

Variable Capacitance Diode

Description

The 1T404 is a variable capacitance diode designed for electronic tuning of wide-band CATV tuners using a super-small-miniature flat package (SSVC).

Features

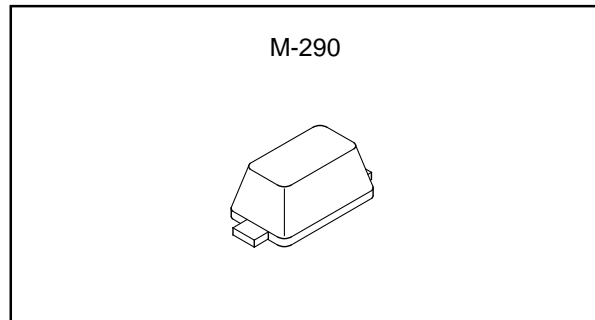
- Super-small-miniature flat package
- Low series resistance: 0.75Ω Max. ($f=470$ MHz)
- Large capacitance ratio: 11.5 Typ. (C_2/C_{25})
- Small leakage current: 10 nA Max. ($V_R=28$ V)
- Capacitance deviation in a matching group:
within 2 %

Applications

Electronic tuning of wide-band CATV tuners

Structure

Silicon epitaxial planar type diode



Absolute Maximum Ratings ($T_a=25$ °C)

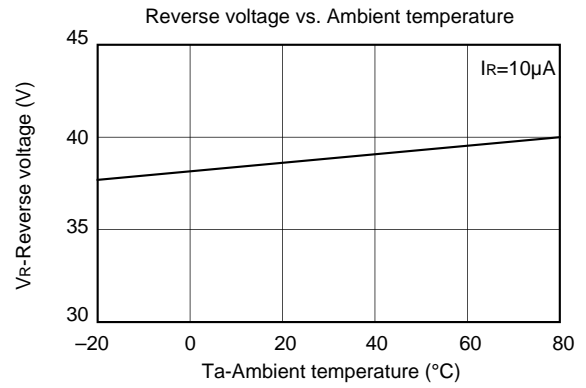
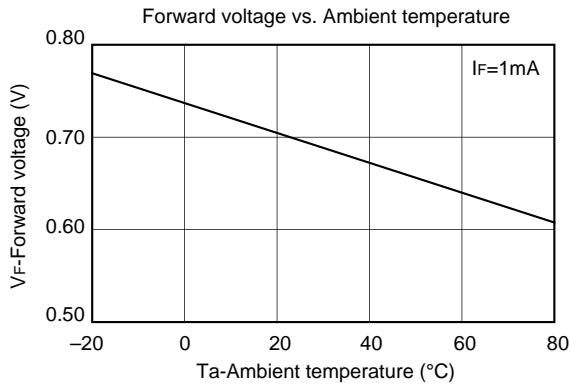
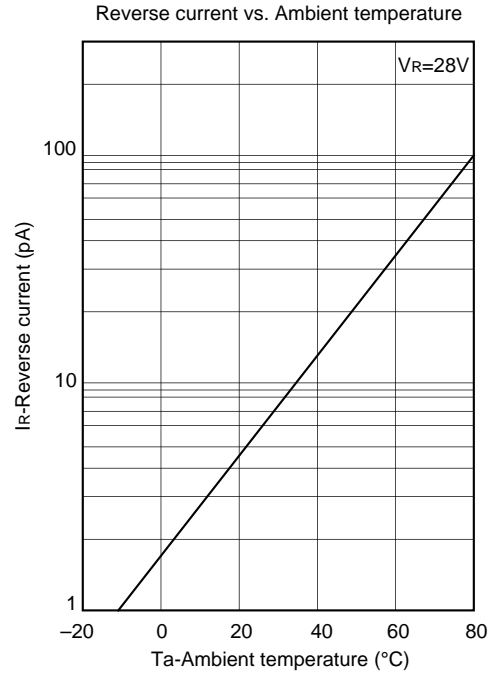
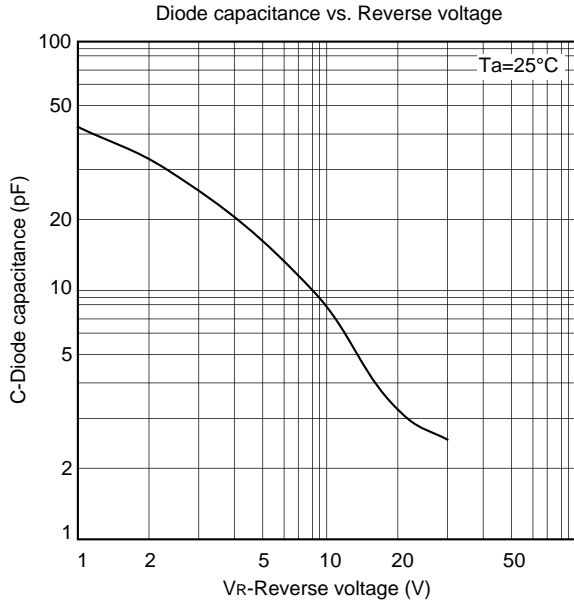
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|-------------------------|-----------|-------------|----|
| • Reverse voltage | V_R | 34 | V |
| • Operating temperature | T_{opr} | -20 to +75 | °C |
| • Storage temperature | T_{stg} | -65 to +150 | °C |

