MSI electronics inc

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)

Parameter	Symbol	GC15xx / HA17xx	GC16xx	GC17xx / MV18xx
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 = 25 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 2.0 uAdc @ V_R = 55 Vdc (T_A = 125°C) (GC17xx); 20 uAdc @ V_R = 55 Vdc (T_A = 150° C) (MV18xx)
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	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	Q 4 @ 50 MHz	Type No.	C0/C45 RATIO	Q 4 @ 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				MV1858[1]	2.1/2.3	350
1.2	GC1502	3.4:1	3600	HA1702	5.0:1	1200	GC1602	4.5:1	2000	GC1702	5.0:1	1200			
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]	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*

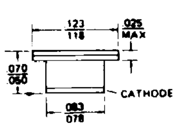
CHARACTERISTICS

Series Inductance* L_S = 0.5 nh (typ)

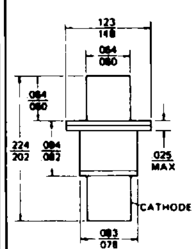
Case Capacitance** C_C = 0:15 pf (typ)

*@ f = self resonant frequency
** @ f = 1 MHz (except Case A, where) (C_C = 0.2 pf (typ))

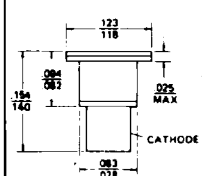
CASE A



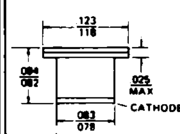
CASE B



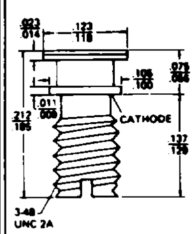
CASE D

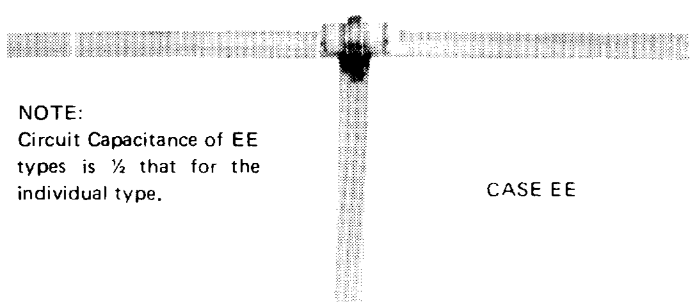


CASE E



CASE H





NOTE:
Circuit Capacitance of EE types is ½ that for the individual type.

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 ½" minimum length.

CASE T

Consists of a single CASE E with the ribbon leads .003" X .080" X ½" (min) welded as shown.

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.

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

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