

SUNSTAR商斯达实业集团是集研发、生产、工程、销售、代理经销、技术咨询、信息服务等为一体的高科技企业，是专业高科技电子产品生产厂家，是具有 10 多年历史的专业电子元器件供应商，是中国最早和最大的仓储式连锁规模经营大型综合电子零部件代理分销商之一，是一家专业代理和分销世界各大品牌 IC 芯片和电子元器件的连锁经营综合性国际公司。在香港、北京、深圳、上海、西安、成都等全国主要电子市场设有直属分公司和产品展示展销窗口门市部专卖店及代理分销商，已在全国范围内建成强大统一的供货和代理分销网络。我们专业代理经销、开发生产电子元器件、集成电路、传感器、微波光电元器件、工控机/DOC/DOM 电子盘、专用电路、单片机开发、MCU/DSP/ARM/FPGA 软件硬件、二极管、三极管、模块等，是您可靠的一站式现货配套供应商、方案提供商、部件功能模块开发配套商。专业以现代信息产业（计算机、通讯及传感器）三大支柱之一的传感器为主营业务，专业经营各类传感器的代理、销售生产、网络信息、科技图书资料及配套产品设计、工程开发。我们的专业网站——中国传感器科技信息网（全球传感器数据库）www.SENSOR-IC.COM 服务于全球高科技生产商及贸易商，为企业科技产品开发提供技术交流平台。欢迎各厂商互通有无、交换信息、交换链接、发布寻求代理信息。欢迎国外高科技传感器、变送器、执行器、自动控制产品厂商介绍产品到中国，共同开拓市场。本网站是关于各种传感器-变送器-仪器仪表及工业自动化大型专业网站，深入到工业控制、系统工程计 测量、自动化、安防报警、消费电子等众多领域，把最新的传感器-变送器-仪器仪表买卖信息，最新技术供求，最新采购商，行业动态，发展方向，最新的技术应用和市场资讯及时的传递给广大科技开发、科学研究、产品设计人员。本网站已成功为石油、化工、电力、医药、生物、航空、航天、国防、能源、冶金、电子、工业、农业、交通、汽车、矿山、煤炭、纺织、信息、通信、IT、安防、环保、印刷、科研、气象、仪器仪表等领域从事科学研究、产品设计、开发、生产制造的科技人员、管理人员、和采购人员提供满意服务。我公司专业生产、代理、经销、销售各种传感器、变送器、敏感元器件、开关、执行器、仪器仪表、自动化控制系统：专门从事设计、生产、销售各种传感器、变送器、各种测控仪表、热工仪表、现场控制器、计算机控制系统、数据采集系统、各类环境监控系统、专用控制系统应用软件以及嵌入式系统开发及应用等工作。如热敏电阻、压敏电阻、温度传感器、温度变送器、湿度传感器、湿度变送器、气体传感器、气体变送器、压力传感器、压力变送、称重传感器、物（液）位传感器、物（液）位变送器、流量传感器、流量变送器、电流（压）传感器、溶氧传感器、霍尔传感器、图像传感器、超声波传感器、位移传感器、速度传感器、加速度传感器、扭距传感器、红外传感器、紫外传感器、火焰传感器、激光传感器、振动传感器、轴角传感器、光电传感器、接近传感器、干簧管传感器、继电器传感器、微型电泵、磁敏（阻）传感器、压力开关、接近开关、光电开关、色标传感器、光纤传感器、齿轮测速传感器、时间继电器、计数器、计米器、温控仪、固态继电器、调压模块、电磁铁、电压表、电流表等特殊传感器。同时承接传感器应用电路、产品设计和自动化工程项目。

欢迎索取免费详细资料、设计指南和光盘；产品凡多，未能尽录，欢迎来电查询。

更多产品请看本公司产品专用销售网站：

商斯达中国传感器科技信息网：<http://www.sensor-ic.com/>

商斯达工控安防网：<http://www.pc-ps.net/>

商斯达电子元器件网：<http://www.sunstare.com/>

商斯达微波光电产品网：[HTTP://www.rfoe.net/](http://www.rfoe.net/)

