

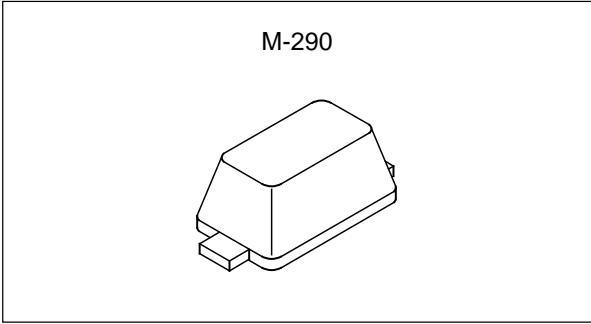
Variable Capacitance Diode

Description

The 1T408 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
- Small series resistance 0.75Ω Max. (f = 470MHz)
- Large capacitance ratio 11.7 Typ. (C₂/C₂₅)
18.0 Typ. (C₁/C₂₈)
- Small leakage current 10nA Max. (V_R = 28V)
- 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)

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

Electrical Characteristics

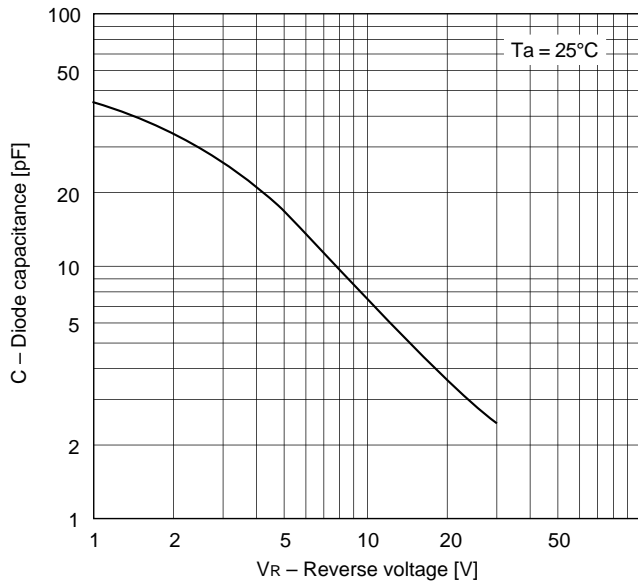
(T_a = 25°C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I _R	V _R = 28V			10	nA
Diode capacitance	C ₂	V _R = 2V, f = 1MHz	29.46		35.46	pF
	C ₂₅	V _R = 25V, f = 1MHz	2.49		2.89	pF
Capacitance ratio	C ₂ /C ₂₅		11.0	11.7		
	C ₂₅ /C ₂₈		1.03			
Series resistance	r _s	C _D = 14pF, f = 470MHz			0.75	Ω
Capacitance deviation in a matching group	ΔC	V _R = 2 to 25V, f = 1MHz			2	%

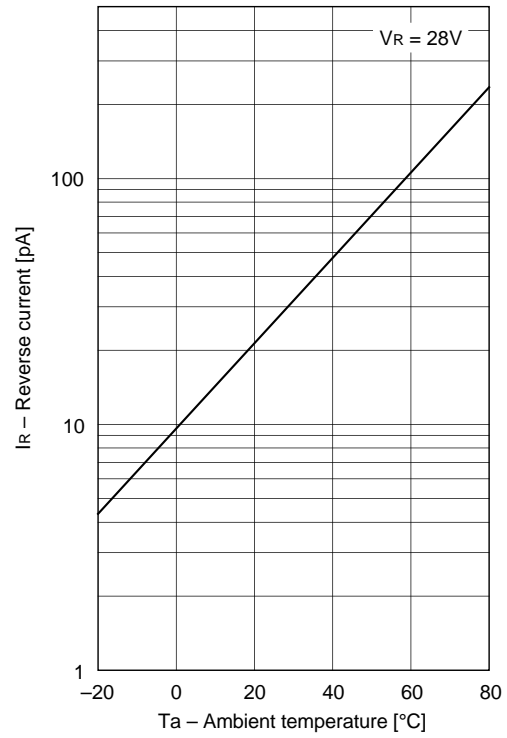
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Example of Representative Characteristics

