

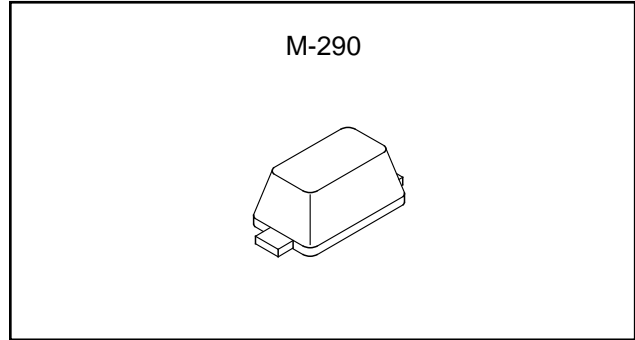
Variable Capacitance Diode

Description

The 1T405 is a variable capacitance diode designed for electronic tuning of wide-band CATV tuners using a super-small-miniature flat package (SSVC).

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>)
- Small leakage current: 10 nA Max. (V<sub>R</sub>=28 V)
- Capacitance deviation in a matching group: within 2%



Absolute Maximum Ratings (Ta=25 °C)

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

Applications

Electronic tuning of UHF and wide-band CATV tuners

Structure

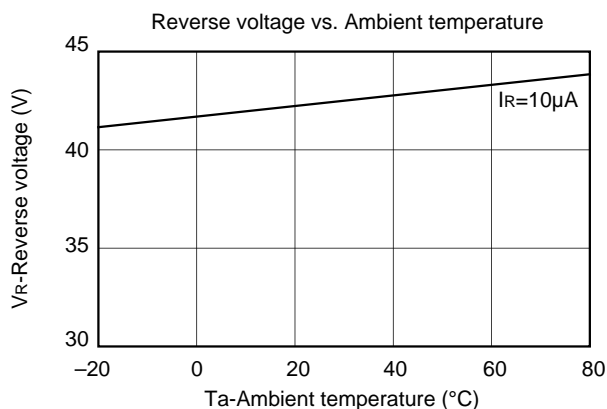
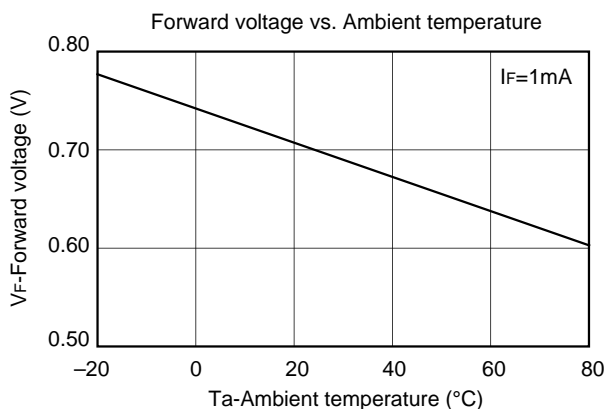
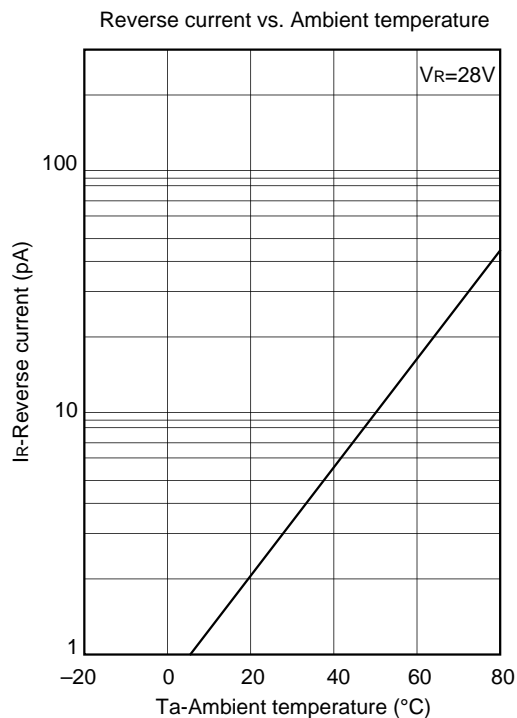
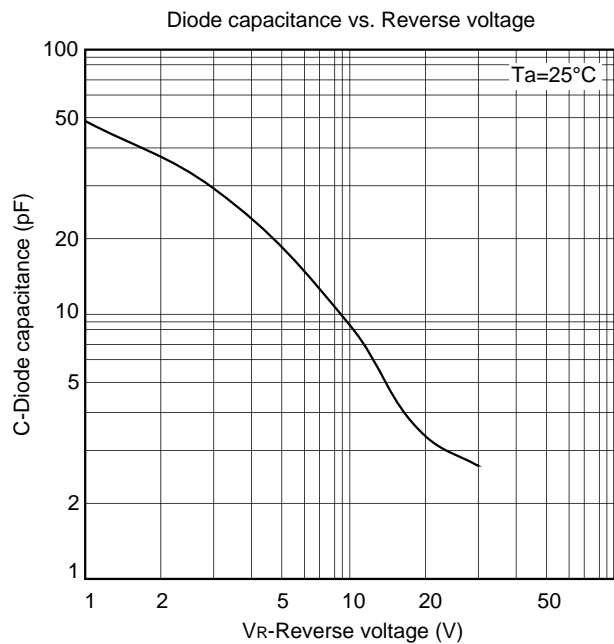
Silicon epitaxial planar type diode

