

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

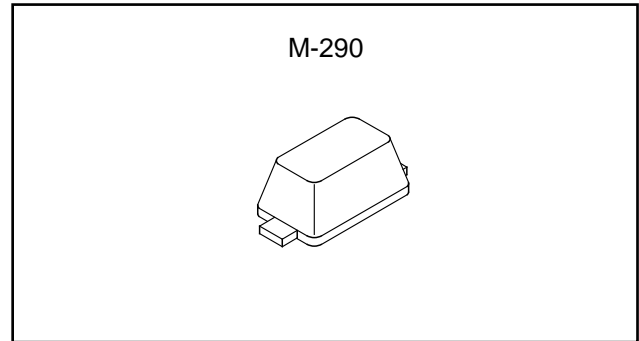
- Super-small-miniature flat package
- Low series resistance: 1.5 Ω Max. (f=470 MHz)
- Large capacitance ratio: 12.0 Typ. (C<sub>1</sub>/C<sub>25</sub>)
- Small leakage current: 10 nA Max. (V<sub>R</sub>=25 V)
- Capacitance deviation in a matching group:  
within 6 %

Applications

Electronic tuning of BS/CS tuners

Structure

Silicon epitaxial planar type diode



Absolute Maximum Ratings (Ta=25 °C)

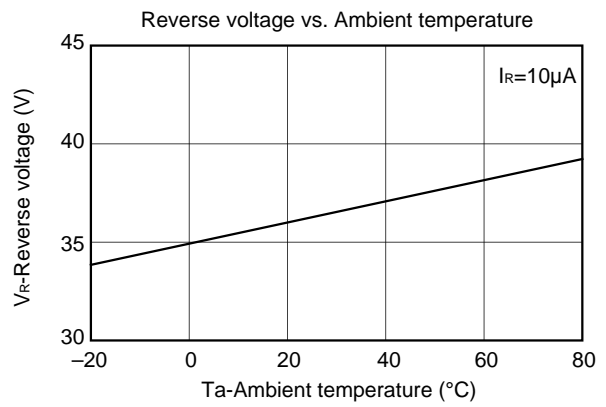
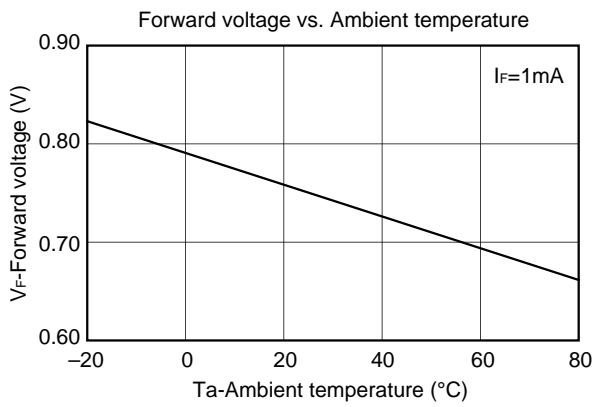
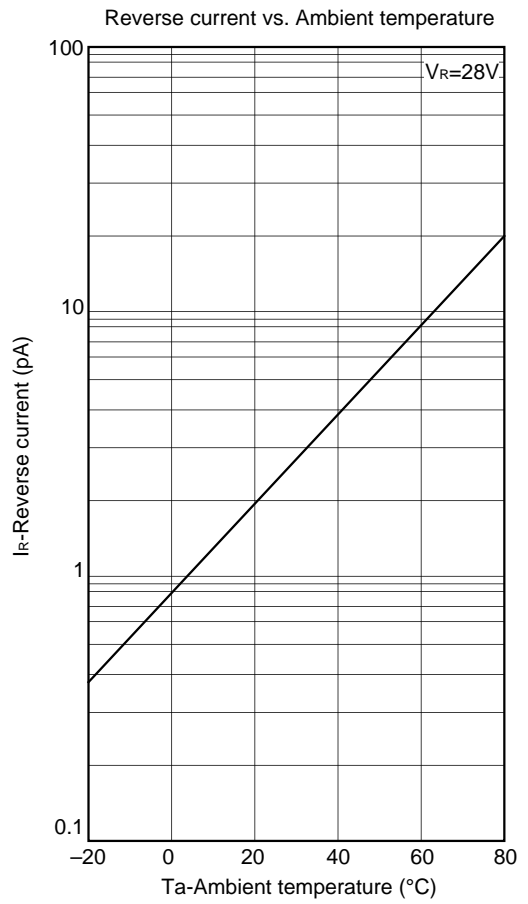
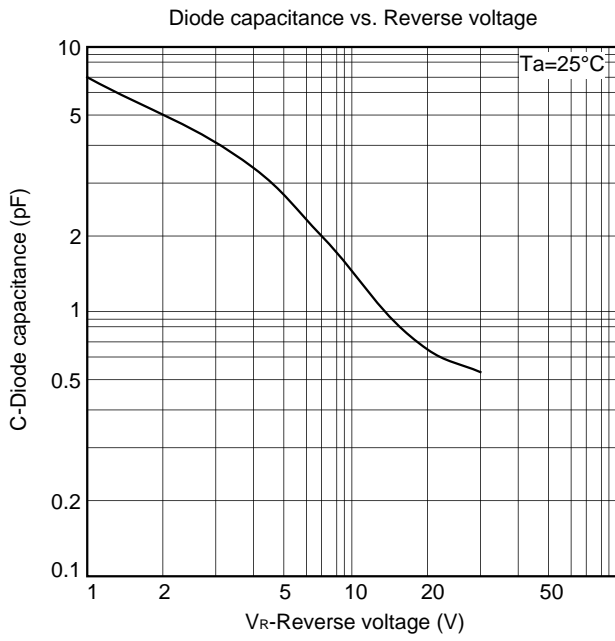
- Reverse voltage V<sub>R</sub> 30 V
- Peak reverse voltage V<sub>RM</sub> 35 V  
(RL ≥ 10 kΩ)
- Operating temperature Topr -20 to +75 °C
- Storage temperature Tstg -65 to +150 °C

