

Variable Capacitance Diode

Description

The 1T403 is a variable capacitance diode designed for electronic tuning of VHF TV tuners and CATV tuners using a super-small-miniature flat package (SSVC).

Features

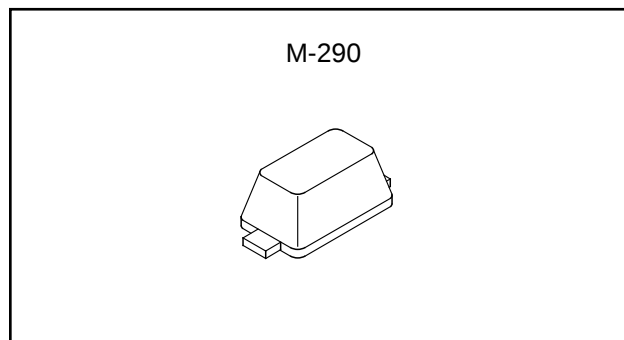
- Super-small-miniature flat package
- Low series resistance: $0.8\ \Omega$ Max. ($f=470\ \text{MHz}$)
- Large capacitance ratio: 15.0 Typ. (C_1/C_{28})
- Small leakage current: $10\ \text{nA}$ Max. ($V_R=28\ \text{V}$)
- Capacitance deviation in a matching group:
within 2 %

Applications

Electronic tuning of TV and CATV tuners

Structure

Silicon epitaxial planar type diode



Absolute Maximum Ratings ($T_a=25\ ^\circ\text{C}$)

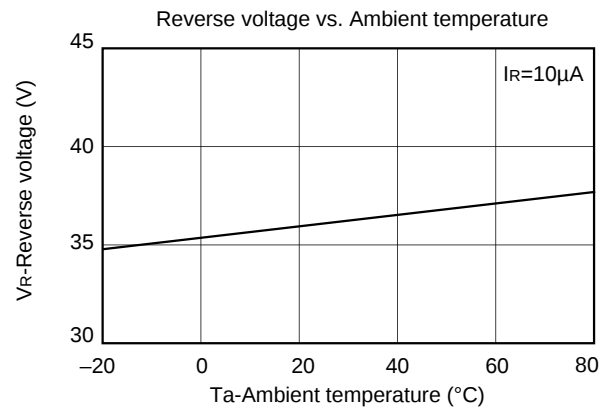
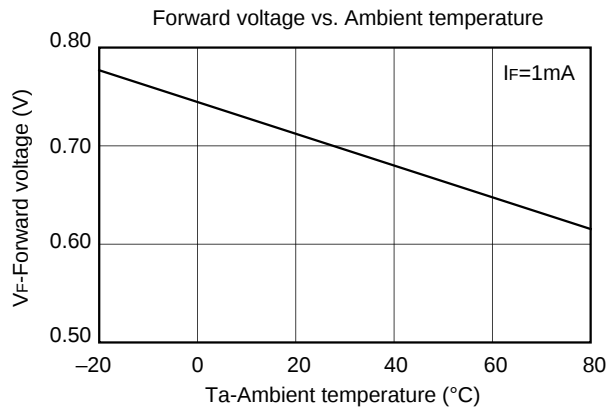
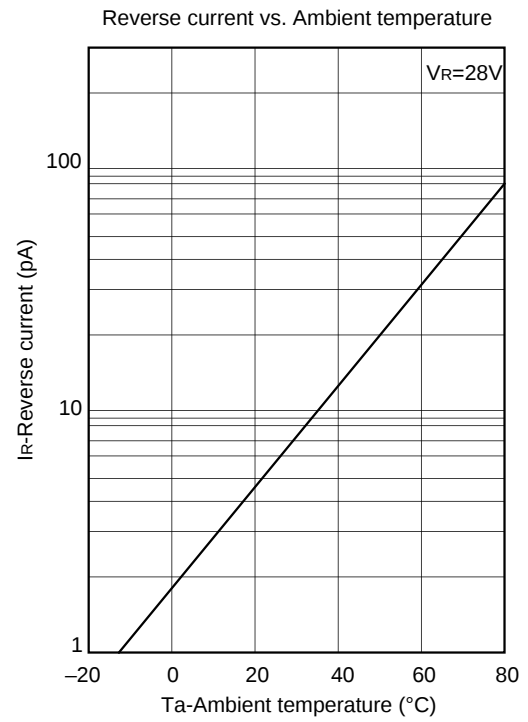
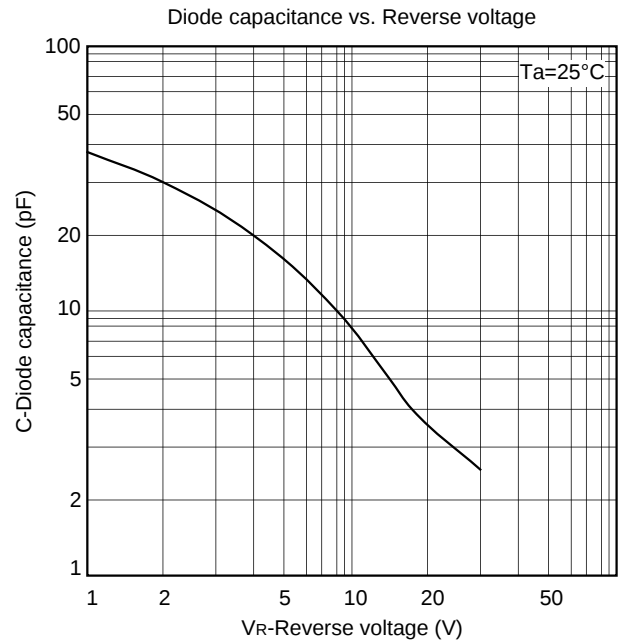
- Reverse voltage V_R 30 V
- Peak reverse voltage V_{RM} 35 V
($R_L \geq 10\ \text{k}\Omega$)
- Operating temperature T_{opr} -20 to $+75\ ^\circ\text{C}$
- Storage temperature T_{stg} -65 to $+150\ ^\circ\text{C}$