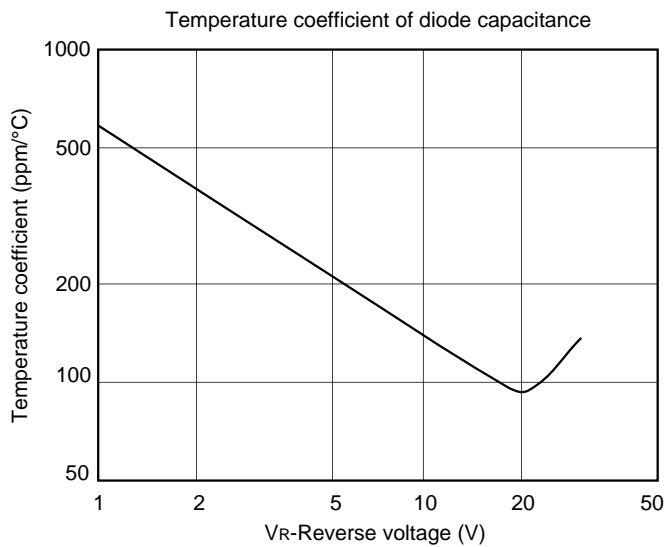
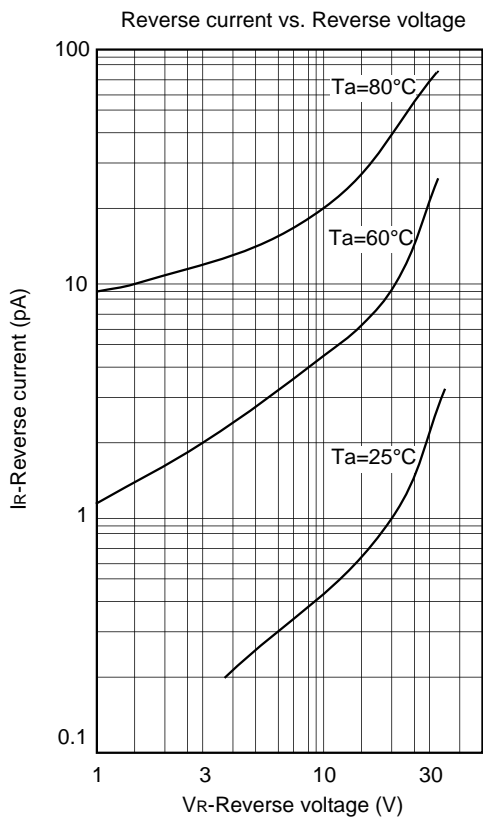
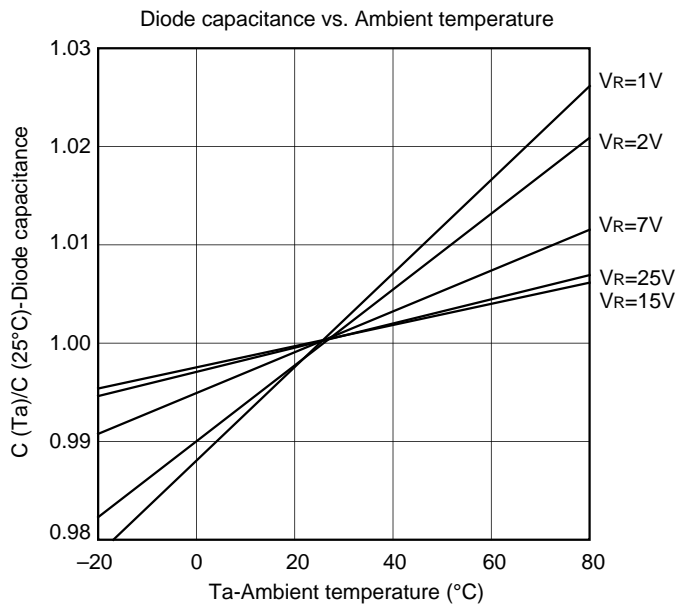
Electrical Characteristics

