

Variable Capacitance Diode

Description

The 1T412 is a variable capacitance diode designed for electronic tuning of BS tuners using a super-small-miniature flat package (SSVC).

Features

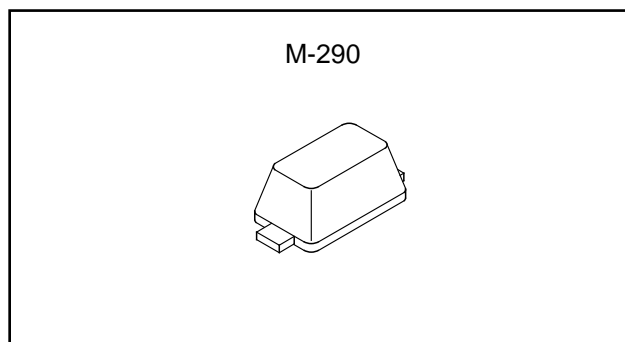
- Super-small-miniature flat package
- Low series resistance: 1.8 Ω Max. (f=470 MHz)
- Large capacitance ratio: 5.7 Typ. (C₂/C₂₅)
- Small leakage current: 10 nA Max. (V_R=28 V)
- Capacitance deviation in a matching group:
within 5 %

Applications

Electronic tuning of BS tuners

Structure

Silicon epitaxial planar type diode



Absolute Maximum Ratings (Ta=25 °C)

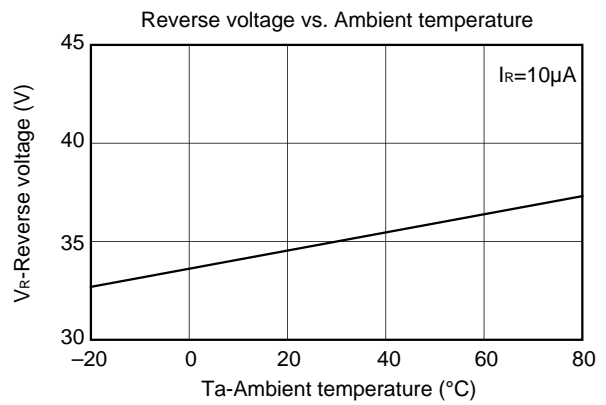
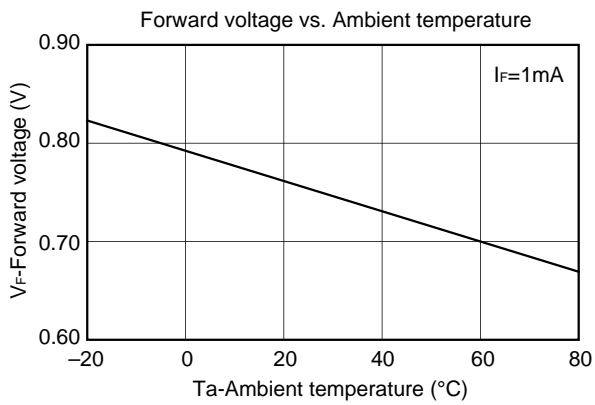
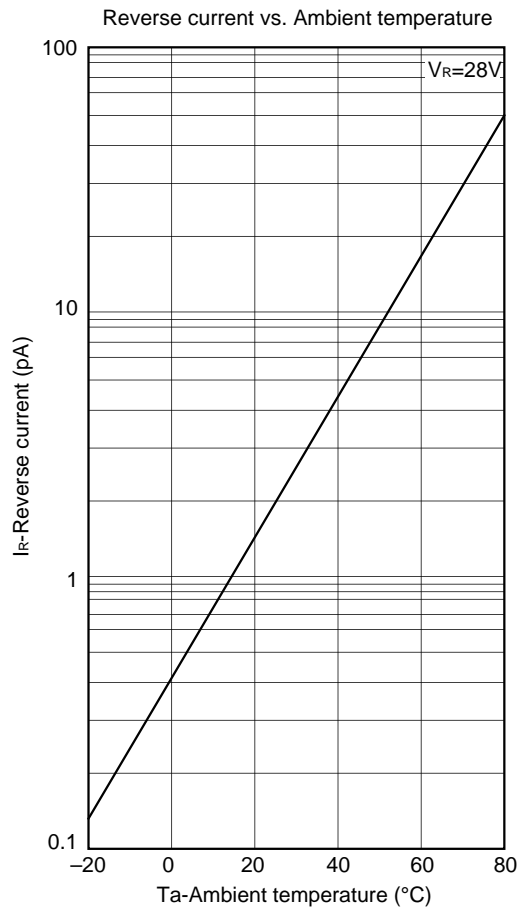
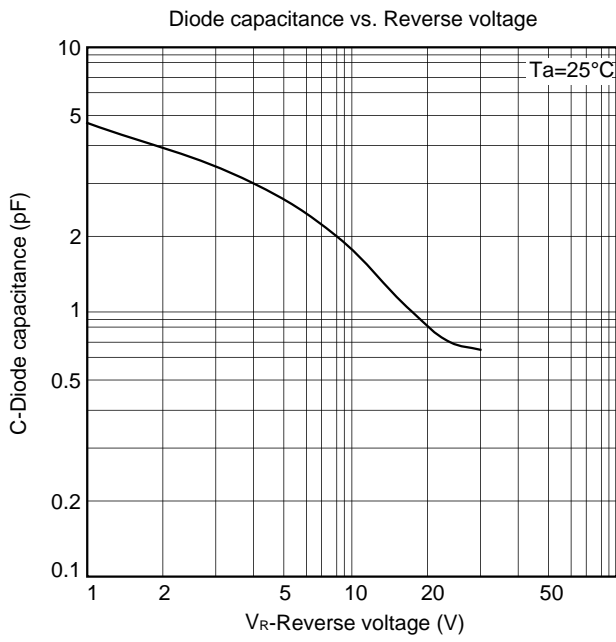
- Reverse voltage V_R 30 V
- Peak reverse voltage V_{RM} 35 V
(R_L ≥ 10 k Ω)
- Operating temperature T_{opr} -20 to +75 °C
- Storage temperature T_{stg} -65 to +150 °C

