

Variable Capacitance Diode

Description

The 1T417 is a variable capacitance diode designed for electronic tuning of BS/CS tuners using a super-small-miniature flat package (SSVC).

Features

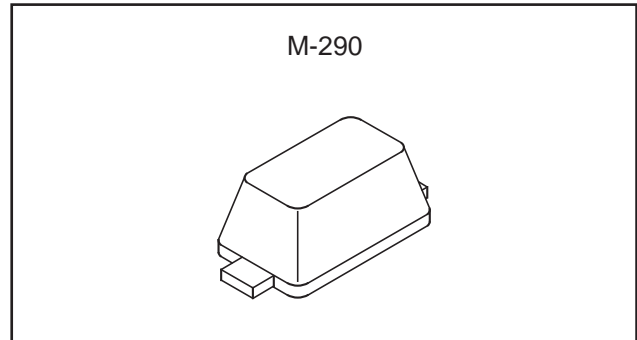
- Super-small-miniature flat package
- Low series resistance: 1.5 Ω Max. (f=470 MHz)
- Large capacitance ratio: 15.5 Typ. (C₁/C₂₅)
- Small leakage current: 10 nA Max. (V_R=25 V)
- Capacitance deviation in a matching group:
within 6 %

Applications

Electronic tuning of BS/CS tuners

Structure

Silicon epitaxial planar type diode



Absolute Maximum Ratings (T_a=25 °C)

- Reverse voltage V_R 30 V
- Peak reverse voltage V_{RM} 35 V
(R_L ≥ 10 kΩ)
- Operating temperature T_{opr} -20 to +75 °C
- Storage temperature T_{stg} -65 to +150 °C

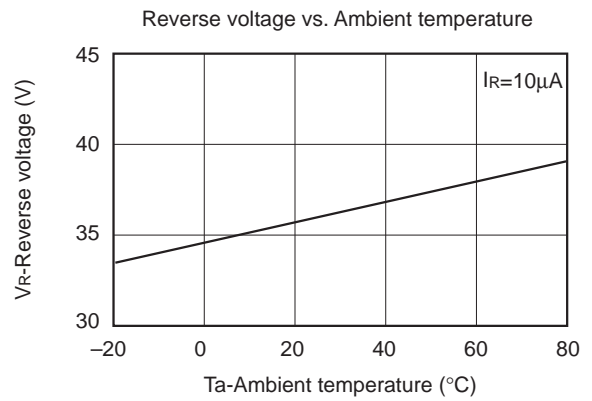
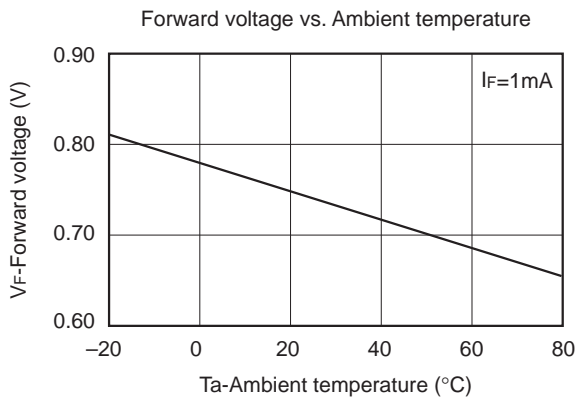
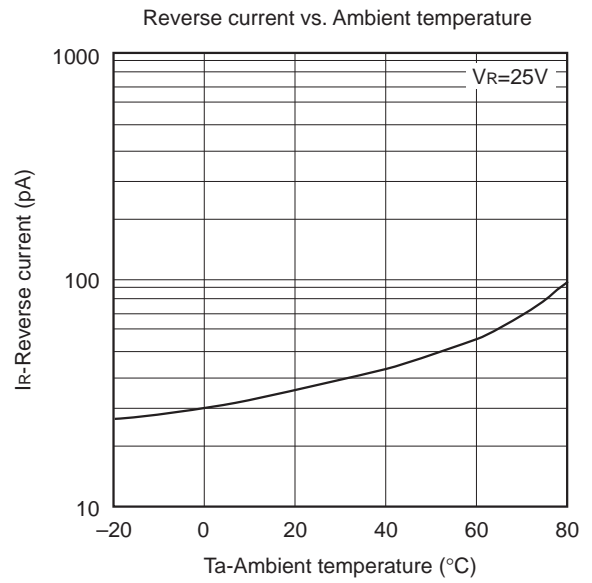
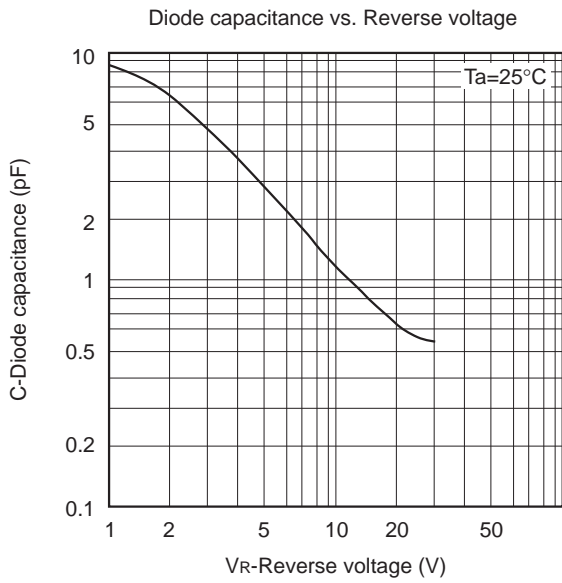
Electrical Characteristics

