

Variable Capacitance Diode

Description

The 1T410 is a variable capacitance diode designed for electronic tuning of BS/CS tuners using a super-small-miniature flat package (SSVC).

Features

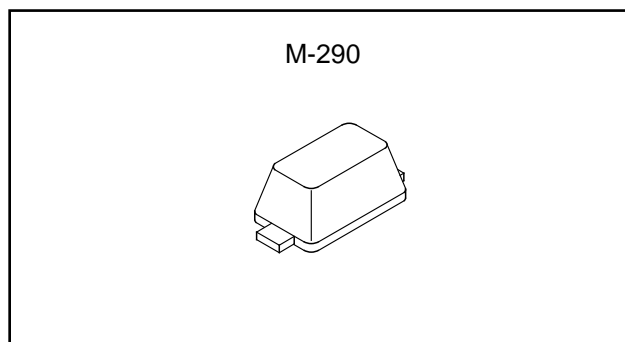
- Super-small-miniature flat package
- Low series resistance: 1.5 Ω Max. (f=470 MHz)
- Large capacitance ratio: 12.0 Typ. (C₁/C₂₅)
- Small leakage current: 10 nA Max. (V_R=25 V)
- Capacitance deviation in a matching group:
within 6 %

Applications

Electronic tuning of BS/CS tuners

Structure

Silicon epitaxial planar type diode



Absolute Maximum Ratings (Ta=25 °C)

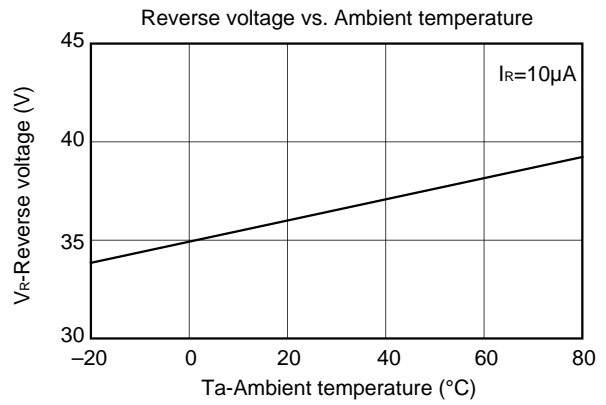
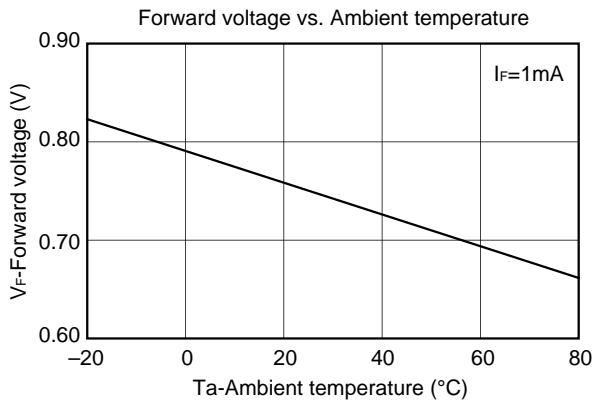
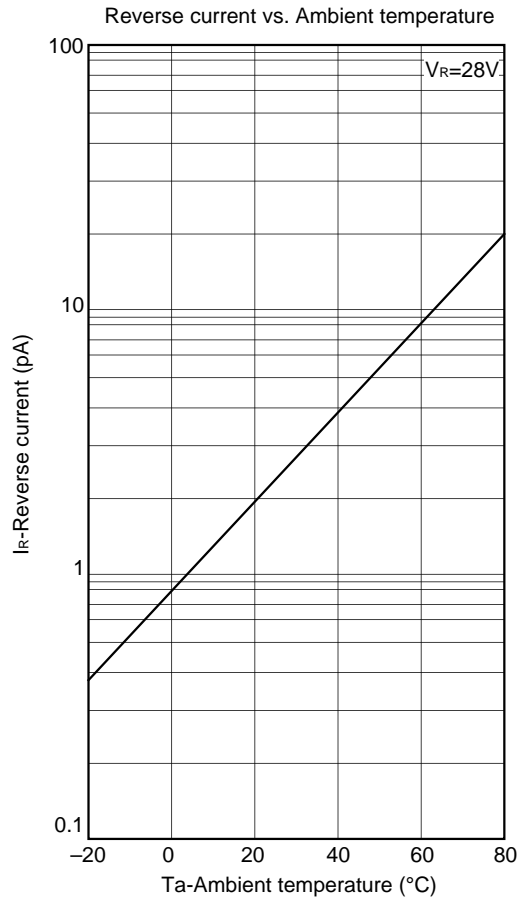
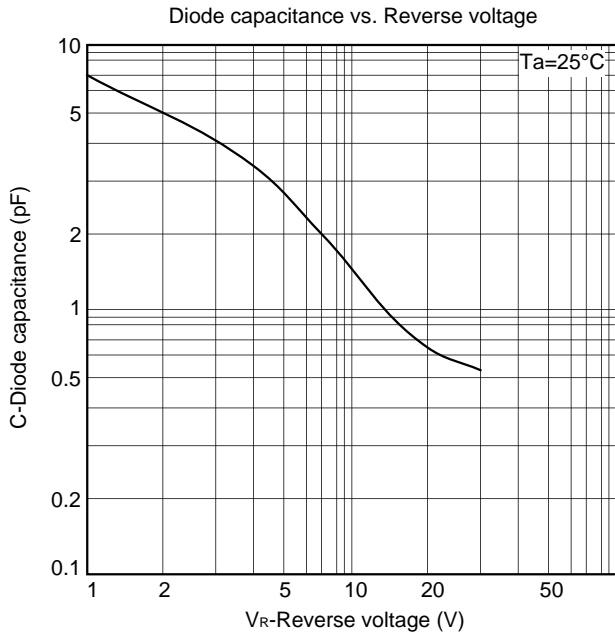
- | | | | |
|-------------------------|------------------|-------------|-----------------------------------|
| • Reverse voltage | V _R | 30 | V |
| • Peak reverse voltage | V _{RM} | 35 | V |
| | | | (R _L ≥ 10 k Ω) |
| • Operating temperature | T _{opr} | -20 to +75 | °C |
| • Storage temperature | T _{stg} | -65 to +150 | °C |