商斯达消费电子产品网：<http://www.icasic.com/>

商斯达军工产品网：<http://www.junpinic.com/>

商斯达实业科技产品网：<http://www.sunstars.cn/> 传感器销售热线：

地址：深圳市福田区福华路福庆街鸿图大厦 1602 室

电话：0755-83607652 83376489 83376549 83370250 83370251 82500323

传真：0755-83376182 (0) 13902971329 MSN: SUNS888@hotmail.com

邮编：518033 E-mail: szss20@163.com QQ: 195847376

深圳赛格展销部：深圳华强北路赛格电子市场 2583 号 电话：0755-83665529

技术支持：0755-83394033 13501568376



SELECTION GUIDE

Microsemi Corporation



SENSORS

SEMICONDUCTOR DIODES



Microsemi is a leading custom designer and manufacturer of advanced devices, components and subsystems for:

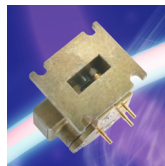
avionics, radar, missile, satellite, telecommunications, wireless, automotive, security, safety, industrial processing, and traffic management applications.

Our Semiconductor Diode Group manufactures a range of GaAs & Si diodes including Varactors, Hyperabrupt Varactors, PIN's, Gunns, Schottky's and IMPATTs. They are available in chip form and beam lead, or in a number of different package styles.

The Sensors Group produces a wide range of Doppler transceivers, Gunn oscillators, isolators and many specially designed sub-systems and multi function assemblies, that enable our customers to reduce cost and improve performance of their own systems.

Our Control components group includes PIN diode based products in multithrow configurations, with and with out integral drivers Limiter based products, handling RF incident power. These components are available in SMA connectorized or drop in module format.

We welcome you as either an existing or a new customer, and we are sure that we will have a very successful business relationship for years to come.



Varactor Diodes — GaAs (MV20000 and MV30000 Series)

Abrupt Junction Tuning Varactors

Capacitance
± 10% @
-4 V (pF)

V_{BR} @ 10 μ A = 30 V Min.
(0–30 V Tuning Range)

Hyperabrupt Junction Tuning Varactors

V_{BR} @ 10 μ A = 22 V Min. (2–20 V Tuning Range)

	Gamma = 0.50	Gamma = 0.75	Gamma = 1.00	Gamma = 1.25
0.3	MV21001 CT0/CT30 = 2.8, Q = 8000			
0.4	MV21002 CT0/CT30 = 3.1, Q = 7500			
0.5	MV21003 CT0/CT30 = 3.4, Q = 7000			MV31011 CT2/CT20 = 5.5, Q = 4000
0.6	MV21004 CT0/CT30 = 3.6, Q = 6500	MV32001 CT2/CT20 = 2.8, Q = 4000	MV30011 CT2/CT20 = 3.9, Q = 4000	
0.7				MV31012 CT2/CT20 = 6.5, Q = 4000
0.8	MV21005 CT0/CT30 = 3.8, Q = 6000			
1.0	MV21006 CT0/CT30 = 4.0, Q = 5700	MV32002 CT2/CT20 = 3.1, Q = 3000	MV30012 CT2/CT20 = 4.6, Q = 3000	MV31013 CT2/CT20 = 7.7, Q = 3000
1.2	MV21007 CT0/CT30 = 4.2, Q = 5000	MV32003 CT2/CT20 = 3.2, Q = 3000	MV30013 CT2/CT20 = 4.9, Q = 3000	MV31014 CT2/CT20 = 8.3, Q = 3000
1.5	MV21008 CT0/CT30 = 4.3, Q = 5000	MV32004 CT2/CT20 = 3.3, Q = 3000	MV30014 CT2/CT20 = 5.2, Q = 3000	MV31015 CT2/CT20 = 9.1, Q = 3000
1.8	MV21009 CT0/CT30 = 4.5, Q = 5000	MV32005 CT2/CT20 = 3.4, Q = 3000	MV30015 CT2/CT20 = 5.4, Q = 3000	MV31016 CT2/CT20 = 9.6, Q = 3000
2.0				MV31017 CT2/CT20 = 9.9, Q = 3000
2.2	MV21010 CT0/CT30 = 4.6, Q = 4000	MV32006 CT2/CT20 = 3.5, Q = 3000	MV30016 CT2/CT20 = 5.6, Q = 3000	MV31018 CT2/CT20 = 10.2, Q = 3000
2.5		MV32007 CT2/CT20 = 3.6, Q = 2500	MV30017 CT2/CT20 = 5.8, Q = 2500	
2.7				MV31019 CT2/CT20 = 10.8, Q = 2000
3.0		MV32008 CT2/CT20 = 3.6, Q = 2500	MV30018 CT2/CT20 = 6.0, Q = 2500	
3.3				MV31020 CT2/CT20 = 11.3, Q = 2000
3.6		MV32009 CT2/CT20 = 3.7, Q = 2000	MV30019 CT2/CT20 = 6.1, Q = 2000	
3.7				MV31021 CT2/CT20 = 11.5, Q = 2000
4.5		MV32010 CT2/CT20 = 3.8, Q = 1500	MV30020 CT2/CT20 = 6.3, Q = 1500	
4.7				MV31022 CT2/CT20 = 12.0, Q = 1500
5.6				MV31023 CT2/CT20 = 12.3, Q = 1500
6.8				MV31024 CT2/CT20 = 12.6, Q = 1500
8.2				MV31025 CT2/CT20 = 12.9, Q = 1500
10.0				MV31026 CT2/CT20 = 13.1, Q = 1500

