

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

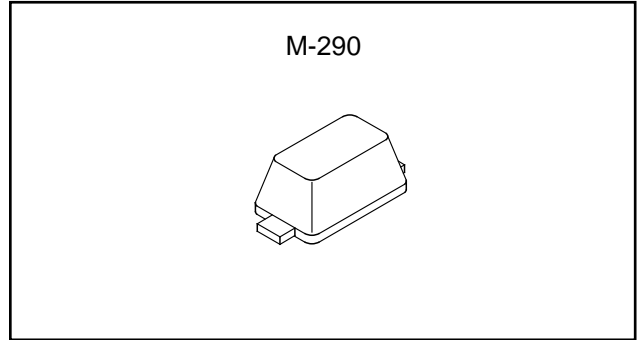
- Super-small-miniature flat package
- Low series resistance: 0.65 Ω Max. (f=470 MHz)
- Large capacitance ratio: 6.5 Typ. (C<sub>2</sub>/C<sub>25</sub>)
- Small leakage current: 10 nA Max. (V<sub>R</sub>=28 V)
- Capacitance deviation in a matching group: within 2 %

Applications

Electronic tuning of TV and CATV tuners

Structure

Silicon epitaxial planar type diode



Absolute Maximum Ratings (Ta=25 °C)

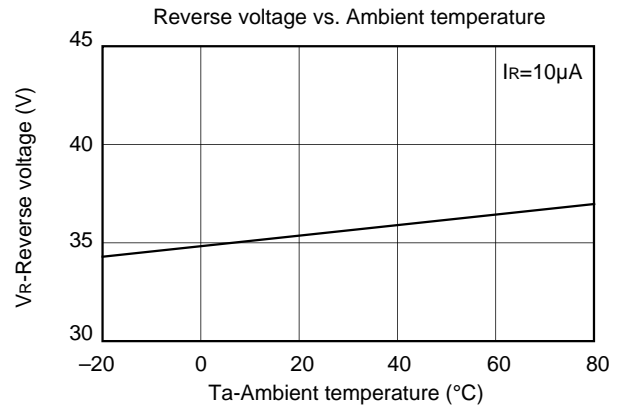
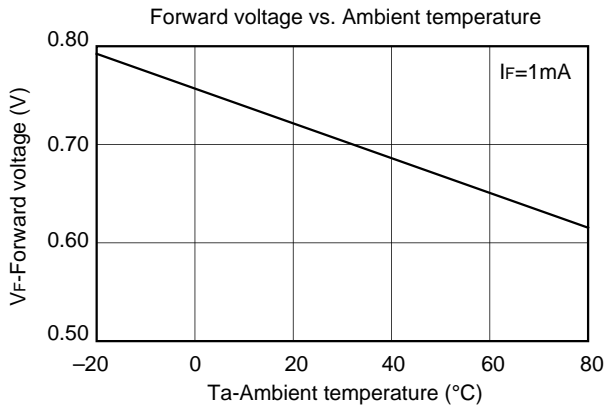
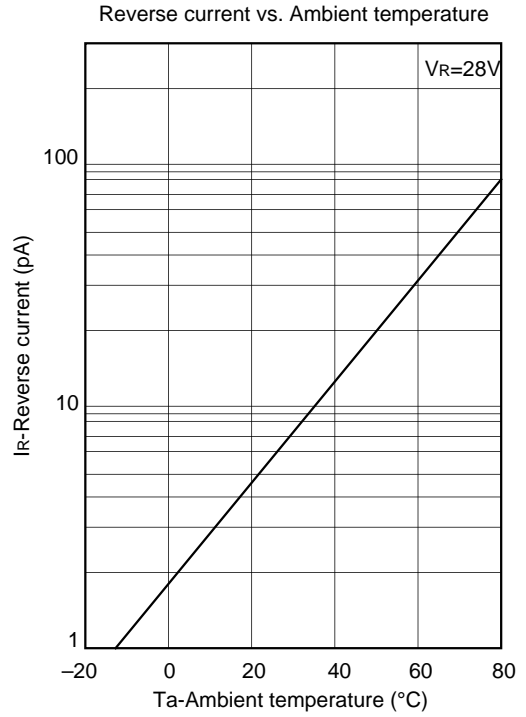
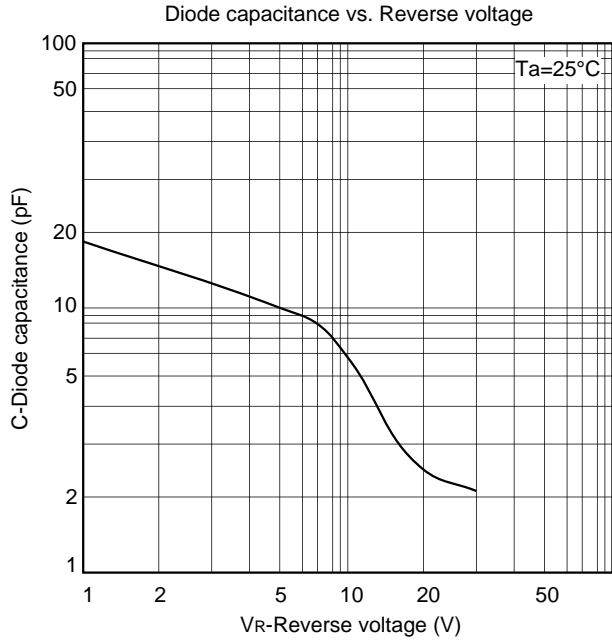
- Reverse voltage V<sub>R</sub> 30 V
- Peak reverse voltage V<sub>RM</sub> 35 V (RL≥10 kΩ)
- Operating temperature Topr -20 to +75 °C
- Storage temperature Tstg -65 to +150 °C

