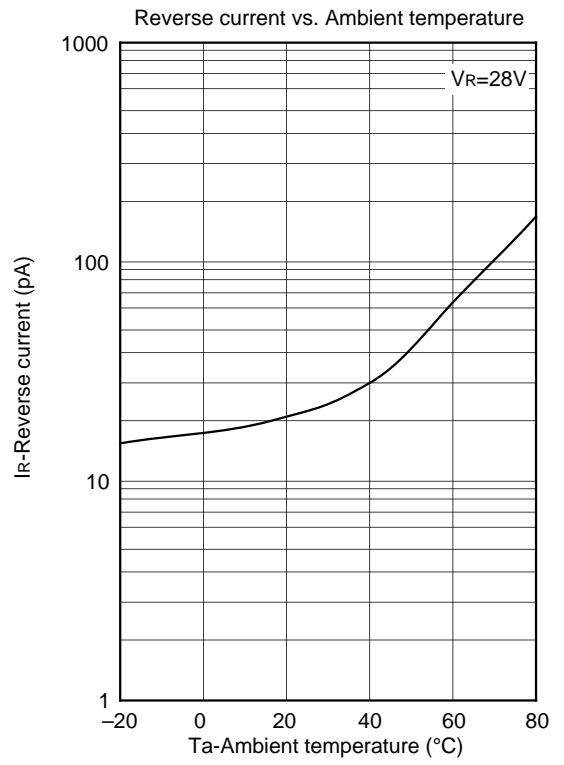
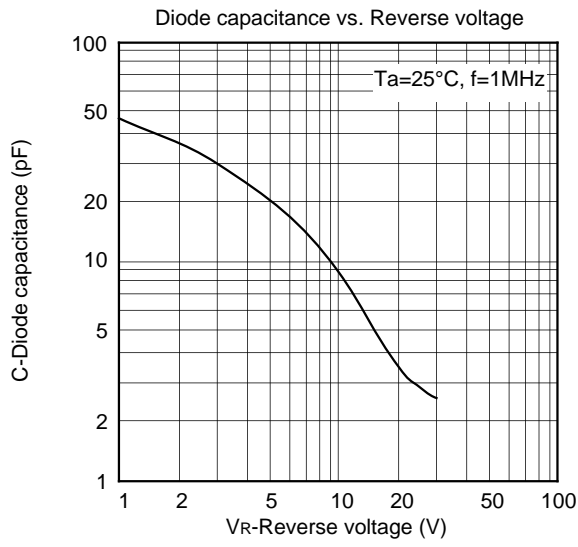
Electrical Characteristics