Various packages available upon request.
Tightened capacitance tolerances available upon request.
Q measured at -4 V, referenced to 50 MHz.

Capacitance
± 10% @
-4 V (pF)

V_{BR} @ 10 μ A = 15 V Min.
(0–15 V Tuning Range)

V_{BR} @ 10 μ A = 15 V Min. (2–12 V Tuning Range)

	Gamma = 0.50	Gamma = 1.00	Gamma = 1.25	Gamma = 1.50
0.3	MV20001 CT0/CT15 = 2.4, Q = 8000			
0.4	MV20002 CT0/CT15 = 2.6, Q = 7500			
0.5	MV20003 CT0/CT15 = 2.8, Q = 7000			MV34001 CT2/CT12 = 4.5, Q = 3000
0.6	MV20004 CT0/CT15 = 2.9, Q = 6500	MV30001 CT2/CT12 = 3.2, Q = 4000	MV31001 CT2/CT12 = 4.2, Q = 4000	
0.8	MV20005 CT0/CT15 = 3.0, Q = 6000			
1.0	MV20006 CT0/CT15 = 3.1, Q = 5700	MV30002 CT2/CT12 = 3.7, Q = 3000	MV31002 CT2/CT12 = 5.1, Q = 4000	MV34002 CT2/CT12 = 5.9, Q = 2500
1.2	MV20007 CT0/CT15 = 3.2, Q = 5000	MV30003 CT2/CT12 = 3.8, Q = 3000	MV31003 CT2/CT12 = 5.4, Q = 3000	
1.5	MV20008 CT0/CT15 = 3.3, Q = 5000	MV30004 CT2/CT12 = 4.0, Q = 3000	MV31004 CT2/CT12 = 5.7, Q = 3000	
1.8	MV20009 CT0/CT15 = 3.4, Q = 5000	MV30005 CT2/CT12 = 4.1, Q = 3000	MV31005 CT2/CT12 = 5.9, Q = 3000	MV34003 CT2/CT12 = 7.1, Q = 2500
2.0				MV34004 CT2/CT12 = 7.3, Q = 2500
2.2	MV20010 CT0/CT15 = 3.4, Q = 4000	MV30006 CT2/CT12 = 4.2, Q = 3000	MV31006 CT2/CT12 = 6.2, Q = 3000	MV34005 CT2/CT12 = 7.4, Q = 1800
2.5		MV30007 CT2/CT12 = 4.3, Q = 2500	MV31007 CT2/CT12 = 6.3, Q = 3000	MV34006 CT2/CT12 = 7.6, Q = 1800
3.0		MV30008 CT2/CT12 = 4.4, Q = 2500	MV31008 CT2/CT12 = 6.5, Q = 3000	MV34007 CT2/CT12 = 7.9, Q = 1800
3.6		MV30009 CT2/CT12 = 4.5, Q = 2000	MV31009 CT2/CT12 = 6.7, Q = 2000	
3.8				MV34008 CT2/CT12 = 8.1, Q = 1800
4.5		MV30010 CT2/CT12 = 4.5, Q = 1500	MV31010 CT2/CT12 = 6.8, Q = 2000	MV34009 CT2/CT12 = 8.3, Q = 1200
10.0				MV34010 CT2/CT12 = 8.9, Q = 1200

Various packages available upon request.
Tightened capacitance tolerances available upon request.
Q measured at -4 V, referenced to 50 MHz.

Specifications @ 25°C.