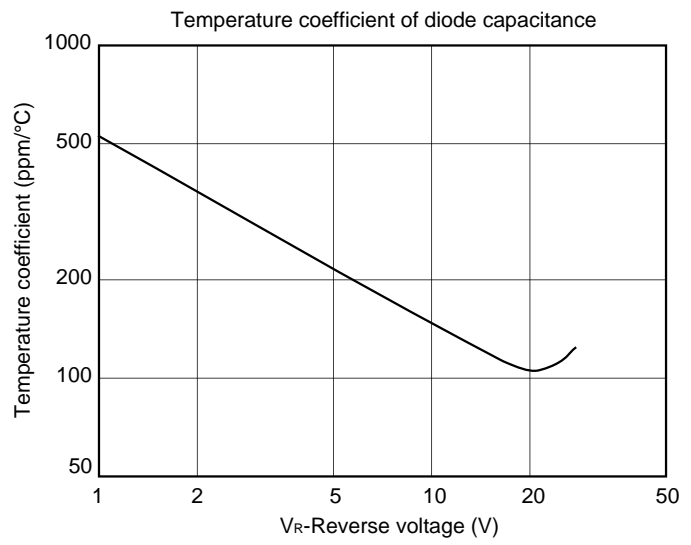
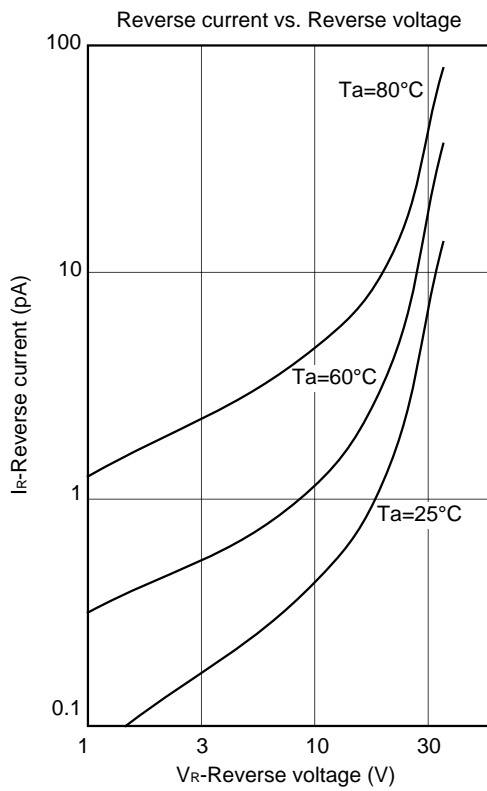
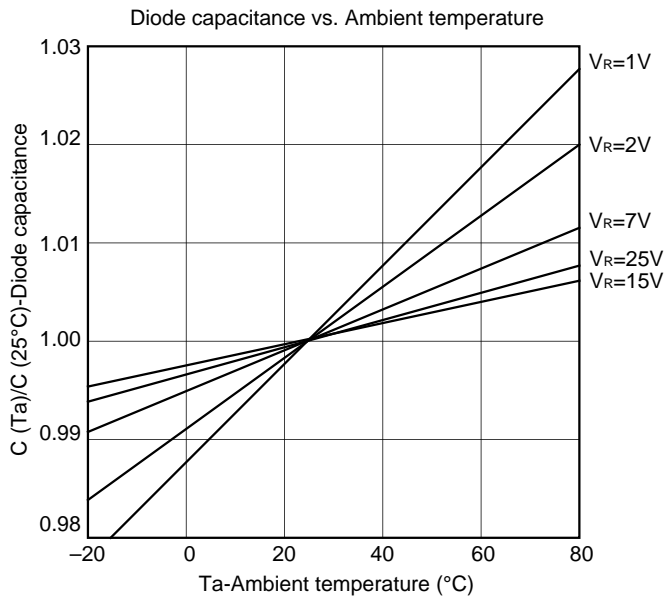
Electrical Characteristics