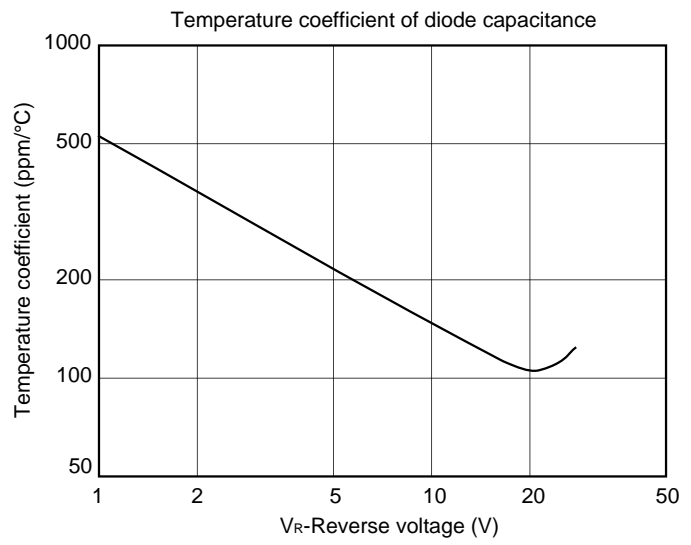
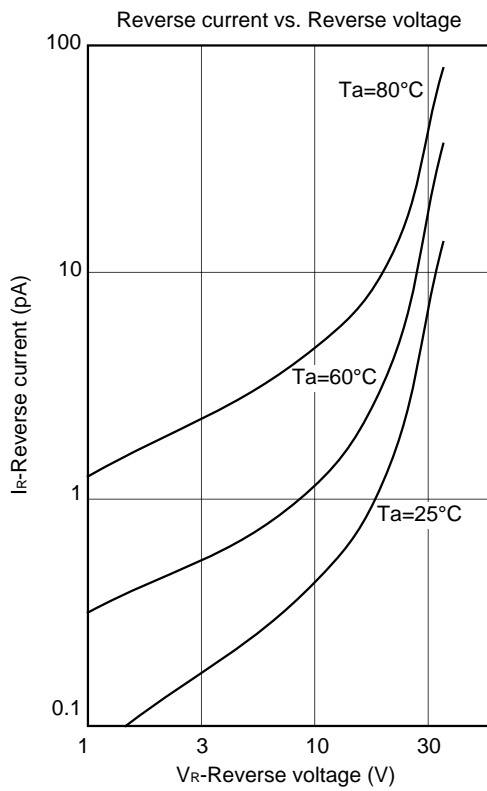
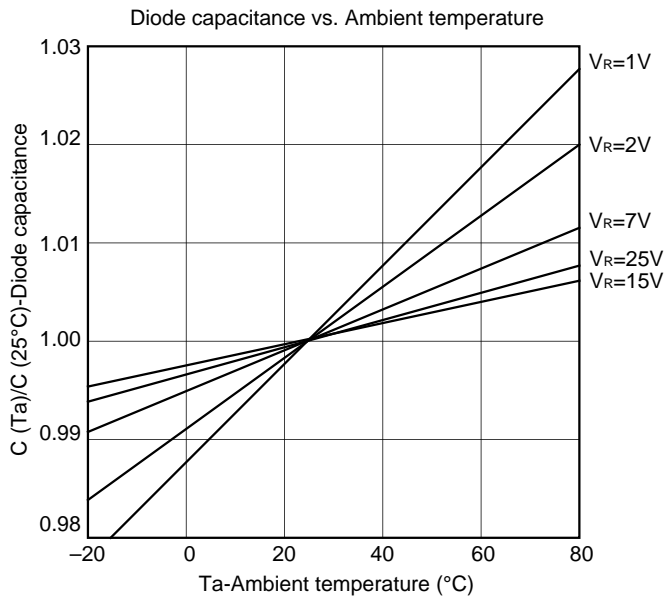
Electrical Characteristics