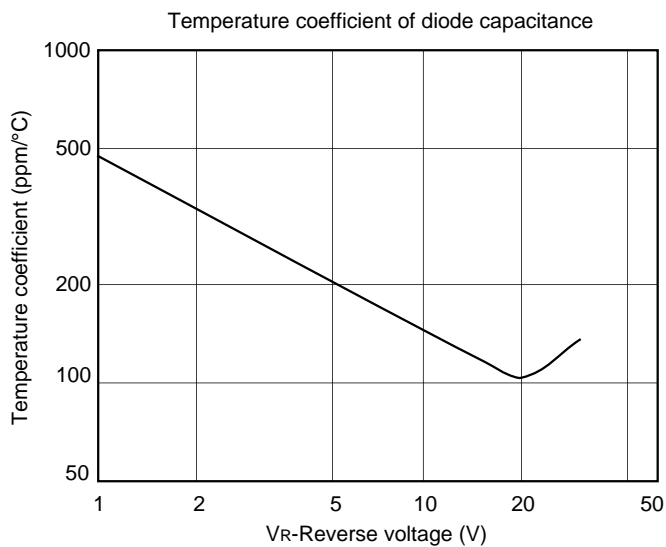
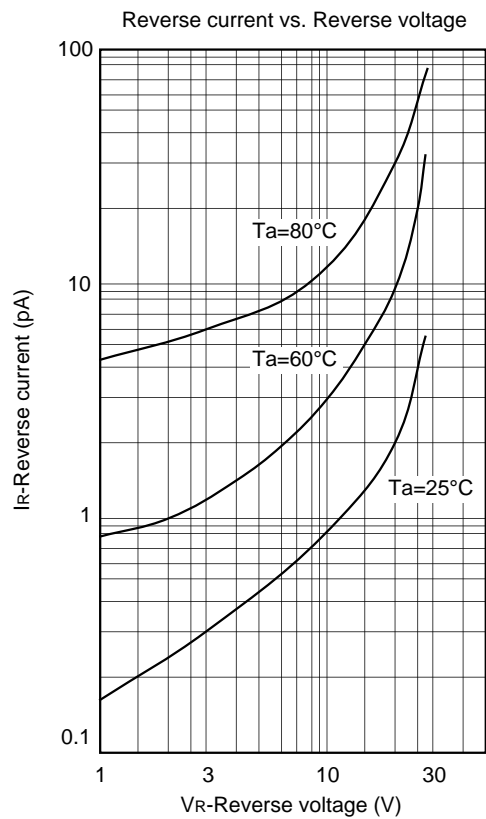
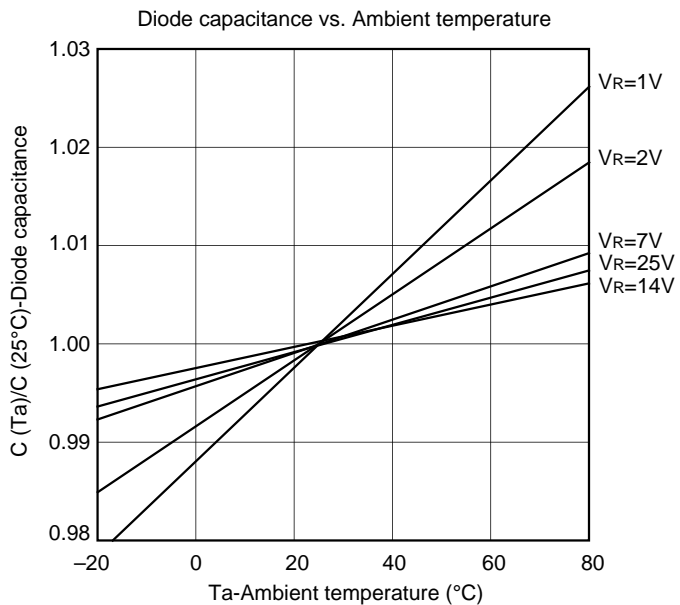
Electrical Characteristics