Specifications subject to change without notice. SUNSTAR射频通信 <http://www.rfoe.net/> TEL:0755-83397033 FAX:0755-83376182 E-MAIL:szss20@163.com

GaAs PIN Diodes

Part Number ¹	Max. C _J @ -10 V Max. (pf)	Min V _{BR} (V)	Max. R _S @ 20 mA (Ω)	Typ. Switching Speed (ns)	Typ. Minority Carrier Lifetime (ns) ²
MP61001	0.03	200	3.0	20.0	50
MP61002	0.04	200	3.0	20.0	50
MP61003	0.05	200	3.0	20.0	50
MP61004	0.06	100	2.0	9.0	15
MP61005	0.07	100	2.0	9.0	15
MP61006	0.08	100	2.0	9.0	15
MP61007	0.10	75	2.0	6.0	10
MP61008	0.12	75	2.0	6.0	10
MP61009	0.15	50	1.0	3.5	5
MP61010	0.18	50	1.0	3.5	5
MP61011	0.23	50	0.8	3.5	5
MP61012	0.35	50	0.8	3.5	5

¹ Suffix of the model number indicates the package style. Suggested package styles are M11, M14, M21, M26, M36, M40, M46 and chip P10. (For example MP61001-26).

² Minority carrier lifetime is inferred from stored charge measurement with a forward current of 10 mA.

Note: All GaAs PIN diodes are passivated with Silicon Nitride with a minimum bonding area diameter of 50 microns.

Silicon Chip Capacitors

Part Number	Capacitance (pF)	Voltage Rating (V)	Nominal Chip Size (mils)	Minimum Contact Pad Size (mils)	Minimum Contact Pad Size (μm)
MC0R8K100	0.8	100	12 x 12	1.5 x 1.5	38.1 x 38.1
MC1R0K100	1.0	100	12 x 12	1.5 x 1.5	38.1 x 38.1
MC1R2K100	1.2	100	12 x 12	1.5 x 1.5	38.1 x 38.1
MC1R8K100	1.8	100	12 x 12	1.5 x 1.5	38.1 x 38.1
MC2R6K100	2.6	100	12 x 12	3 x 3	76.2 x 76.2
MC3R8K100	3.8	100	12 x 12	3 x 3	76.2 x 76.2
MC4R7K100	4.7	100	12 x 12	3 x 3	76.2 x 76.2
MC6R8K100	6.8	100	12 x 12	5 x 5	127 x 127
MC8R2K100	8.2	100	12 x 12	5 x 5	127 x 127
MC10R0K100	10.0	100	25 x 25	7 x 7	177 x 177
MC15R0K100	15.0	100	25 x 25	9 x 9	230 x 230
MC22R0K100	22.0	100	25 x 25	11 x 11	281 x 281
MC33R0K100	33.0	100	25 x 25	14 x 14	356 x 356
MC47R0K100	47.0	100	25 x 25	17 x 17	432 x 432

Miniature Ferrite Isolators

Frequency, W/G, Flange	Bandwidth (%)	Isolation (dB)	Insertion Loss	VSWR (In & Out)	Average Power Forward (W)	Reverse (W)
18.0-26.5GHZ, WR-42, UG595/U	10	20	0.3	1.30	40	1
26.5-40.0GHZ, WR-28, UG599/U	10	20	0.4	1.30	30	1
33.0-50.0GHZ, WR-22, UG599/U-M	8	20	0.5	1.30	20	0.8
40.0-60.0GHZ, WR-19, UG599/U-M	7	18	0.6	1.35	5	0.5
75.0-110.0GHZ, WR-10, UG599/U-M	2	18	0.7	1.30	0.2	0.2

Operating Temperature range -10 to +60 deg C but for WR-10 units OP. Temp. is -10 to +50 deg C.

Ordering information	MMI	28	599	T
	↑	↑	↑	↑
	Model	W/G Size	Flange	Tapped Flange

Specifications @ 25°C.

Specifications subject to change without notice.

Gunn Diodes

Discrete Frequency: Cathode Ground (CW EPI-Down)