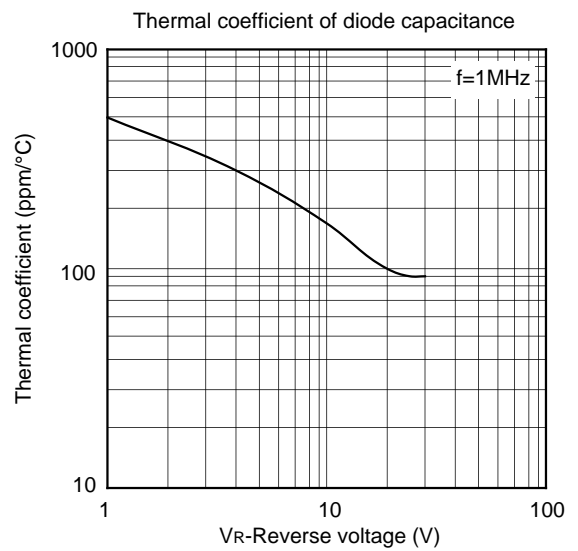
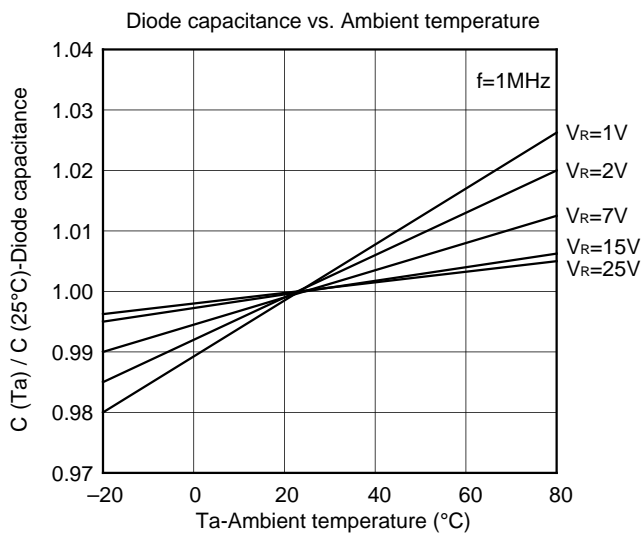
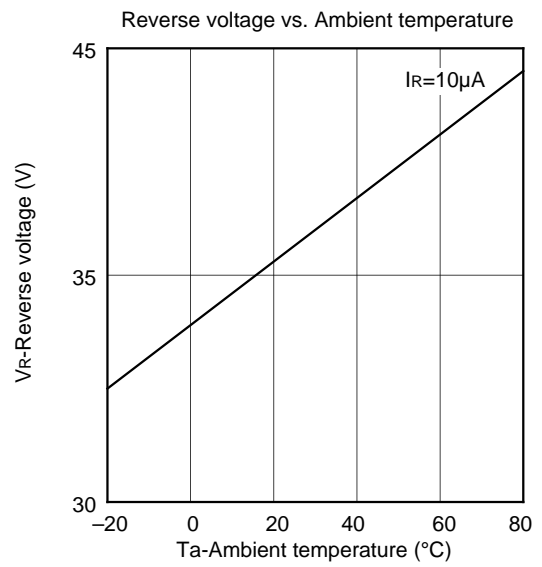
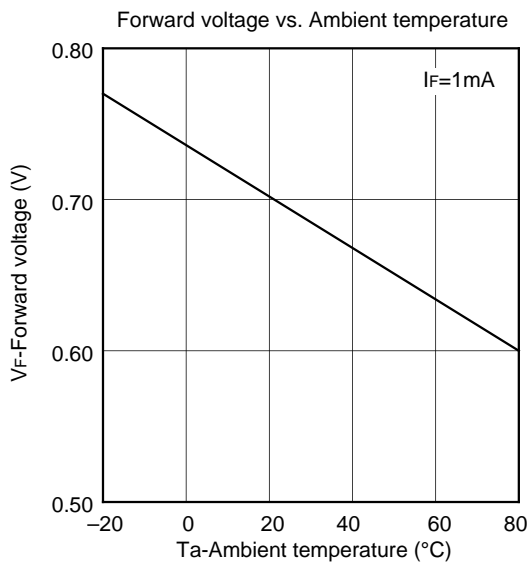
(Ta=25 °C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I _R	V _R =28 V			10	nA
Reverse voltage	V _R	I _R =1 μ A	34			V
Diode capacitance	C ₂	V _R =2 V, f=1 MHz	32.96		38.96	pF
	C ₂₅	V _R =25 V, f=1 MHz	2.53		2.96	pF
Capacitance ratio	C ₂ /C ₂₅		12.0	12.5		
	C ₂₅ /C ₂₈		1.03			
Series resistance	r _s	C _D =14 pF, f=470 MHz			0.85	Ω
Capacitance deviation in a matching group	Δ C	V _R =2 to 25 V, f=1 MHz			2	%

The continuous 20 pieces of Δ C are guaranteed.

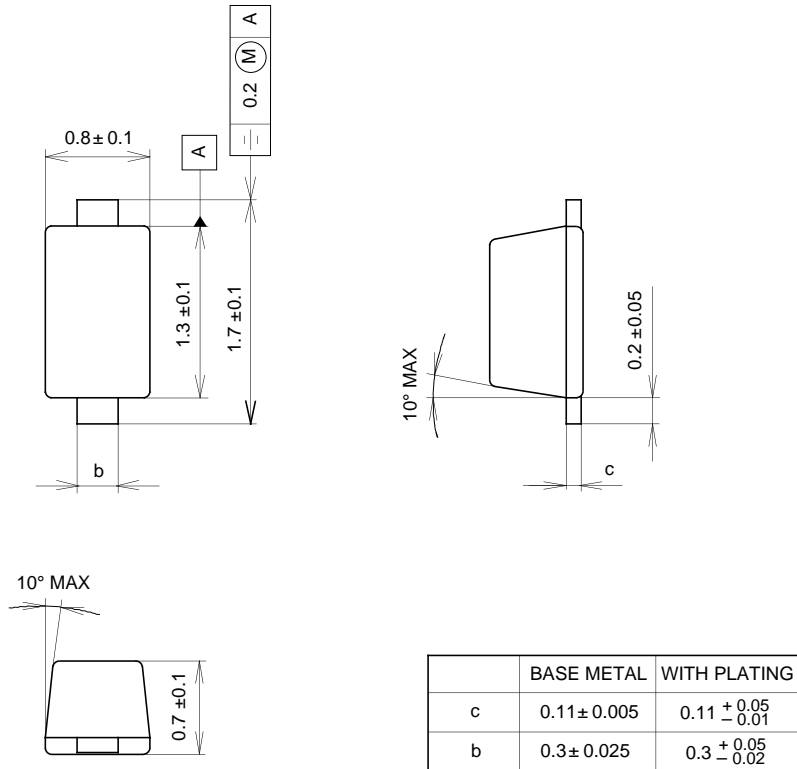
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Package Outline Unit : mm

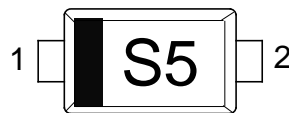
M-290



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