

Variable Capacitance Diode

Description

The 1T413 is a variable capacitance diode designed for the digital cellular phone VCO using a super-small-miniature flat package (SSVC).

Features

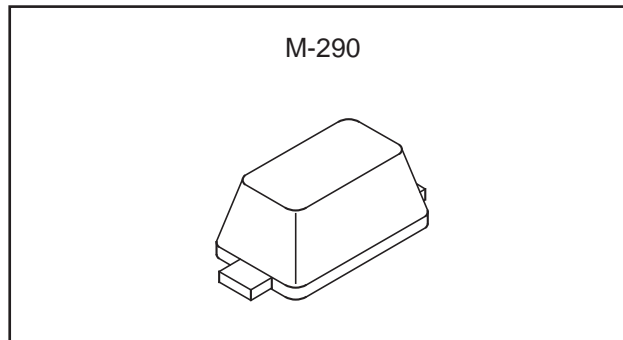
- Super-small-miniature flat package
- Low series resistance: 0.40 Ω Max. (f=470 MHz)
- Large capacitance ratio: 2.90 Typ. (C1/C4)
- Small leakage current: 10 nA Max. (VR=15 V)

Applications

Digital cellular phone VCO

Structure

Silicon epitaxial planar type diode



Absolute Maximum Ratings (Ta=25 °C)

- Reverse voltage VR 15 V
- Operating temperature Topr -20 to +75 °C
- Storage temperature Tstg -65 to +150 °C

Electrical Characteristics

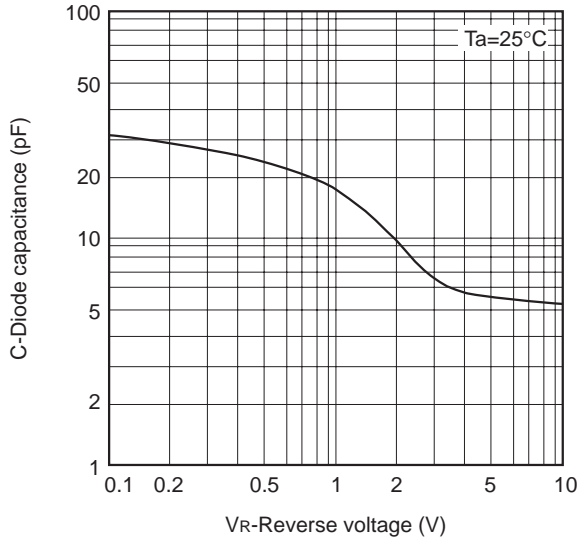
(Ta=25 °C)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse current	IR	VR=15 V			10.0	nA
Diode capacitance	C1	VR=1 V, f=1 MHz	15.0		17.5	pF
	C4	VR=4 V, f=1 MHz	5.1		6.1	pF
Capacitance ratio	C1/C4		2.5	2.9		
Series resistance	rs	VR=1 V, f=470 MHz			0.40	Ω

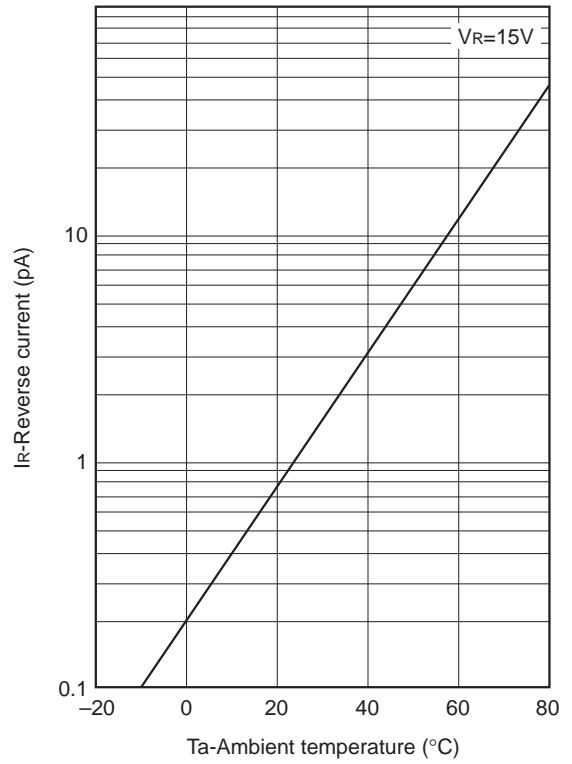
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Example of Representative Characteristics