(Ta=25 °C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I _R	V _R =25 V			10	nA
Reverse voltage	V _R	I _R =1 μ A	30			v
Diode capacitance	C ₁	V _R =1 V, f=1 MHz	5.96		7.16	pF
	C ₂₅	V _R =25 V, f=1 MHz	0.46		0.60	pF
Capacitance ratio	C ₁ /C ₂₅		10.0	12.0		
Series resistance	r _s	V _R =5 V, f=470 MHz		1.30	1.50	Ω
Capacitance deviation in a matching group	Δ C	V _R =1 to 25 V, f=1 MHz			6	%

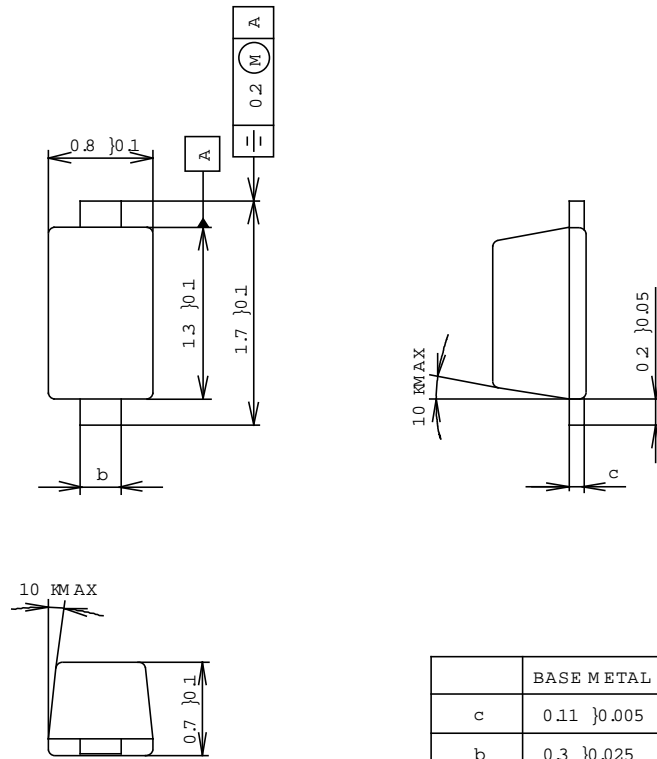
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Package Outline Unit : mm

M-290

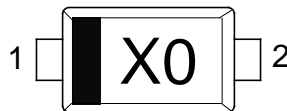


	BASE METAL	WITH PLATING
c	0.11 ± 0.005	0.11 $\begin{matrix} 0.05 \\ 0.01 \end{matrix}$
b	0.3 ± 0.025	0.3 $\begin{matrix} 0.05 \\ 0.02 \end{matrix}$

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