

KV1913A – GC1310

ENHANCED PERFORMANCE SURFACE MOUNT EPSM™Hyperabrupt Varactor Diodes

KEY FEATURES

Lower Parasitics

SOD323/SOD123

Place Assembly
RoHS Compliant¹

Amalgam

Mil Grade Ceramic/Epoxy

Values

GHz

Wide Range of Capacitance

For Frequencies from VHF to 6

Footprints Available for SOT23/

Superior Consistency/Repeatability

Dozens of Configurations Available

Tape & Reel Available for Pick and

RoHS Compliant (e4) ⋖



DESCRIPTION

Our EPSM packaged devices are designed for the most demanding commercial and Military requirements where the inconsistent performance inherent in plastic surface mount packages cannot be tolerated. These package styles extend the surface mount construction format to 6 GHz for high performance wireless applications. Select varactors from three families of C/V curves for designs through 6 GHz. They are available in multiple chip configuration as well as outlines which directly replace SOT23 and SOD323 devices. Other devices and values are always available. Contact our applications engineering department for more details.

APPLICATIONS

Specify EPSM package style 450A or 454. For 3 terminal style 454, refer to configuration page. Example: GC1503-454-4 is a common cathode pair of abrupt junction varactors with 1.5 pF capacitance @4V (per device); for the 2 terminal style 450A, refer to the outline dimension table. Example: GC1503-450A is a single abrupt junction varactor with 1.5 pF capacitance at 4V in an 0604 footprint.

ABSOLUTE MAXIMUM RATINGS AT 25° C (UNLESS OTHERWISE SPECIFIED)						
Rating	Symbol	Value	Unit			
Maximum Leakage Current @80% of Minimum Rated V_B	I _R	50	nA			
Storage Temperature	T _{STG}	-55 to +125	°C			
Operating Temperature	T _{OP}	-55 to +125	°C			

IMPORTANT: For the most current data, consult our website: <u>www.MICROSEMI.com</u> Specifications are subject to change. Consult factory for the latest information.

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

¹ The EPSM products are supplied with a RoHS complaint Gold finish.

APPLICATIONS/BENEFITS

- High Performance Wireless Surface Mount Options for GSM, TAGS, WANS, PCS
- Wideband VCO applications
- Voltage Tuned Filters
- VCXOs

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ENHANCED PERFORMANCE SURFACE MOUNT EPSM[™]Hyperabrupt Varactor Diodes

RoHS Compliant



KV1900 SUPER HYPERABRUPT VARACTORS FOR 1-8 VOLT HIGH SENSITIVITY VCO'S

ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)						
Model Number	V _B (V) IR=10µA (Min)	C⊤(pF) @1V (Min)	C⊤(pF) @2.5V	C _T (pF) @4V (Max)	C⊤(pF) @8V (Max)	Q @4V, 50 MHz (Min)
KV1913A	12	36.0	18 – 27	12.0	6.20	400
KV1953A	12	26.0	13 – 20	9.0	4.70	500
KV1923A	12	17.0	8.5 – 13	6.0	3.20	600
KV1933A	12	13.0	6.5 – 10	4.5	2.70	750
KV1943A	12	9.0	4.5 – 6.5	3.0	1.70	900
KV1963A	12	4.0	2.0 - 3.0	1.5	1.00	1200
KV1973A	12	1.8	1.1 – 1.5	0.8	0.55	1400
KV1983A	12	1.2	0.8 – 1.1	0.6	0.45	1600
KV1993A	12	0.6	0.5 – 0.8	0.4	0.35	1800

KV2100 MICROWAVE HYPERABRUPT VARACTORS FOR 2-15 VOLT WIDE BANDWIDTH VCO'S

ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)						
Model Number	V _B (V) IR=10μA (Min)	С _т (рF) @0V (Тур)	C⊤(pF) @4V	C⊤(pF) @20V	Q @4V,50 MHz (Min)	
KV2163	22	26.0	8.75 – 10.80	1.85 – 2.50	400	
KV2153	22	14.0	4.45 – 5.50	0.85 – 1.30	600	
KV2143	22	7.0	2.65 – 3.30	0.65 – 0.90	700	
KV2133	22	5.0	1.75 – 2.20	0.50 – 0.70	850	
KV2123	22	3.0	1.30 – 1.65	0.40 – 0.55	1000	
KV2113	22	2.0	0.85 – 1.10	0.30 – 0.45	1200	

GC1300 MICROWAVE ABRUPT VARACTORS FOR 0-30 VOLT MODERATE BANDWIDTH LOW NOISE VCO'S

ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)							
Model Number	V _B (V) IR=10µA (Min)	C⊤(pF) @4V (+/-10%)	Ratio C _{T 0} / C _{T 4} (Min)	Ratio C _{T 4} / C _{T30} (Min)	Q @4V,50 MHz (Min)		
GC1300	30	0.8	1.5	1.45	3900		
GC1301	30	1.0	1.6	1.55	3800		
GC1302	30	1.2	1.7	1.60	3700		
GC1303	30	1.5	1.8	1.65	3600		
GC1304	30	1.8	1.9	1.70	3500		
GC1305	30	2.2	2.0	1.75	3400		
GC1306	30	2.7	2.0	1.80	3300		
GC1307	30	3.3	2.1	1.85	3100		
GC1308	30	3.9	2.1	1.90	2700		
GC1309	30	4.7	2.2	1.95	2600		
GC1310	30	5.6	2.2	2.00	2500		

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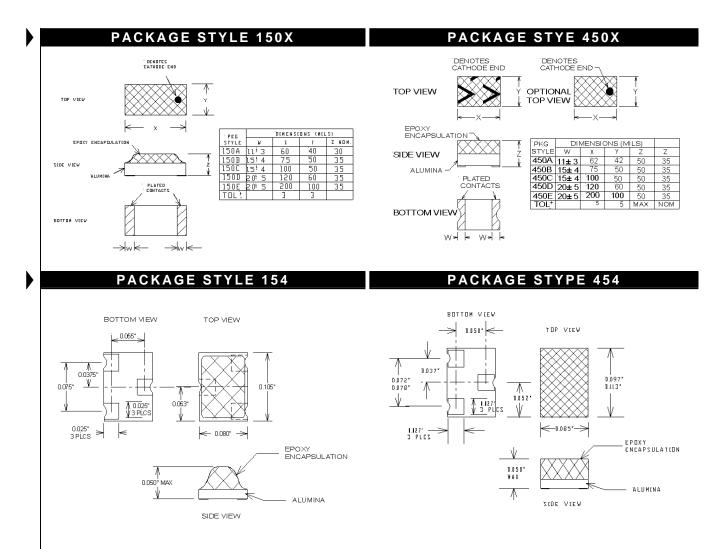
RoHS Compliant (e4



MECHANICAL OPTIONS

EPSM products are available in a broad range of mechanical configurations. The standard package style is the 450 series. This series has several sizes available to accommodate the internal chip configurations. The 450A is the most common configuration for single diode applications. The 454 series package style is a three terminal configuration designed to accommodate 2 chips for 'T" and common anode/cathode designs. With uniform 'flat-top' construction, the 450 series of EPSM products are ideally suited for tape and reel / automated assembly.

The 150 series of EPSM products have a 'glob-top' construction and are traditionally used in smaller volume applications.



Packages are designed with wrap-around metalized castellations for superior assembly results.