Minimum Power (mW)	C (5.4-6.9) GHz	X (8.0-12.4) GHz	Ku (12.4-18.0) GHz	K (18.0-26.5) GHz	Ka (26.5-40.0) GHz	U (40.0-60.0) GHz	(60.5-85.0) GHz	(85.0-95.0) GHz
10							MG1036-16 V _{OP} = 4.5 V @ I _{OP} = 900 mA	MG1024-16 V _{OP} = 4.5 V @ I _{OP} = 1100 mA
20								MG1025-16 V _{OP} = 4.5 V @ I _{OP} = 1000 mA
50	MG1001-11 V _{OP} = 12 V @ I _{OP} = 400 mA	MG1005-11 V _{OP} = 10 V @ I _{OP} = 400 mA	MG1009-11 V _{OP} = 8 V @ I _{OP} = 500 mA	MG1013-16 V _{OP} = 6 V @ I _{OP} = 600 mA	MG1017-16 V _{OP} = 4.5 V @ I _{OP} = 700 mA	MG1021-16 V _{OP} = 4 V @ I _{OP} = 800 mA	MG1037-16 V _{OP} = 5 V @ I _{OP} = 1100 mA	MG1038-16 V _{OP} = 5 V @ I _{OP} = 1200 mA
100	MG1002-11 V _{OP} = 12 V @ I _{OP} = 600 mA	MG1006-11 V _{OP} = 10 V @ I _{OP} = 700 mA	MG1010-11 V _{OP} = 8 V @ I _{OP} = 800 mA	MG1014-16 V _{OP} = 6 V @ I _{OP} = 1000 mA	MG1018-16 V _{OP} = 4.5 V @ I _{OP} = 1100 mA	MG1022-16 V _{OP} = 4 V @ I _{OP} = 1200 mA		
150						MG1023-16 V _{OP} = 4 V @ I _{OP} = 1600 mA (40-50 GHz)		
200				MG1015-16 V _{OP} = 6 V @ I _{OP} = 1400 mA	MG1019-16 V _{OP} = 5 V @ I _{OP} = 1400 mA			
250	MG1003-15 V _{OP} = 12 V @ I _{OP} = 1100 mA	MG1007-15 V _{OP} = 10 V @ I _{OP} = 1200 mA	MG1011-15 V _{OP} = 8 V @ I _{OP} = 1200 mA		MG1020-16 V _{OP} = 5.5 V @ I _{OP} = 1600 mA			
300					MG1039-16 V _{OP} = 5.5 V @ I _{OP} = 1700 mA (26.5-35 GHz)			
350					MG1040-16 V _{OP} = 5.5 V @ I _{OP} = 1800 mA (26.5-35 GHz)			
400				MG1016-17 V _{OP} = 6 V @ I _{OP} = 1700 mA (18.0-23.0 GHz)				
500	MG1004-15 V _{OP} = 12 V @ I _{OP} = 1300 mA	MG1008-15 V _{OP} = 10 V @ I _{OP} = 1600 mA	MG1012-15 V _{OP} = 8 V @ I _{OP} = 1700 mA					

Polarity: anode is the cap and cathode is the heat-sink.

Discrete Frequency: Anode Ground (CW EPI-Up)

Minimum Power (mW)	X (9.5-11.5) GHz	K (23.0-25.0) GHz	Ka (33.5-35.5) GHz	Package Outline
5		MG1054-11 V _{OP} = 5 V @ I _{OP} = 200 mA	MG1059-11 V _{OP} = 5 V @ I _{OP} = 300 mA	M11
10	MG1052-11 V _{OP} = 8 V @ I _{OP} = 140 mA	MG1058-11 V _{OP} = 5 V @ I _{OP} = 300 mA		M11
20	MG1056-11 V _{OP} = 8 V @ I _{OP} = 200 mA			M11

Polarity: cathode is the cap and anode is the heat-sink.

Operation over a narrow band around a specific center frequency.
Other frequencies available upon request. Call factory.
Operating voltage (V_{OP}) typ. Operating current (I_{OP}) max.
Power measured with diode inserted in a critically coupled cavity.
Specifications @ 25°C.
Specifications subject to change without notice.

Discrete Frequency: Anode Ground (Pulsed EPI-Up)

Minimum Power (mW)	X (9.5-11.5) GHz	K (23.0-25.0) GHz	Package Outline
5		MG1044-11 V _{OP} = 8 V @ I _{OP} = 120 mA	M11
10	MG1041-11 V _{OP} = 9 V @ I _{OP} = 110 mA	MG1045-11 V _{OP} = 8 V @ I _{OP} = 150 mA	M11
20	MG1042-11 V _{OP} = 9 V @ I _{OP} = 140 mA	MG1046-11 V _{OP} = 8 V @ I _{OP} = 200 mA	M11
30	MG1043-11 V _{OP} = 10 V @ I _{OP} = 180 mA		M11

Polarity: cathode is the cap and anode is the heat-sink.
Pulse width = 1 μsec. Duty factor = 1% typ.
Alternative pulse width and duty factors can be specified by customer.

