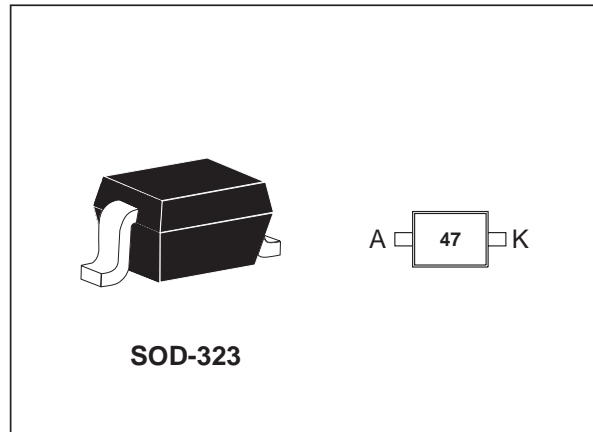


FEATURES AND BENEFITS

- High capacitance ratio
- Tuned for 900 Mhz band in mobile phone
- Surface mount device

DESCRIPTION

The STDV901J is a variable capacitance diode in SOD-323 package. This diode is intended to be used in mobile phone application to control the VCO frequency.

**ABSOLUTE RATINGS** (limiting values)

Symbol	Parameter	Value	Unit
V_R	Continuous reverse voltage	6	V
I_F	Continuous forward current	20	mA
T_{stg}	Storage temperature range	- 65 to +150	°C
T_j	Maximum junction temperature	150	°C
T_L	Maximum temperature for soldering	260	°C

STVD901J

STATIC ELECTRICAL CHARACTERISTICS (T_j = 25°C otherwise specified)

Symbol	Parameter	Tests Conditions	Min.	Typ.	Max.	Unit
I _R	Continuous reverse current	V _R = 6V			10	nA

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
R _{th(j-a)}	Junction to ambient	500	°C/W

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
C _t	Diode capacitance	V _R = 0.25 V	f = 1 MHz	3.6	4	4.4	pF
r _f	Diode series resistance	V _R = 1V	f = 100 MHz		0.5		Ohm
L _s	Series inductance				1.5		nH
Cd (0.25 V) / Cd (2.7 V)	Capacitance ratio	f = 1 MHz		2			

Fig. 1: Reverse leakage current versus reverse voltage applied (typical values).

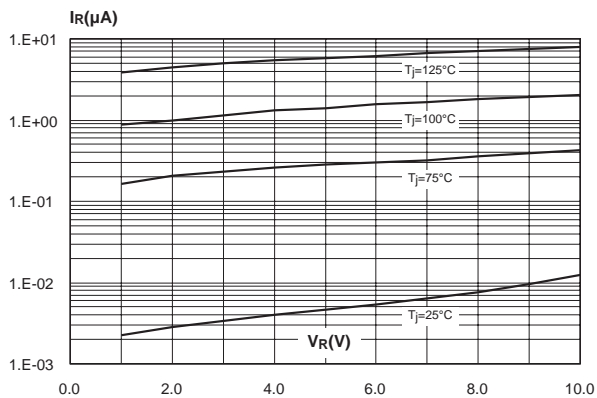


Fig. 2: Relative variation of reverse leakage current versus junction temperature (typical values).

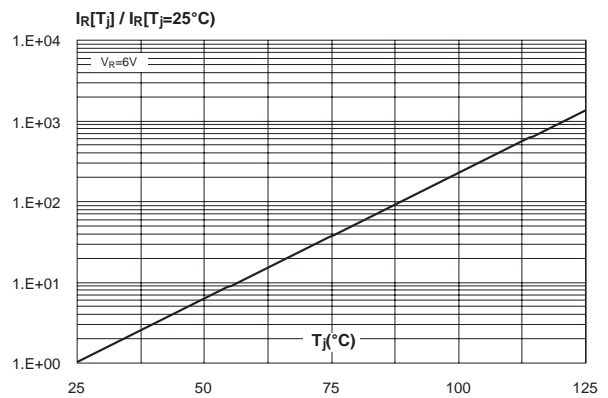


Fig. 3: Junction capacitance versus reverse voltage applied (typical values).

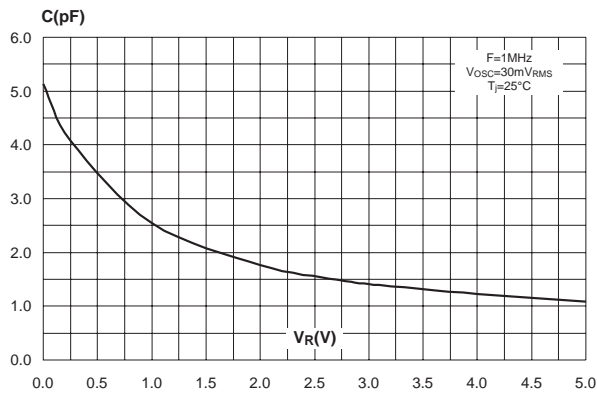


Fig. 5: Serie resistance versus reverse voltage applied (typical values).

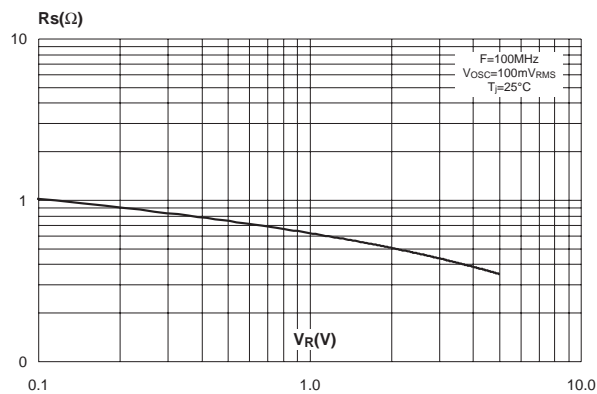


Fig. 7: PSpice parameters.