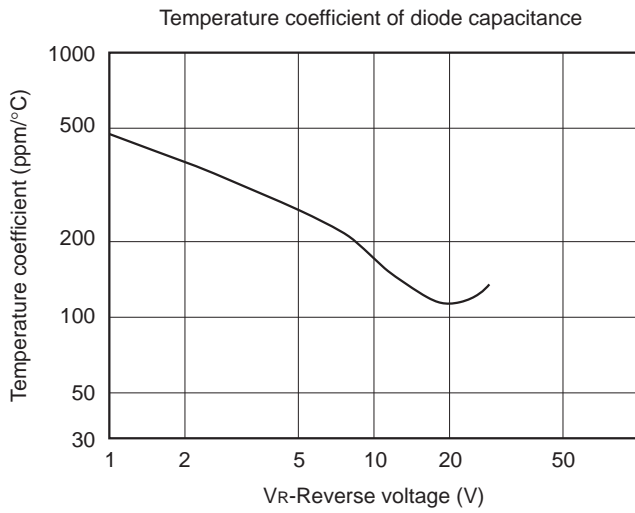
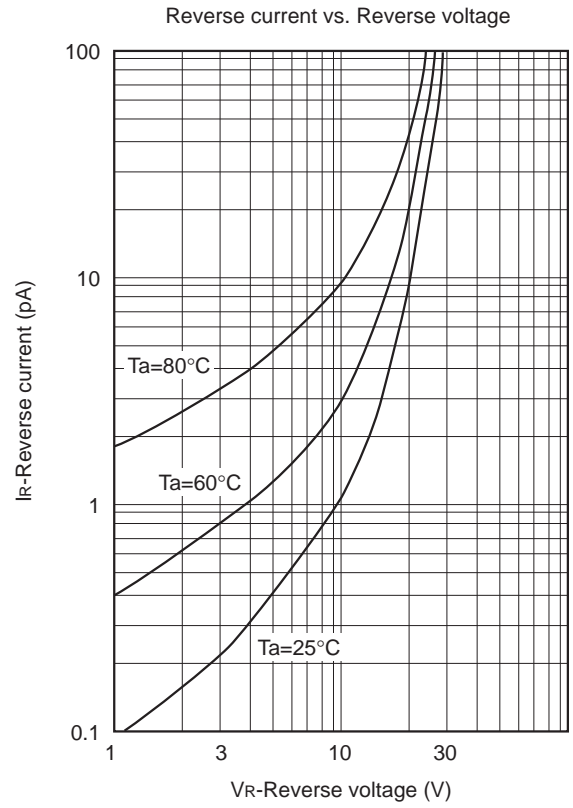
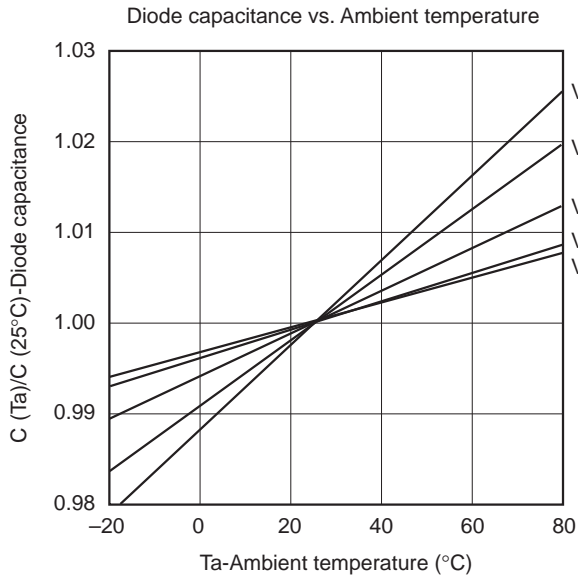
(T_a=25 °C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	I _R	V _R =25 V			10	nA
Reverse voltage	V _R	I _R =1 μA	30			V
Diode capacitance	C ₁	V _R =1 V, f=1 MHz	7.8	8.6	9.4	pF
	C ₂₅	V _R =25 V, f=1 MHz	0.5		0.6	pF
Capacitance ratio	C ₁ /C ₂₅		13.0	15.5		
Series resistance	r _s	V _R =5 V, f=470 MHz		1.30	1.50	Ω
Capacitance deviation in a matching group	ΔC	V _R =1 to 25 V, f=1 MHz			6.0	%

