

Variable Capacitance Diode

Description

The 1T402 is a variable capacitance diode designed for electronic tuning of UHF TV tuners using a super-small-miniature flat package (SSVC).

Features

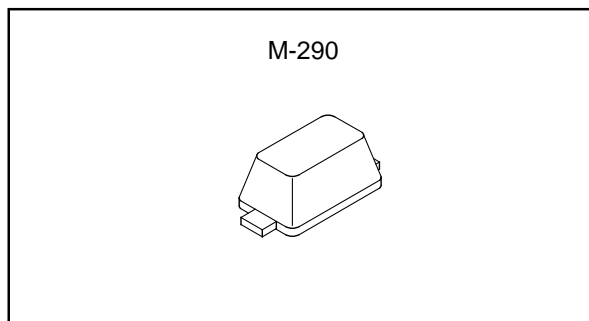
- Super-small-miniature flat package
- Low series resistance: 0.65 Ω Max. (f=470 MHz)
- Large capacitance ratio: 6.5 Typ. (C₂/C₂₅)
- Small leakage current: 10 nA Max. (V_R=28 V)
- Capacitance deviation in a matching group:
within 2 %

Applications

Electronic tuning of TV and CATV tuners

Structure

Silicon epitaxial planar type diode



Absolute Maximum Ratings (T_a=25 °C)

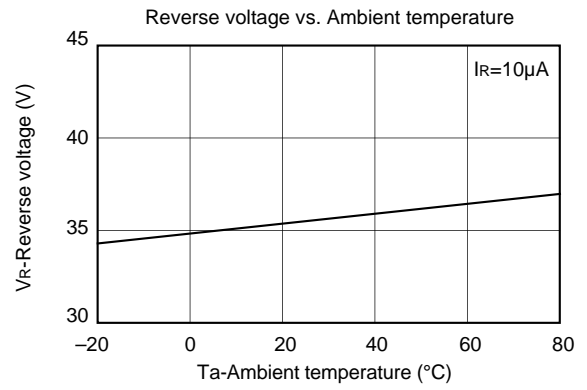
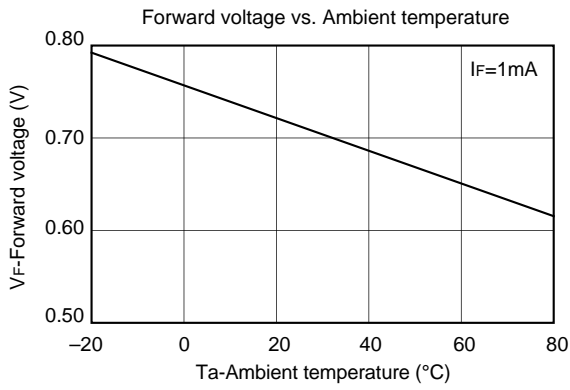
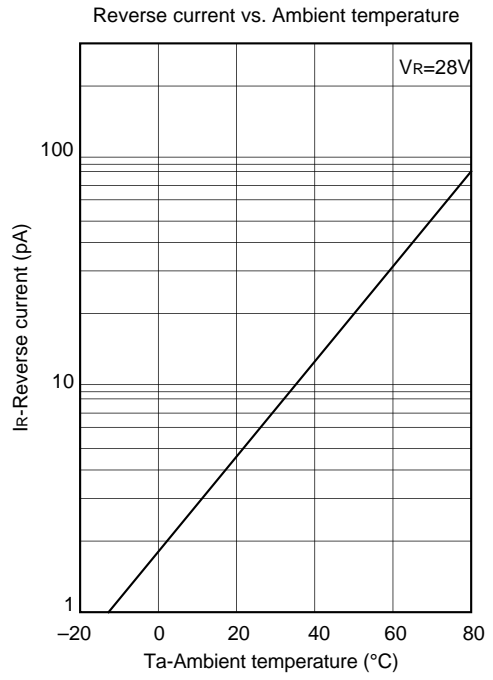
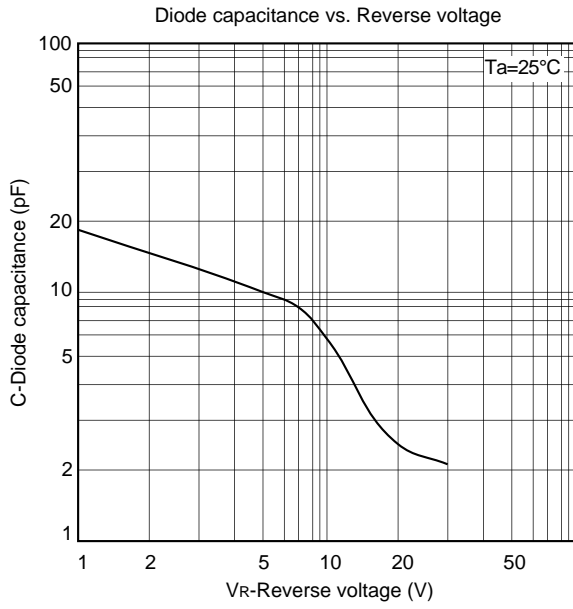
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|-------------------------|------------------|----------------------------------|----|
| • Reverse voltage | V _R | 30 | V |
| • Peak reverse voltage | V _{RM} | 35 | V |
| | | (R _L ≥10 k Ω) | |
| • Operating temperature | T _{opr} | -20 to +75 |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

