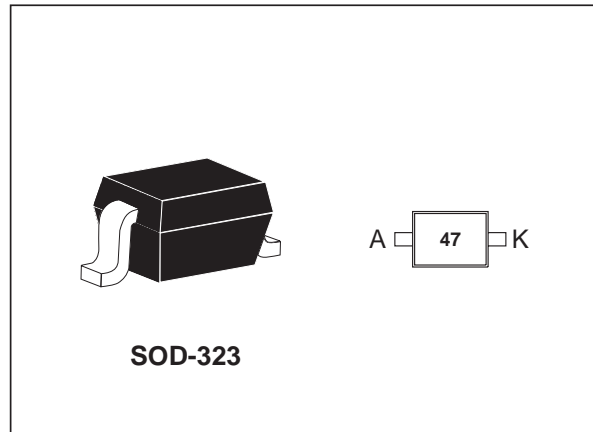


FEATURES AND BENEFITS

- 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
C _d (0.25 V) / C _d (2.7 V)	Capacitance ratio	f = 1 MHz	2			

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

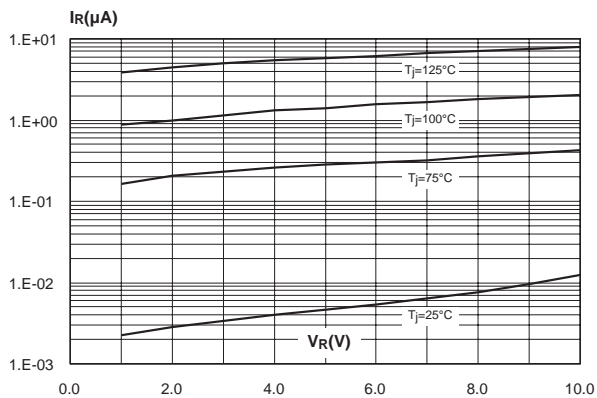


Fig. 2: Relative variation of reverse leakage current versus junction temperature (typical values).

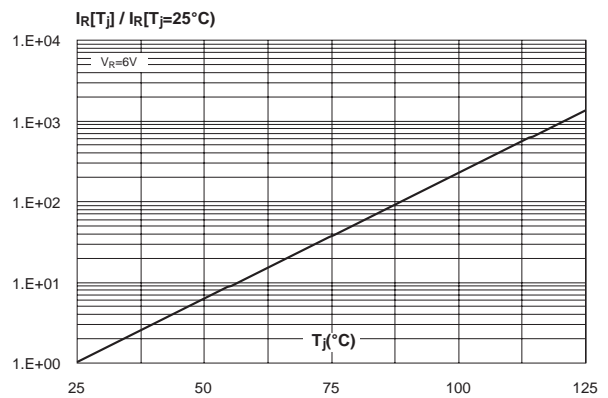


Fig. 3: Junction capacitance versus reverse voltage applied (typical values).

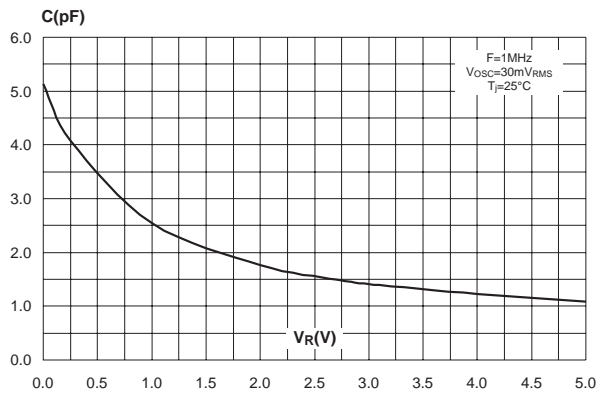


Fig. 5: Serie resistance versus reverse voltage applied (typical values).

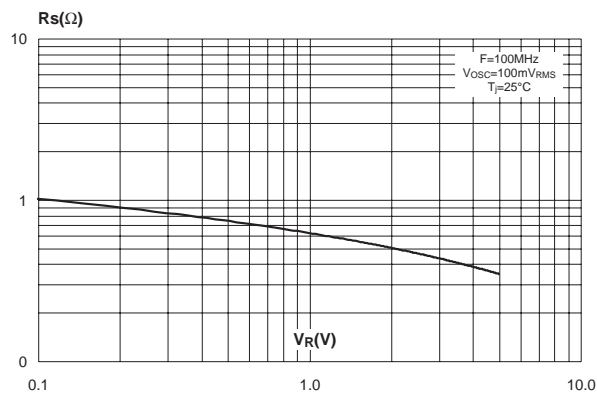


Fig. 7: PSpice parameters.

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).

