



HYPERABRUPT - ABRUPT UHF-MICROWAVE TUNING DIODES

SERIES
MV205
MV206
LP1014-1038
EP1014-1038

... designed for electronic tuning and control applications
in the UHF and lower microwave frequency ranges.

- LOW INDUCTANCE
- PLANAR CONSTRUCTION

HYPERABRUPT

GENERAL SPECIFICATIONS (25°C unless noted)

Rating	Symbol	Value
Reverse Voltage	V_R	30 Vdc Min @ 10 μ A
Reverse Voltage Leakage Current	I_R	.05 μ Adc Max @ 28Vdc .5 μ Adc Max @ 28 Vdc & $T_A = 60^\circ\text{C}$
Junction Temperature	T_J	+175°C Max.
Storage Temperature	T_{stg}	-65°C to 200°C
Device Dissipation	P_D	5.0 Max

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ$)

TYPE NO.	Diode Cap. (CT) @ 25V/1 MHz (pF)		Tuning Ratio (TR) C3/C25 @ 1 MHz		Fig. of Merit (Q) @ 9 pF & 100 MHz
	Min.	Max.	Min.	Max.	Min.
MV205	2.0	2.3	4.5	6.0	225
MV206	1.8	2.8	4.0	6.0	150

ABRUPT

GENERAL SPECIFICATIONS (25°C unless noted)

	25 VOLT TYPES	30 VOLT TYPES
Reverse Breakdown Voltage	$V_R = 25$ Vdc @ $I_R = 10$ μ A	$V_R = 30$ Vdc @ $I_R = 20$ μ A
Reverse Leakage Current	$I_R = 0.02$ μ A @ $V_R = 20$ Vdc	$I_R = 0.02$ μ A @ $V_R = 25$ Vdc
	$I_R = 10$ μ A @ $V_R = 20$ Vdc & $T_A = 125^\circ\text{C}$	$I_R = 10$ μ A @ $V_R = 25$ Vdc & $T_A = 125^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ$)

Diode Cap. (CT) ¹ @ 4V & 1 MHz			TYPE NO.	Tuning Ratio (TR) C0/C25 @ 1 MHz	Fig. of Merit Q @ 4V & 50 MHz	TYPE NO.	Tuning Ratio (TR) C2/C30 @ 1 MHz	Fig. of Merit Q @ 4V & 50 MHz
MIN	NOM	MAX						
1.7	2.2	2.7	LP1014	4.0:1	1000	EP1014	1.9:1	1500
2.7	3.0	3.3	LP1016	4.1:1	900	EP1016	2.2:1	1400
3.2	3.6	4.1	LP1017	4.2:1	900	EP1017	2.3:1	1200
4.0	4.5	5.1	LP1018	4.3:1	900	EP1018	2.4:1	1200
5.0	5.6	6.2	LP1019	4.4:1	800	EP1019	2.5:1	1000
6.1	6.8	7.5	LP1020	4.5:1	800	EP1020	2.5:1	1000
7.4	8.2	9.0	LP1022	4.5:1	800	EP1022	2.6:1	1000
9.0	10.0	11.0	LP1024	4.5:1	700	EP1024	2.7:1	1000
10.9	12.0	13.2	LP1026	4.5:1	700	EP1026	2.8:1	900
13.3	15.0	16.5	LP1028	4.5:1	600	EP1028	2.8:1	900
16.4	18.0	19.8	LP1030	4.6:1	600	EP1030	2.9:1	800
18.0	20.0	22.0	LP1032	4.6:1	500	EP1032	2.9:1	800
19.8	22.0	24.2	LP1034	4.7:1	500	EP1034	2.9:1	800
24.3	27.0	29.7	LP1036	4.7:1	500	EP1036	2.9:1	800
29.7	33.0	36.3	LP1038	4.7:1	500	EP1038	3.0:1	700

1. Closer Capacitance Tolerance Available Upon Request

TO ORDER - REFER TO PACKAGE DESIGNATIONS ON NEXT PAGE; SELECT CASE STYLE AND ADD TO TYPE NO.



MICROWAVE VARACTOR DIODES

ABRUPT - HYPERABRUPT

(GC Series) (GIGA-CAP HA Series)