Impatts

CW IMPATT Diodes

Part Number	FOP (GHz)	Min. PO (W)	V _{BR} @ 1 mA (V)	Typ. C _T (0 V) (pF)	Typ. V _{OP} (V)	Typ. I _{OP} (A)	Min. Eff. (%)	Max. θ (°C/W)	Pkg. Style
MI5022	9.5 - 10.2	3.5	30	20	50	0.43	20	12.0	M18

Pulsed IMPATT Diodes

Part Number	FOP (GHz)	Min. PO (W)	V _{BR} @ 1 mA (V)	Typ. C _T (0 V) (pF)	Typ. V _{OP} (V)	Typ. I _{OP} (A)	Min. Eff. (%)	Max. θ (°C/W)	Pkg. Style
MI5001	5.1 - 5.4	10 ¹	70	80	95	1.2	13	8.0	M 15
MI5003	9.1 - 9.6	15 ¹	45	75	65	1.8	15	9.5	M 18
MI5004	9.1 - 9.5	12 ²	35	42	58	1.2	18	9.5	M 18

¹ Pulse width 0.5 - 10 μS; duty cycle: 0.5-5%.

² Pulse width 1 - 2 μS; duty cycle: 20-30%.

Notes:

Power output is measured in a critically coupled cavity at the customer-specified frequency—FOP.

Total capacitance is measured at 1 MHz.

Test procedure for measuring thermal resistance is available on request.

Breakdown Voltage is measured at 1 mA.

High Cut-off GaAs Frequency Multiplier Diodes

Part Number	C ₃₀ ± 10% (pF) ^{1, 3, 4}	Typ. C _{T0} /C _{TVBR} ⁵	V _{BR} @ 10 μA (V)	Typical Q @ -4 V ²
MV71001	0.2	2.1	15	8000
MV71002	0.3	2.4	15	8000
MV71003	0.4	2.6	15	7500
MV71004	0.5	2.8	15	7000
MV71005	0.3	2.8	30	8000
MV71006	0.4	3.1	30	7500
MV71007	0.5	3.4	30	7000
MV71008	0.6	3.6	30	6500
MV71009	0.7	3.7	30	6000
MV71010	0.8	3.8	30	6000
MV71011	0.9	3.9	30	5700
MV71012	1.0	4.0	30	5700
MV71013	1.2	4.2	30	5000

¹ Capacitance is measured at 1 MHz using a shielded fixture.

² Measured by DeLoach Technique and referenced to 50 MHz.

³ Tightened tolerances available upon request.

⁴ Package parasitics are not included in above specifications. The contributions of package capacitance add to the overall total capacitance and will vary depending upon package style selected.

The values for package capacitance, C_p, can be made available upon request.

⁵ The capacitance ratio is calculated using C_p = 0.15 pF. Ratios will vary depending upon case style selection.

2 Stack ISIS Diodes— Breakdown Voltage: 55V min

Part Number	C _j @ 0v (pF)	Min. Cut-off Frequency (GHz) ¹	Package Capacitance (pF)
MIV41001-21	0.1 - 0.3	1000	0.15
MIV41002-21	0.3 - 0.5	700	0.15
MIV41003-21	0.5 - 1.0	600	0.15
MIV41001-29	0.1 - 0.3	1000	0.01
MIV41002-29	0.3 - 0.5	700	0.01
MIV41003-29	0.5 - 1.0	600	0.01

¹ Cut-off frequency measured at 6 volts.

Other package styles are available on request.

Different breakdown voltages are available on request.

Specifications @ 25°C.

Specifications subject to change without notice.

3 Stack ISIS Diodes— Breakdown Voltage: 75V min

Part Number	C _j @ 0v (pF)	Min. Cut-off Frequency (GHz) ¹	Package Capacitance (pF)
MIV41011-21	0.1 - 0.3	1000	0.15
MIV41012-21	0.3 - 0.5	700	0.15
MIV41013-21	0.5 - 1.0	600	0.15
MIV41011-29	0.1 - 0.3	1000	0.01
MIV41012-29	0.3 - 0.5	700	0.01
MIV41013-29	0.5 - 1.0	600	0.01

GaAs Schottky Barrier Diodes

Part Number ¹	Typ. C_j (pF) ²	Min./Max. R_s (Ω) ³	LO Test Freq. (GHz)	Typ. Noise Figure (dB) ⁴	Min./Max. IF Impedance (Ω)	Min. V_{BR} @ 10 μ A (V)
MS8001	0.10	3-6	9.375	5.6	250/500	5
MS8002	0.10	3-6	16.000	5.6	250/500	5
MS8003	0.07	3-6	24.000	6.5	250/500	5
MS8004	0.06	3-6	36.000	6.5	250/500	5

Si Schottky Barrier Diodes

Part Number	Typ. C_T (pF) ²	Typ. R_s (Ω) ³	Max I_R @ 1 V (nA)	Max V_F @ 1 mA (mV)	Min. V_B @ 10 μ A (V)
MS8520-48	0.02	8	100	390	3

¹ Suffix of the model number indicates the package style. Suggested package styles are M22, M26, M38, M39, M46 and M48 as well as in chip form P10. (For example MS8002-38)

² Capacitance C_j is measured at zero bias with a 1 MHz signal.