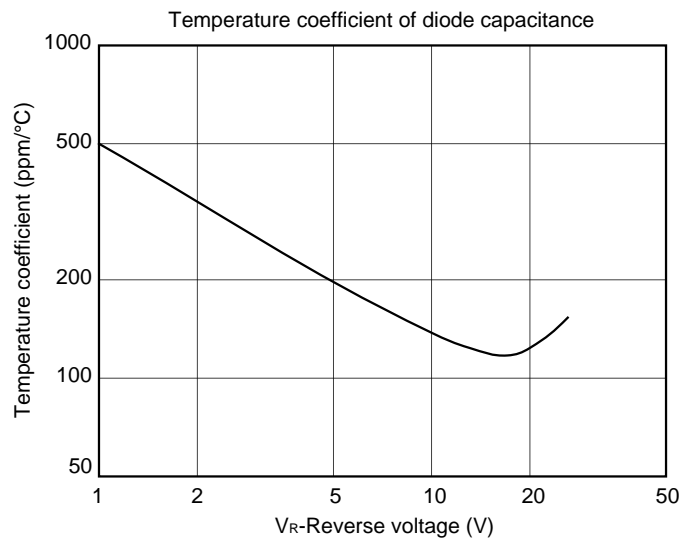
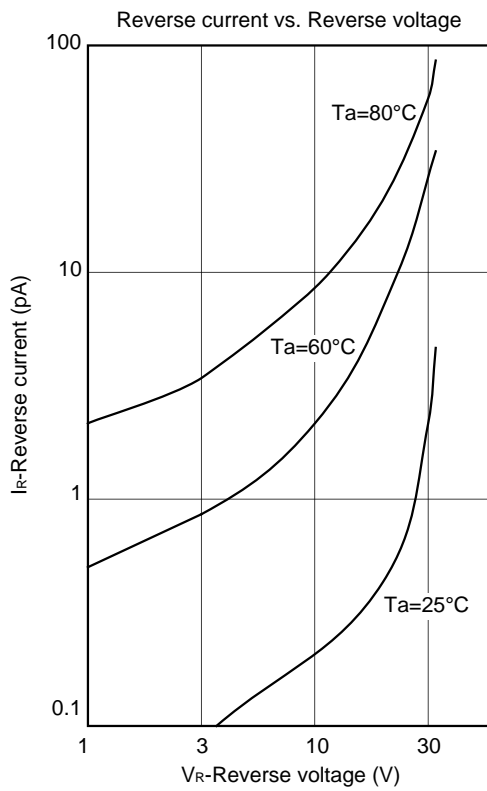
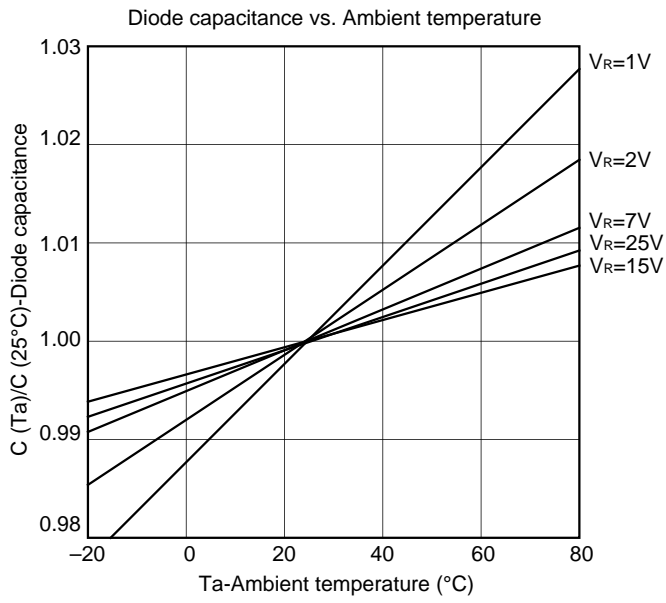
Electrical Characteristics