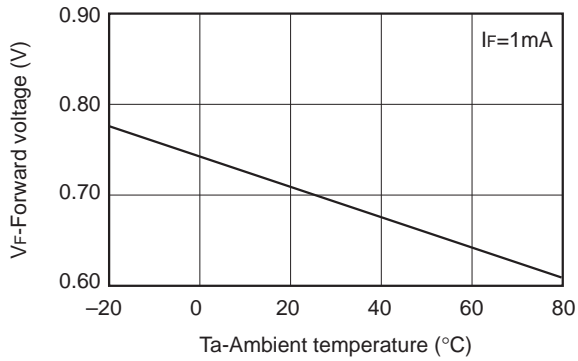
Diode capacitance vs. Reverse voltage



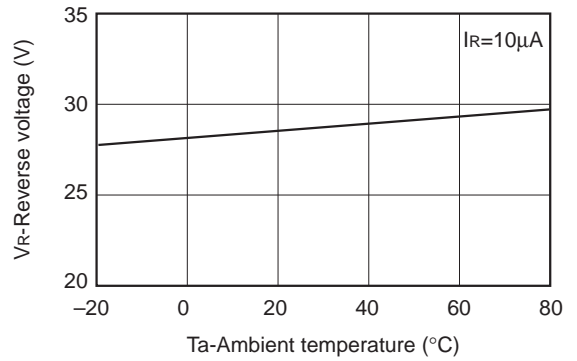
Reverse current vs. Ambient temperature

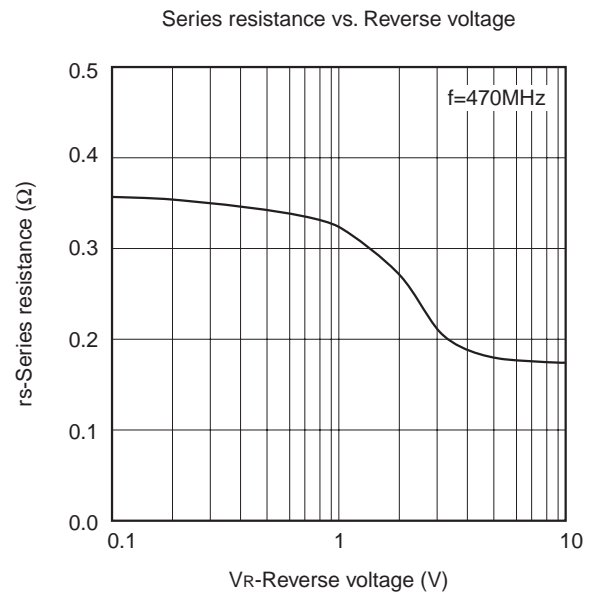
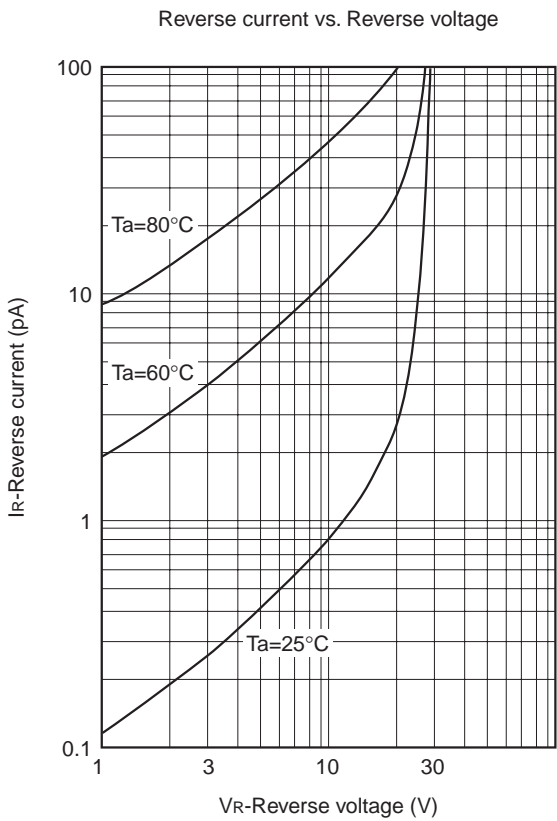
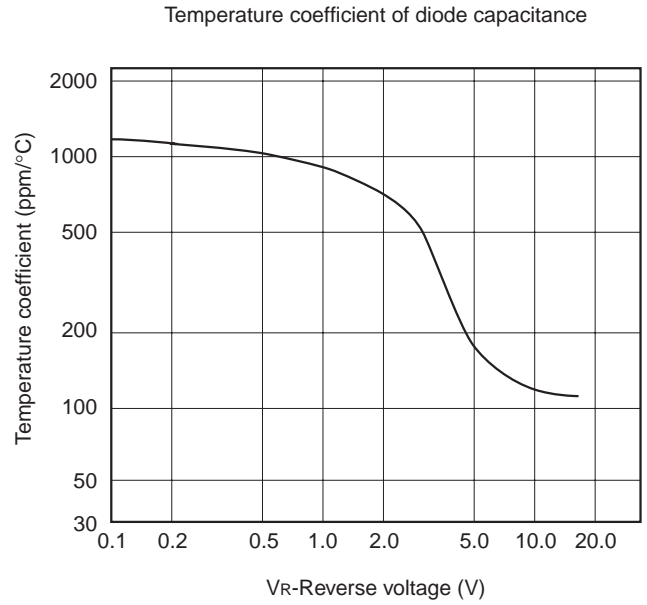
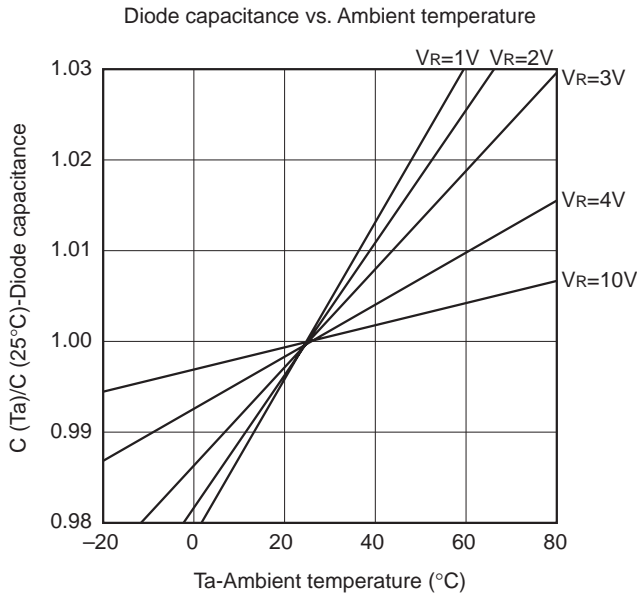