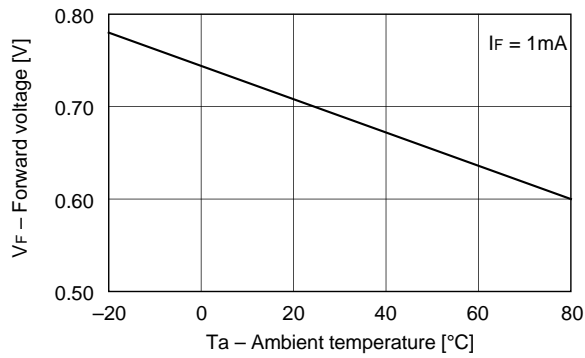
Diode capacitance vs. Reverse voltage



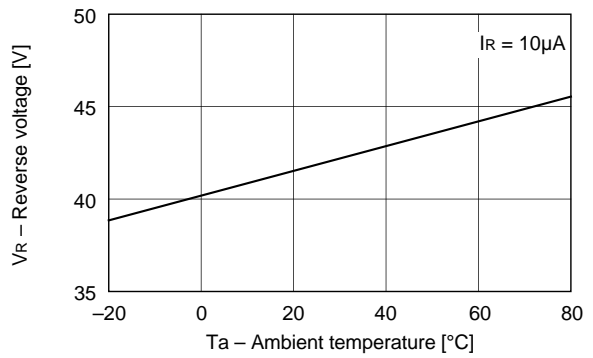
Reverse current vs. Ambient temperature

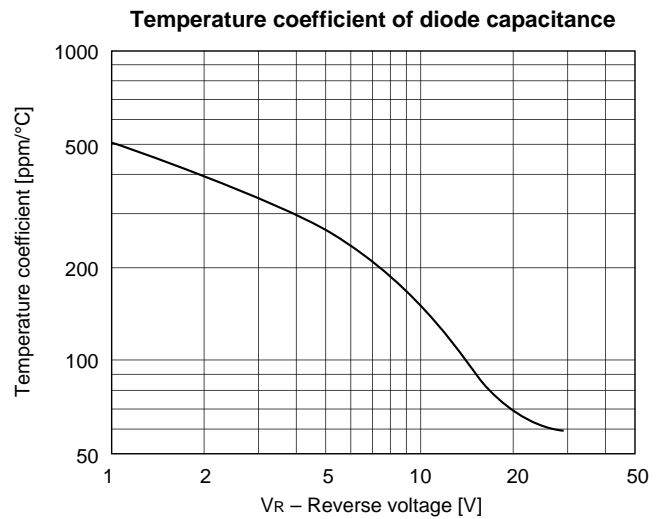
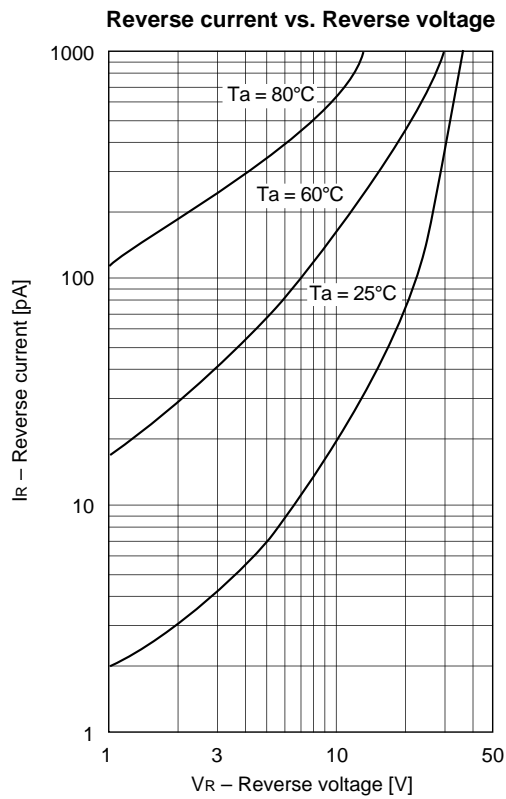
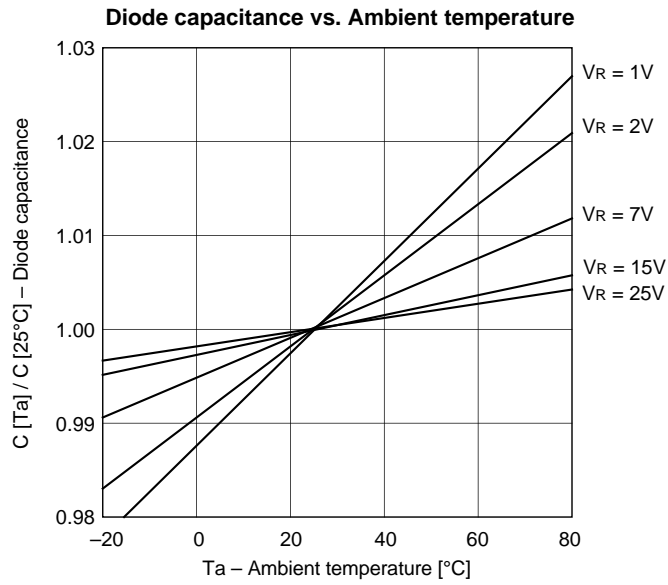


Forward voltage vs. Ambient temperature



Reverse voltage vs. Ambient temperature

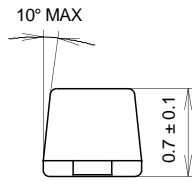
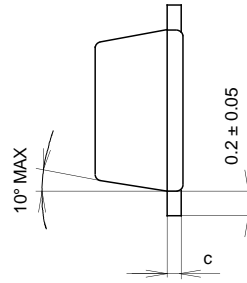
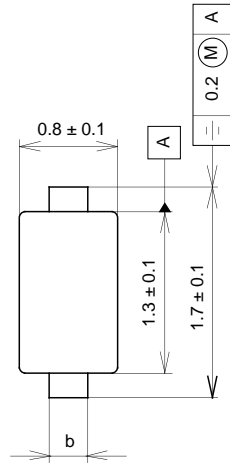




Package Outline

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