(Ta=25 °C)

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

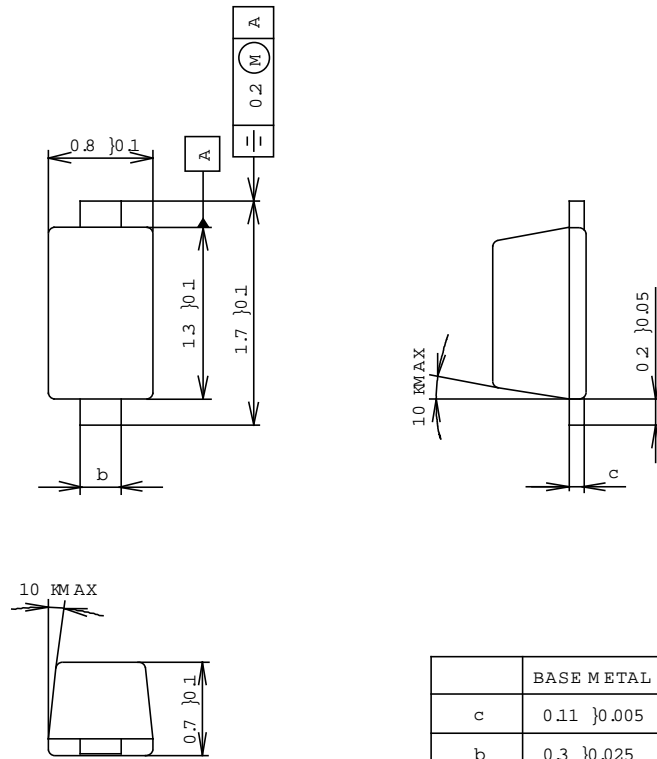
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Package Outline Unit : mm

M-290

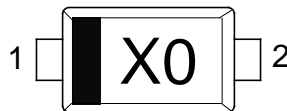


	BASE METAL	WITH PLATING
c	0.11 $\pm 0.005$	0.11 $\begin{matrix} 0.05 \\ 0.01 \end{matrix}$
b	0.3 $\pm 0.025$	0.3 $\begin{matrix} 0.05 \\ 0.02 \end{matrix}$

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