(Ta=25 °C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I <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		
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	%

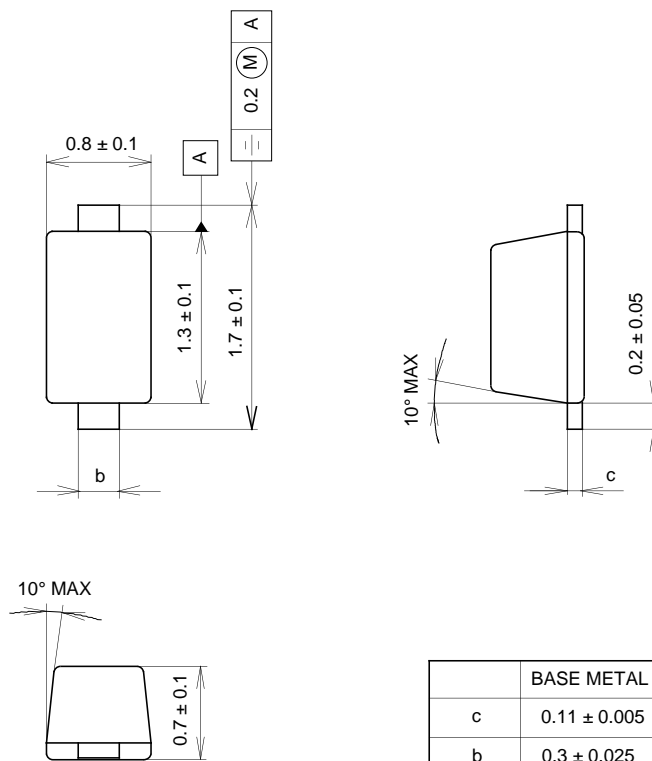
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Package Outline Unit : mm

M-290

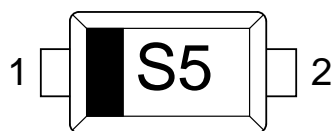


	BASE METAL	WITH PLATING
c	0.11 ± 0.005	0.11 $\begin{smallmatrix} +0.05 \\ -0.01 \end{smallmatrix}$
b	0.3 ± 0.025	0.3 $\begin{smallmatrix} +0.05 \\ -0.02 \end{smallmatrix}$

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