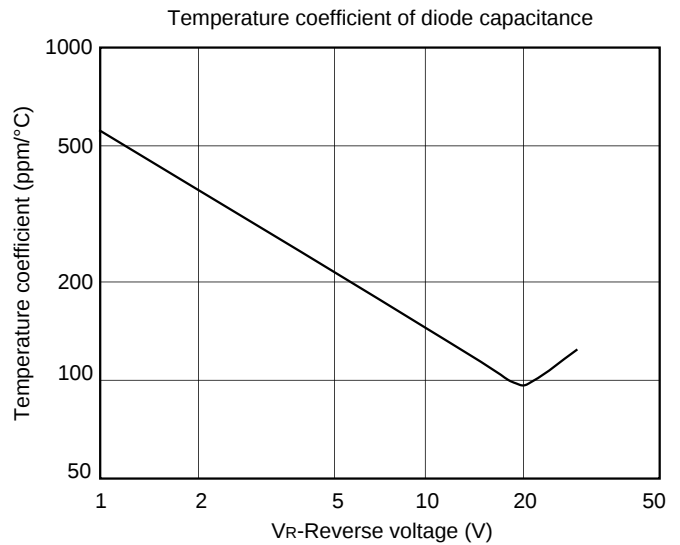
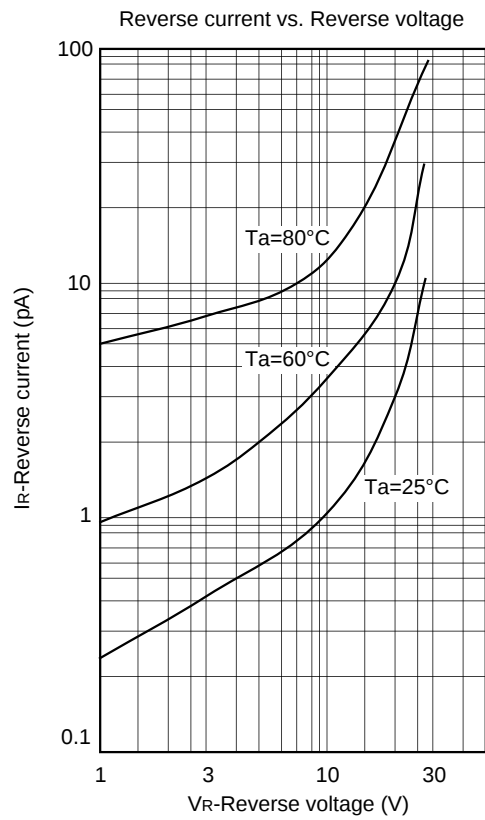
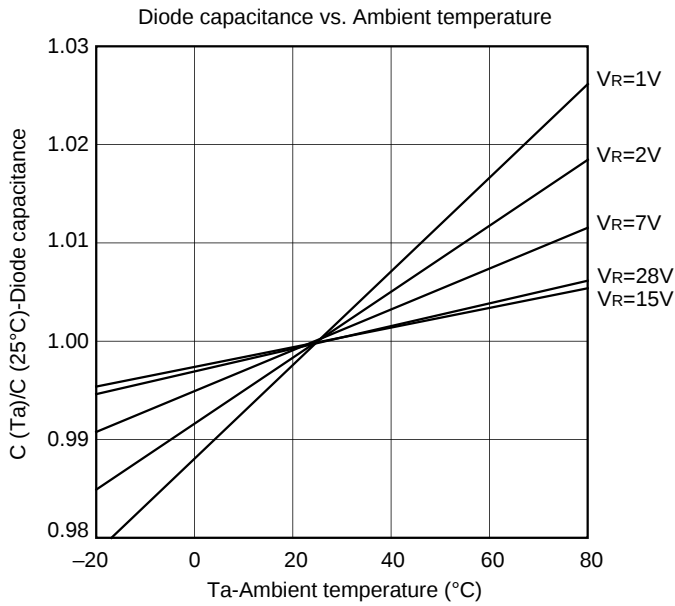
Electrical Characteristics