(Ta=25 °C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I <sub>R</sub>	V <sub>R</sub> =28 V			10	nA
Diode capacitance	C <sub>2</sub>	V <sub>R</sub> =2 V, f=1 MHz	13.97		16.29	pF
	C <sub>25</sub>	V <sub>R</sub> =25 V, f=1 MHz	2.06		2.35	pF
Capacitance ratio	C <sub>2</sub> /C <sub>25</sub>			6.5		
Series resistance	r <sub>s</sub>	C <sub>D</sub> =14 pF, f=470 MHz		0.57	0.65	Ω
Capacitance deviation in a matching group	ΔC	V <sub>R</sub> =2 to 25 V, f=1 MHz			2	%

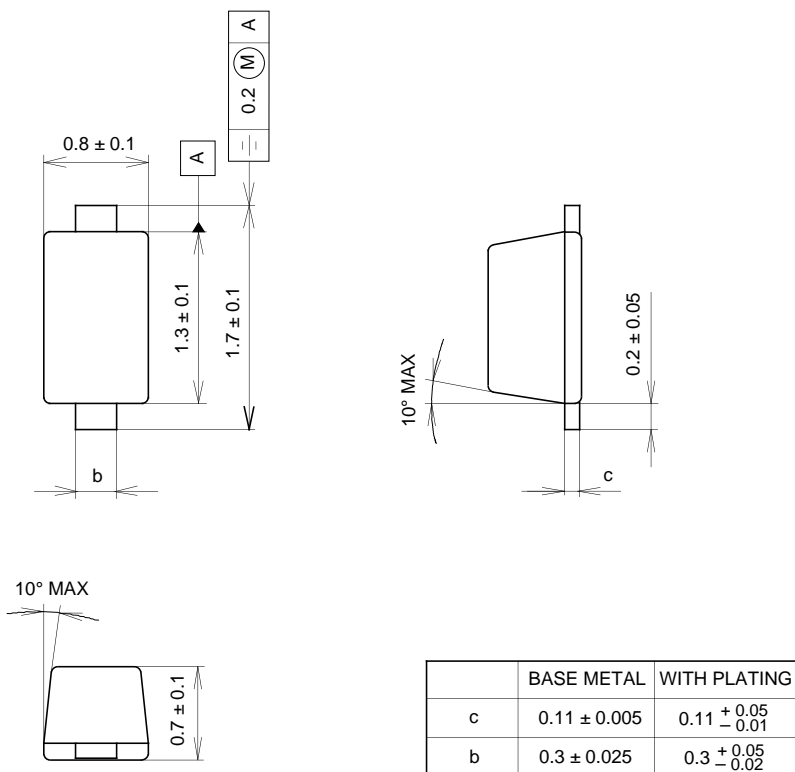
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Package Outline Unit : mm

M-290



SONY CODE	M-290
EIAJ CODE	_____
JEDEC CODE	_____

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

Mark