SERIES
 GC1500-GC1514
 GC1600-GC1609
 GC1702-GC1717
 HA1702-HA1717
 MV1858-MV1870

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Reverse Breakdown Voltage (min)	V _R	30 Vdc @ I _R = 10 uAdc						45 Vdc @ I _R = 10 uAdc			60 Vdc @ I _R = 10 uAdc					
Reverse Voltage Leakage Current (max)	I _R	0.02 uAdc @ V _R = 25 Vdc 2.0 uAdc @ V _R = 75 Vdc (T _A = 125°C)						0.02 uAdc @ V _R = 40 Vdc 2.0 uAdc @ V _R = 40 Vdc (T _A = 125°C)			0.02 uAdc @ V _R = 55 Vdc (T _A = 125°C) 2.0 uAdc @ V _R = 55 Vdc (T _A = 150°C)					
Capacitance Temperature Coefficient (typ)	T _{CC}	300 ppm/°C @ V _R = 4 Vdc, f = 1 MHz						200 ppm/°C @ V _R = 4 Vdc, f = 1 MHz								
Diode Cap. (C _T) ± 10% @ 4V/1 MHz	Type No.	C0/C30 RATIO	Q4 @ 50 MHz	Type No.	C0/C30 RATIO	Q4 @ 50 MHz	Type No.	C0/C45 RATIO	Q4 @ 50 MHz	Type No.	C0/C60 RATIO	Q4 @ 50 MHz	Type No.	C4/C60 RATIO	Q4 @ 100MHz	
pf		Min	min		min	min		min	min		min	min		Min Typ	min	
0.8	GC1500	3.3:1	3600	Slight Hyperabrupt			GC1600	4.2:1	2000							
1.0	GC1501	3.4:1	3600				GC1601	4.4:1	2000							
1.2	GC1502	3.4:1	3600		HA1702	5.0:1	1200	GC1602	4.5:1	2000	GC1702	5.0:1	1200	MV1858	2.1/2.3	350
1.5	GC1503	3.5:1	3400		HA1703	5.3:1	1200	GC1603	4.8:1	2000	GC1703	5.3:1	1200			
1.8	GC1504	3.5:1	3300		HA1704	5.5:1	1200	GC1604	4.9:1	2000	GC1704	5.5:1	1200			
2.2	GC1505	3.7:1	3300	HA1705	5.8:1	1200	GC1605	5.0:1	2000	GC1705	5.8:1	1200	MV1860	2.5/2.7	350	
2.7	GC1506	3.7:1	3100	HA1706	5.9:1	1100	GC1606	5.2:1	1800	GC1706	5.9:1	1100				
3.3	GC1507	3.8:1	3000	HA1707	6.0:1	1100	GC1607	5.3:1	1800	GC1707	6.0:1	1100	MV1862	2.6/2.8	300	
3.9	GC1508	3.9:1	2600	HA1708	6.0:1	1050	GC1608	5.4:1	1800	GC1708	6.0:1	1050				
4.7	GC1509	3.9:1	2500	HA1709	6.5:1	1050	GC1609	5.4:1	1800	GC1709	6.5:1	1050	MV1863	2.6/2.8	300	
5.6	GC1510	4.0:1	2500	HA1710	6.5:1	1050				GC1710	6.5:1	1050				
6.8	GC1511	4.0:1	2200	HA1711	6.5:1	1000				GC1711	6.5:1	1000	MV1864	2.7/2.9	300	
8.2	GC1512	4.0:1	2000	HA1712	7.0:1	1000				GC1712	7.0:1	1000	MV1865	2.7/2.9	300	
10.0	GC1513	4.2:1	2000	HA1713	7.0:1	950				GC1713	7.0:1	950	MV1866	2.8/3.0	250	
12.0	GC1514	4.2:1	1600	HA1714	7.0:1	900				GC1714	7.0:1	900	MV1868	2.8/3.0	200	
15.0				HA1715	7.0:1	850				GC1715	7.0:1	850	MV1870	2.8/3.0	200	
18.0				HA1716	7.0:1	850				GC1716	7.0:1	850				
22.0				HA1717	7.0:1	850				GC1717	7.0:1	850				

† To order devices with closer tolerances, specify ± 5% or ± 2% after type no. and suffix.

(1) C_T = ± 30%
 (2) C_T = ± 20%

TO ORDER - SELECT CASE STYLE AS DESIGNATED BY LETTER BELOW AND ADD TO TYPE NO.

PACKAGE DESIGNATIONS*

CHARACTERISTICS	CASE A	CASE B	CASE D	CASE E	CASE H
Series Inductance* L _S = 0.5 nh (typ)					
Case Capacitance** C _C = 0:15 pf (typ)					
* @ f = self resonant frequency ** @ f = 1 MHz (except Case A, where C _C = 0.2 pf (typ))					

<p>NOTE: Circuit Capacitance of EE types is 1/2 that for the individual type.</p> <p>CASE EE Consists of 2 CASE E varactors, back-to-back with anodes common, with 3 leads welded as shown to provide a flat, low profile for mounting on a PC board or other substrate. Each lead is gold plated kovar, .003" thick X .080" wide X 1/2" minimum length.</p>	<p>CASE T Consists of a single CASE E with the ribbon leads .003" X .080" X 1/2" (min) welded as shown.</p>
	<p>CASE F Consist of a single CASE E with the ribbon leads welded and formed as shown for low profile mounting on a PC board or other substrate.</p>

Other case styles and other back-to-back configurations including common cathode are available; please consult factory.



34-32 57th STREET, WOODSIDE, NY 11377

Tel. 718 672-6500

Telex: 426407

Fax: 718 397-0972