($T_a=25\ ^\circ\text{C}$)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I_R	$V_R=28\ \text{V}$			10	nA
Diode capacitance	C_1	$V_R=1\ \text{V}$, $f=1\ \text{MHz}$	34.61		42.31	pF
	C_{28}	$V_R=28\ \text{V}$, $f=1\ \text{MHz}$	2.321		2.714	pF
Capacitance ratio	C_1/C_{28}		13.5	15.0		
Series resistance	r_s	$C_D=14\ \text{pF}$, $f=470\ \text{MHz}$		0.75	0.80	Ω
Capacitance deviation in a matching group	ΔC	$V_R=1$ to $28\ \text{V}$, $f=1\ \text{MHz}$			2	%

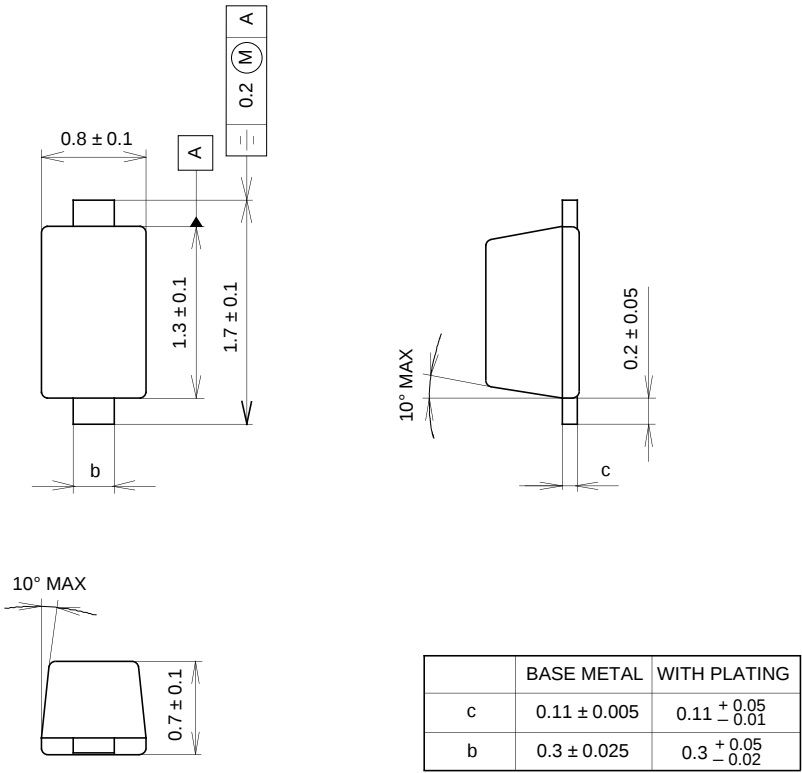
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Package Outline Unit : mm

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