³ Series resistance, R_s , is calculated by subtracting the barrier resistance $R_b = kT/qI$ from the measured total resistance R_T at 10 mA: $R_s = R_T - R_b$;

k = Boltzmann Constant, T = diode temperature in degrees K, q = electronic charge, I = rectified current.

⁴ The quoted noise figure (NF) is a single side band NF measured at LO power of 6 dBm for a single, and 10 dBm for a balanced mixer with a 30 MHz IF amplifier of minimum NF of 1.5 dB.

GaAs Schottky Flip Chip Diodes

Part Number	Max. C_T @ 0 V (pF)	Max. R_s @ 10 mA (Ω)	Min. V_{BR} @ 10 μ A (V)	Min/Max V_F @ 1 mA (mV)	Configuration
MS8150	0.08	7	3	650 - 750	Single
MS8151	0.06	9	3	600 - 800	Single
MS8250	0.08	7	3	650 - 750	Anti-parallel
MS8251	0.06	9	3	600 - 800	Anti-parallel
MS8350	0.08	7	3	650 - 750	Series Pair
MS8351	0.06	9	3	600 - 800	Series Pair

¹ Capacitance value is for individual diode and not for complete device.

GaAs PIN Flip Chip Diodes

Part Number	Max. C_T @ 0 V, 1 MHz (pF)	Min. V_{BR} @ 10 μ A (V)	Max. V_F @ 10 mA (V)	Max. R_s @ 10 mA, 2 GHz (Ω)	Typ. Switching Speed (nsec)
MP6250	0.055	40	1.45	7	2

GaAs Hyperabrupt Varactor Flip Chip Diodes

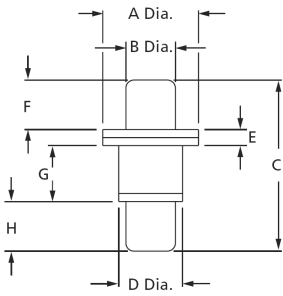
Part Number	Max. C_T @ -4 V, 1 MHz (pF)	Min. V_{BR} @ 10 μ A (V)	Cap. ratio C_T-2V/C_T-12V	Gamma
MV39001	0.40-0.60	18	3.3-4.1	1.0
MV39002	0.25-0.40	18	4.3-5.3	1.25
MV39003	0.40-0.60	18	4.5-5.6	1.25

Specifications @ 25°C.

Specifications subject to change without notice.

Package Outlines

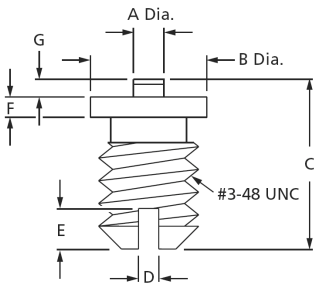
M11



	Dimensions (Inches)	
	Min.	Max.
A	0.119	0.127
B	0.060	0.064
C	0.205	0.2252
D	0.079	0.083
E	0.016	0.024
F	0.060	0.0643
G	0.069	0.073
H	0.060	0.064

LP = 0.40 nH typ.
CP = 0.17 pF typ.

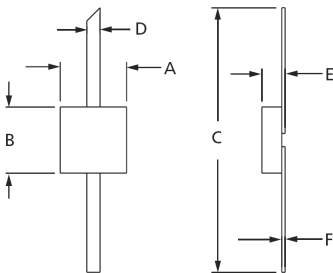
M16



	Dimensions (Inches)	
	Min.	Max.
A	0.027	0.034
B	0.113	0.118
C	0.156	0.164
D	0.015	0.025
E	0.025	0.045
F	0.018	0.022
G	0.016	0.019

LP = 0.10 nH typ.
CP = 0.15 pF typ.