Diode parameters		
Parameters	Value	Unit
Is	1.892e-8	A
N	1.256	
Rs	0.62	Ω
Isr	8.090e-10	A
Cjo	5.178e-12	F
M	0.638	
Vj	0.487	V

All others available parameters are set to default.

Fig. 4: Relative variation of junction capacitance versus junction temperature (typical values).

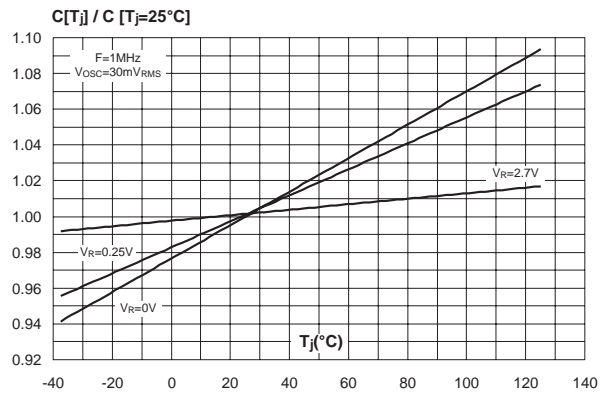
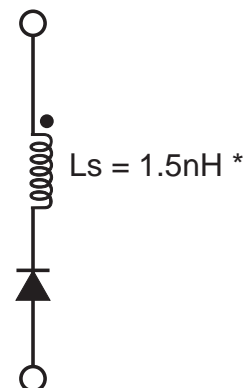
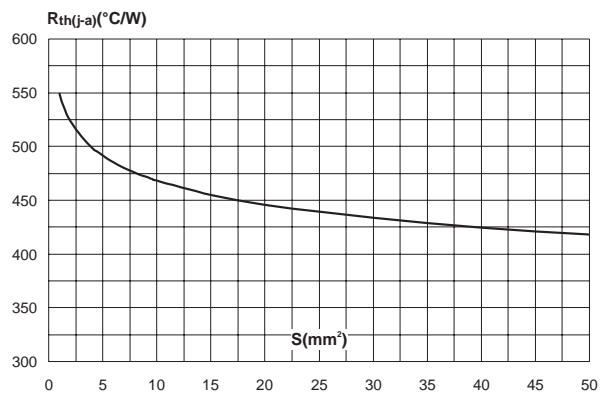


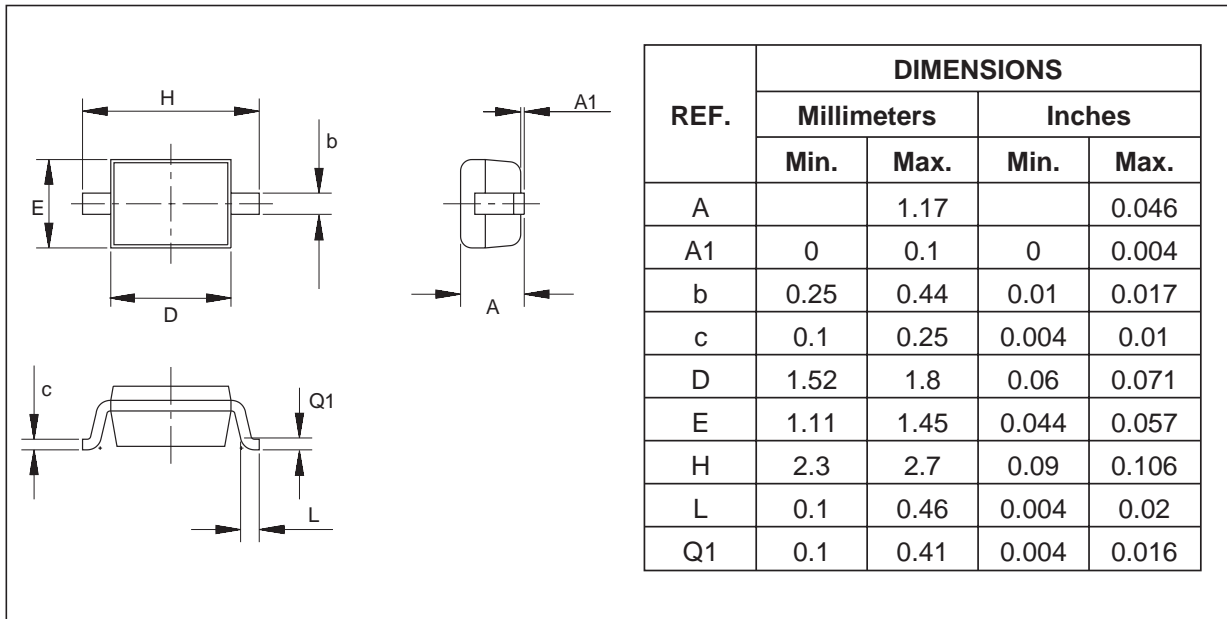
Fig. 6: Thermal resistance junction to ambient versus copper surface under each lead (printed circuit board, epoxy FR4, Cu=35μm).



* Ls depends on package; this value is for SOD-323.

STVD901J

PACKAGE MECHANICAL DATA SOD-323



MARKING

Type	Marking	Package	Weight	Base qty	Delivery mode
STVD901J	47	SOD-323	0.005g	3000	Tape & reel

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics

© 2003 STMicroelectronics - Printed in Italy - All rights reserved.

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - Finland - France - Germany
 Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore
 Spain - Sweden - Switzerland - United Kingdom - United States.

<http://www.st.com>