(Ta=25 °C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I _R	V _R =28 V			10	nA
Diode capacitance	C ₂	V _R =2 V, f=1 MHz	3.27		4.51	pF
	C ₂₅	V _R =25 V, f=1 MHz	0.57		0.77	pF
Capacitance ratio	C ₂ /C ₂₅		5.0	5.7		
Series resistance	r _s	V _R =1V, f=470 MHz		1.1	1.8	Ω
Capacitance deviation in a matching group	Δ C	V _R =2 to 25 V, f=1 MHz			5	%

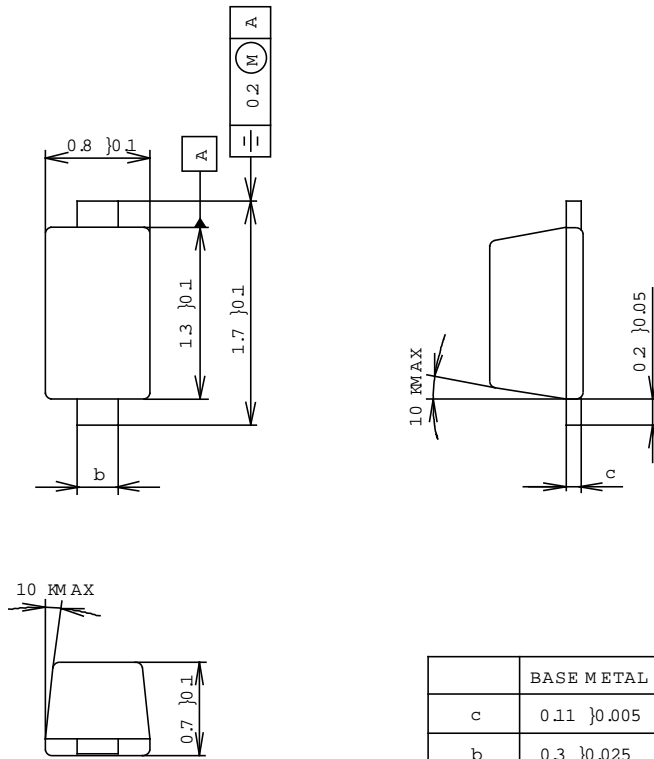
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Package Outline Unit : mm

M-290

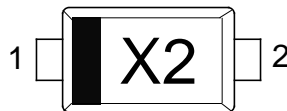


	BASE METAL	WITH PLATING
c	0.11 ± 0.005	0.11 $\begin{matrix} 0.05 \\ 0.01 \end{matrix}$
b	0.3 ± 0.025	0.3 $\begin{matrix} 0.05 \\ 0.02 \end{matrix}$

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