Forward voltage vs. Ambient temperature



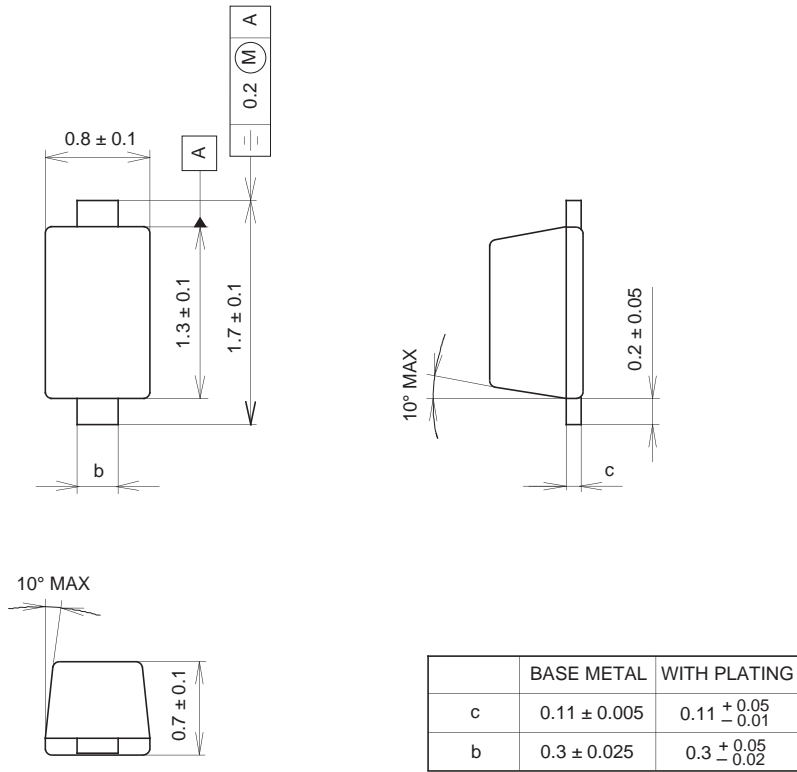
Reverse voltage vs. Ambient temperature





Package Outline Unit : mm

M-290



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