



### DESCRIPTION

The KV1900 series of Super Hyperabrupt Varactor diodes combines low voltage with high ratio tuning. They feature grown junction mesa technology for the highest Q commercially available. Passivation is our tough MIL-Spec ceramic glass for lowest leakage even at temperature extremes or dense SiO<sub>2</sub> for lowest 1/F noise. They are available in a wide range of package styles including chip (style 00) and most other conventional ceramic microwave packages.

When ordering, specify the desired case style by adding its number as a suffix to the basic model number. For more details on KV19x1A Super Hyperabrupt Varactors in popular high performance surface mount packages, see the KV19x2A & KV19x3A series products.

### APPLICATIONS

The KV19x1A series is an ideal choice for low voltage battery supplied VCOs covering frequency ranges from UHF through 12 GHz. They are used widely in analog phase shifters and phase modulators in microwave communications. They are also excellent choices for higher overtone, high pull VCXO and TCXO applications.

### KEY FEATURES

- Available as packaged devices or as chips for hybrid applications
- Typical 4:1 Tuning Range
- Ultrahigh Q
- Values for frequencies from UHF through X band.

### APPLICATIONS/BENEFITS

- Wide bandwidth VCO.s
- Voltage Tunable Filters
- Phase Shifters
- Modulators
- VCXOs
- TCXOs

### ABSOLUTE MAXIMUM RATINGS AT 25° C (UNLESS OTHERWISE SPECIFIED)

Rating	Symbol	Value	Unit
Maximum Working Voltage	V <sub>R</sub>	12	V
Leakage Current @ V <sub>R</sub> = 10V	I <sub>R</sub>	50	nA
Storage Temperature	T <sub>STG</sub>	-65 to +150	°C
Operating Temperature	T <sub>OP</sub>	-55 to +125	°C

**IMPORTANT:** For the most current data, consult our website: [www.MICROSEMI.com](http://www.MICROSEMI.com)  
Specifications are subject to change. Consult factory for the latest information.



These devices are ESD sensitive and must be handled using ESD precautions.

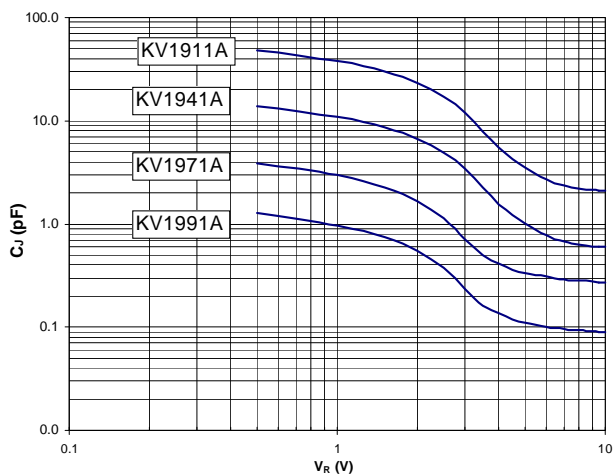
<sup>1</sup> Unless otherwise specified, these products are supplied with Gold terminations suitable for RoHS compliant assembly.

**MICROWAVE HYPERABRUPT VARACTORS**
**ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)**

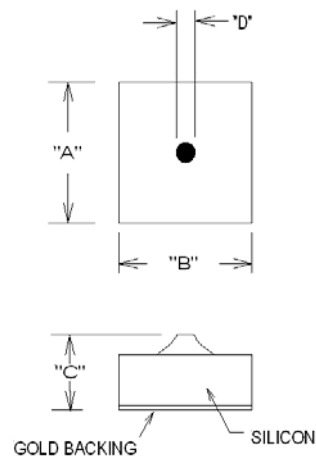
MODEL NUMBER	$C_J$ (pF) <sup>2</sup> $f = 1$ MHz				TUNING RATIO <sup>2</sup>	QUALITY FACTOR <sup>1</sup>
	$V_R = 1V$ Min	$V_R = 2.5V$ Min - Max	$V_R = 4V$ Max	$V_R = 8V$ Max	$C_{J(-1V)} / C_{J(-8V)}$ Typ	Typ.
KV1911A – 00	36	18 - 27	11.8	6	6.0	400
KV1951A – 00	26	13 - 20	8.8	4.5	5.8	500
KV1921A – 00	17	8.3 - 12.8	5.8	3	5.7	600
KV1931A – 00	13	6.3 - 9.8	4.3	2.5	5.6	750
KV1941A – 00	9	4.3 - 6.3	2.8	1.5	5.4	900
KV1961A – 00	3.8	1.8 - 2.8	1.3	0.8	5.1	1200
KV1971A – 00	1.65	0.9 - 1.35	0.6	0.35	4.7	1400
KV1981A – 00	1.2	0.6 - 0.9	0.45	0.3	4.3	1600
KV1991A – 00	0.6	0.3 - 0.6	0.25	0.15	3.9	1800

**Notes**

- Q is determined at  $V_R = 4V$ ,  $f = 50$  MHz by  $1 / 2\pi f R_s C_j$
- Specs apply to -00 (chip) version. Some limitations apply to packaged versions. Consult factory for more details.

**CJ VS VOLTAGE**


Microsemi offers a wide selection of package options depending on your circuit application. Please consult the factory for assistance.

**PACKAGE STYLE 00**


Dimension	Nominal
A	0.015"
B	0.015"
C	0.005"
D	Depends on Part# Consult Factory for Details