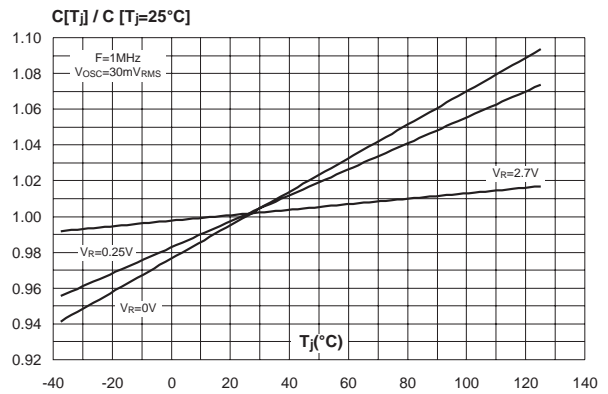
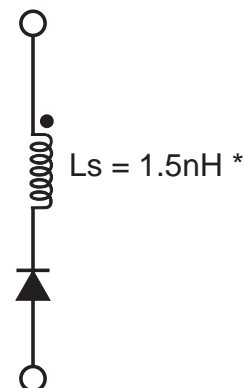
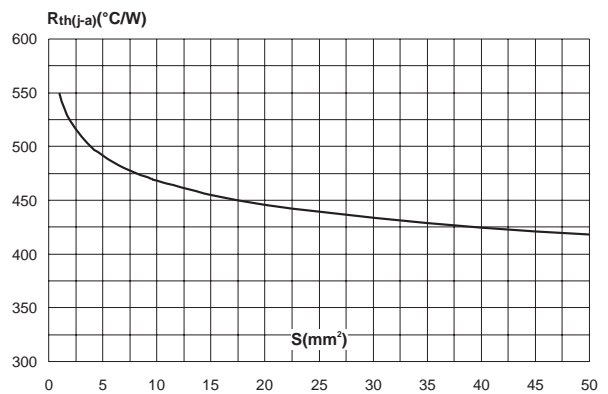


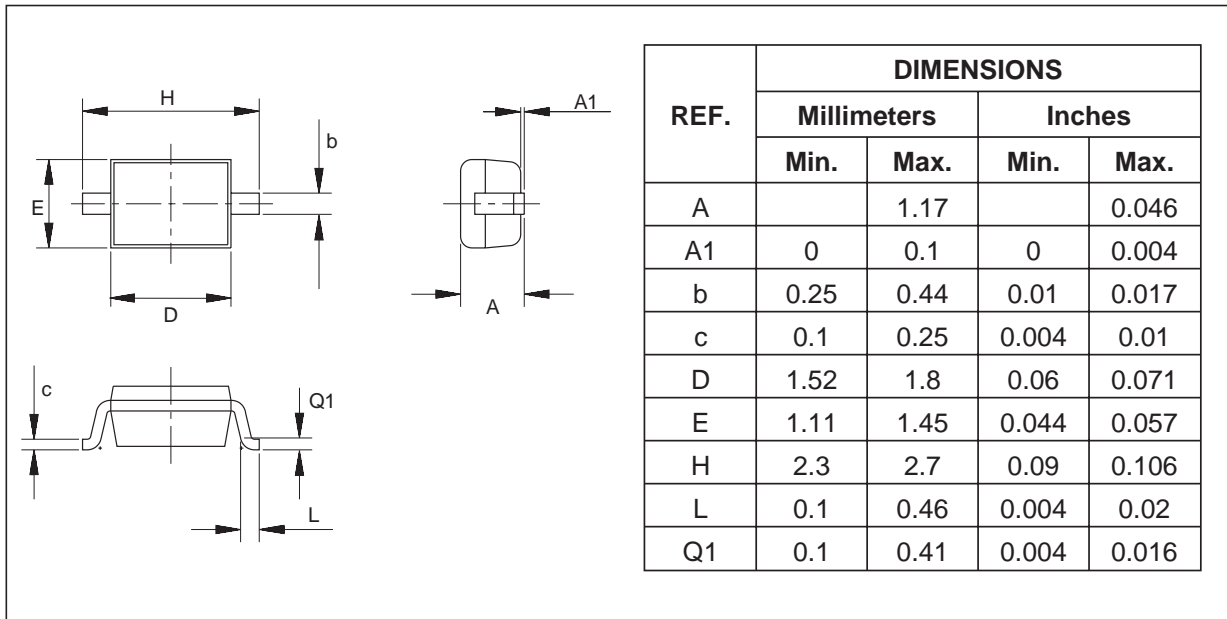
Fig. 6: Thermal resistance junction to ambient versus copper surface under each lead (printed circuit board, epoxy FR4, Cu=35μm).



* 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

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