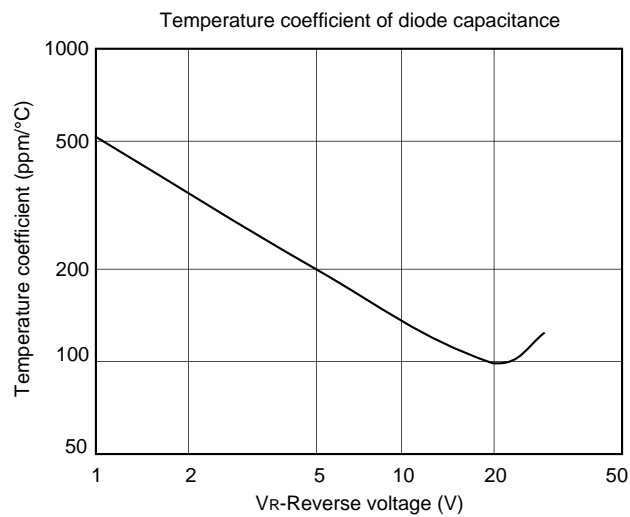
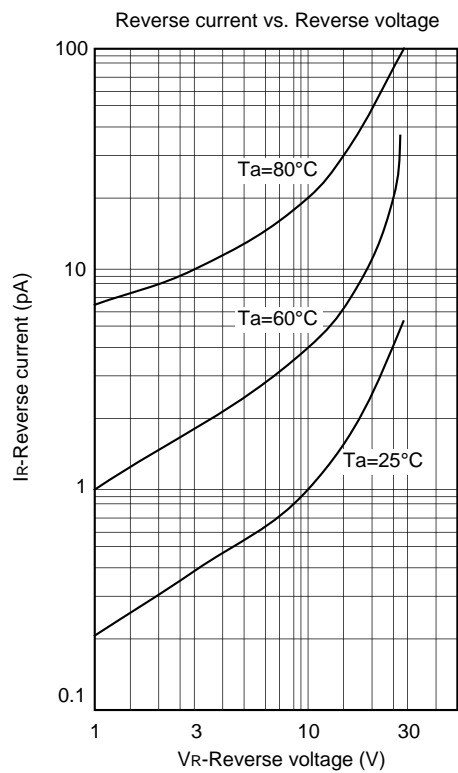
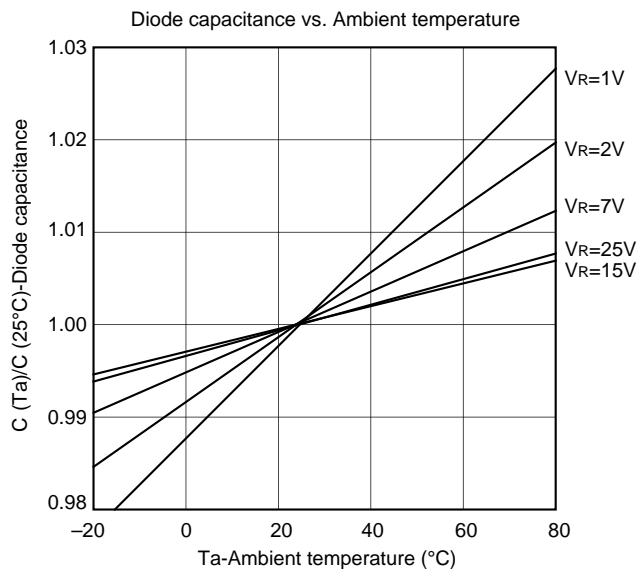
Electrical Characteristics

($T_a=25$ °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	29.36		34.26	pF
	C_{25}	$V_R=25$ V, $f=1$ MHz	2.49		2.89	pF
Capacitance ratio	C_2/C_{25}		11.0	11.5		
Series resistance	r_s	$C_D=14$ pF, $f=470$ MHz			0.75	Ω
Capacitance deviation in a matching group	ΔC	$V_R=2$ to 25 V, $f=1$ MHz			2	%

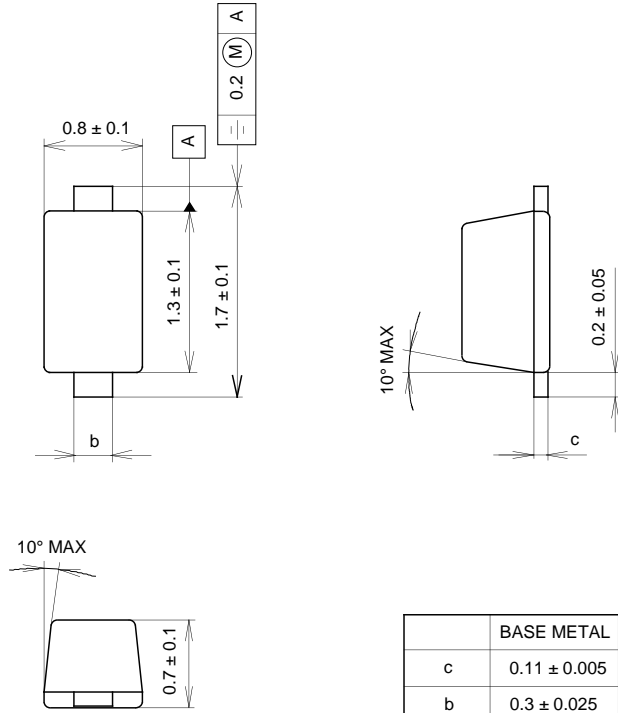
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Package Outline Unit : mm

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



1 : Cathode

2 : Anode