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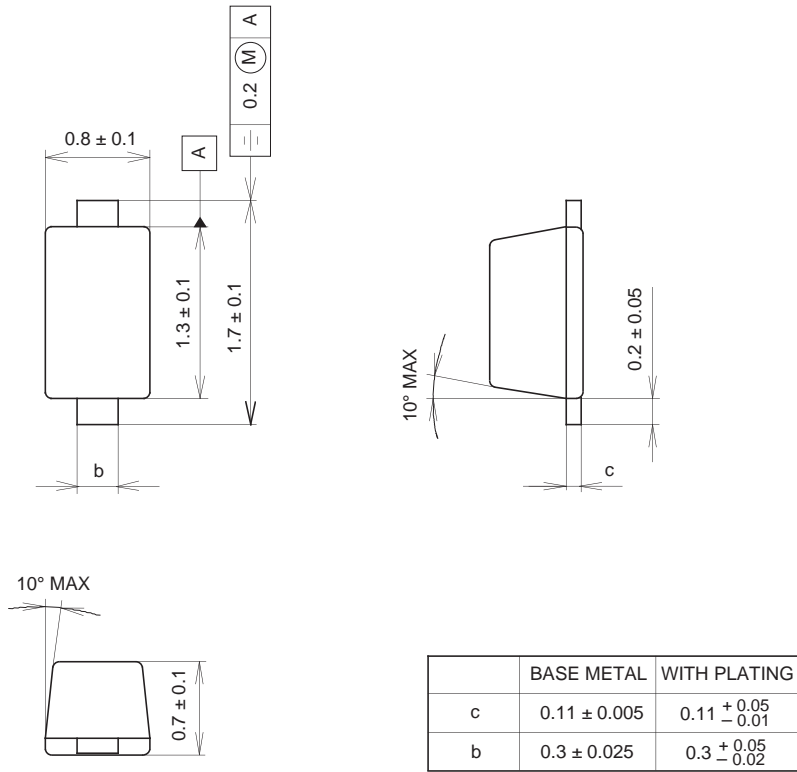
Example of Representative Characteristics





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



1 : Cathode
2 : Anode