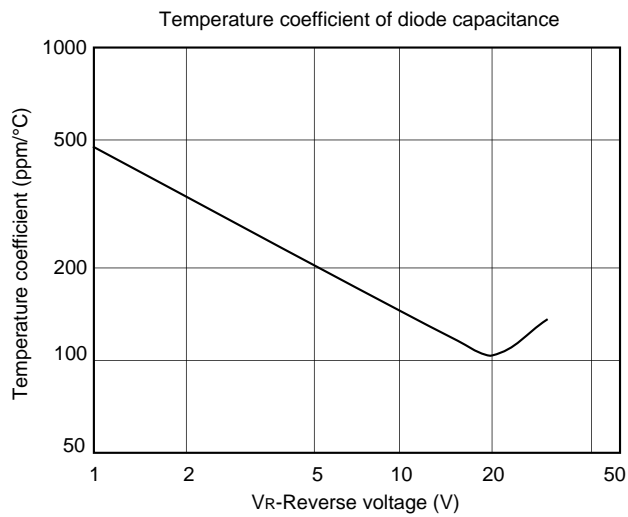
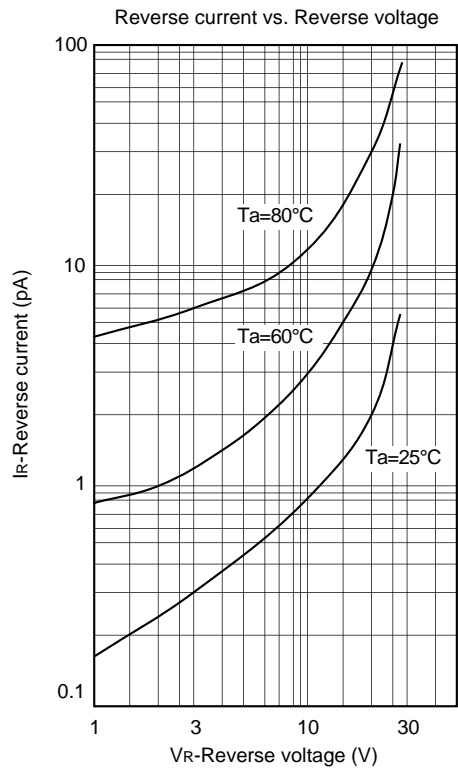
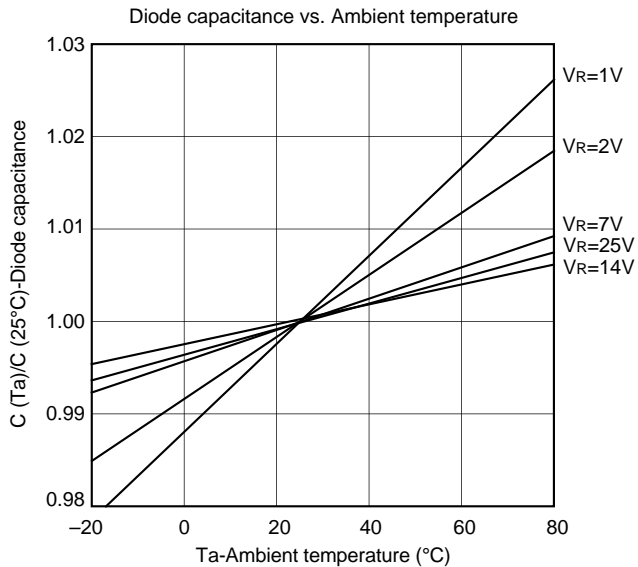
Electrical Characteristics

(T_a=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	13.97		16.29	pF
	C ₂₅	V _R =25 V, f=1 MHz	2.06		2.35	pF
Capacitance ratio	C ₂ /C ₂₅			6.5		
Series resistance	r _s	C _D =14 pF, f=470 MHz		0.57	0.65	Ω
Capacitance deviation in a matching group	ΔC	V _R =2 to 25 V, f=1 MHz			2	%

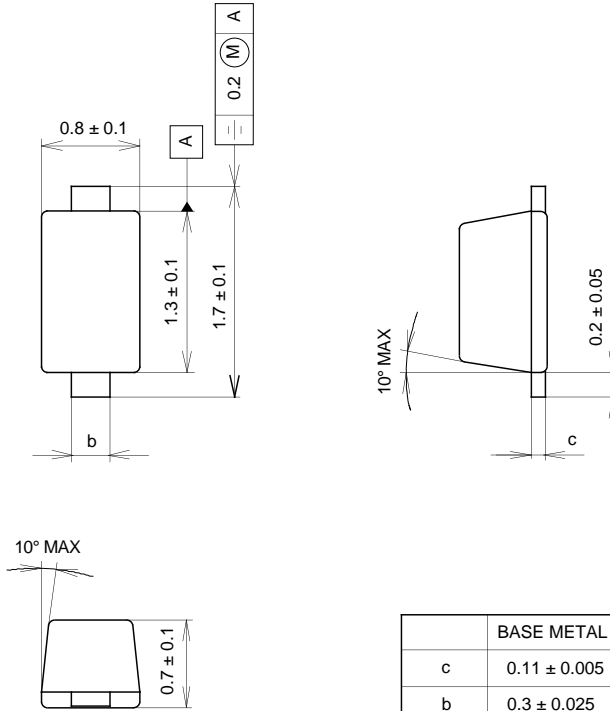
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Package Outline Unit : mm

M-290



	BASE METAL	WITH PLATING
c	0.11 ± 0.005	0.11 + ^{0.05} / _{-0.01}
b	0.3 ± 0.025	0.3 + ^{0.05} / _{-0.02}

SONY CODE	M-290
EIAJ CODE	_____
JEDEC CODE	_____

PACKAGE MATERIAL	EPOXY RESIN
LEAD TREATMENT	SOLDER PLATING
LEAD MATERIAL	COPPER
PACKAGE WEIGHT	0.002g

Mark