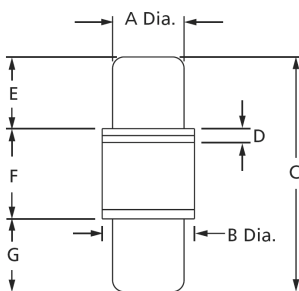
M26



	Dimensions (Inches)	
	Min.	Max.
A	0.092	0.108
B	0.092	0.108
C	0.452	0.570
D	0.017	0.023
E	0.028	0.052
F	0.003	0.007

LP = 0.40 nH typ.
CP = 0.10 pF typ.

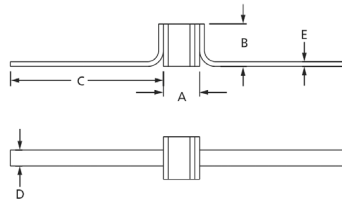
M38



	Dimensions (Inches)	
	Min.	Max.
A	0.059	0.064
B	0.076	0.084
C	0.190	0.210
D	0.007	0.015
E	0.059	0.065
F	0.069	0.087
G	0.059	0.065

LP = 0.50 nH typ.
CP = 0.15 pF typ.

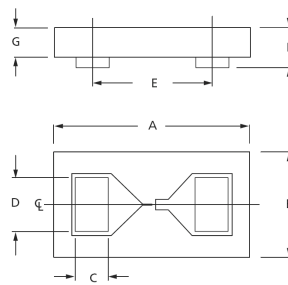
M39



	Dimensions (Inches)	
	Min.	Max.
A	0.040	0.050
B	0.051	0.055
C	0.200	-
D	0.019	0.021
E	-	0.005

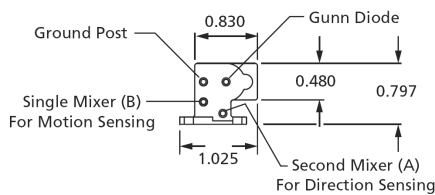
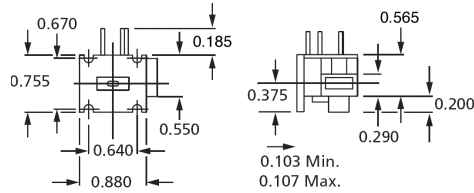
LP = 0.40 nH typ.
CP = 0.14 pF typ.

P2613



	Dimensions (Inches)	
	Min.	Max.
A	0.0255	0.0265
B	0.0125	0.0135
C	0.0046	0.0056
D	0.0075	0.0085
E	0.0170	0.0180
F	0.0050	0.0060
G	0.0045	0.0055

MO9062



Many other packages available.
Specifications @ 25°C.
Specifications subject to change without notice.

Transceivers

Fixed Frequency Gunn Transceivers

Part Number	Description	Frequency (GHz)	Mixer Phasing (Degrees)	Min. Output Power (mW)	Min. Sensitivity (dBc)	Operating Voltage (V) ²	Max. Operating Current (mA)
M086728	X Band Transceiver	10.525	na	5	-95	+7.5 to +8.5	150
M086735	Dual IF Output, X Band Transceiver	10.525	75 to 105	5	-95	+8.5	200
M09061	K Band Transceiver	24.125	na	5	-92	+5.0	100
M09062	Dual IF Output, K Band Transceiver	24.125	50 to 130	5	-92	+5.0	100
M09081 ¹	Pulsed DC, K Band Transceiver	24.125	na	10 to 20	-90	+6.0 to +8.0	100
M09082 ¹	Pulsed DC, Dual IF Output, K Band Transceiver	24.125	50 to 130	10 to 20	-90	+6.0 to +8.0	100
M09300	K Band Transceiver	24.125	na	2 to 5	-90	+4.0 to +6.0	250
M09062-22	Dual IF Output, K Band Transceiver	24.125	75 to 105	5	-90	+5.0	250
M09096	Dual IF Output, K Band Transceiver w/Planar Antenna	24.125	60 to 120	8.0	-90	+3.5 to +6.5	220
M09402	Ka Band Stereo Transceiver	35.5	75 to 105	5	-90	3.5 - 6.0	300

¹ M09081 and M09082 pulse width = 10 microseconds, duty factor = 50%.² Actual operating voltage specified with product.

Other pulse widths and duty factors available upon request.

Other frequencies and power levels available upon request.

Voltage Controlled Gunn Transceivers

Part Number	Description	Frequency (GHz)	Min. Electronic Tuning (MHz)	Min. Output Power (mW)	Min. Sensitivity (dBc)	Operating Voltage (V) ¹	Max. Operating Current (mA)
M087127-1	X Band VCO Transceiver	10.300	40 (+1 to +20 V)	10	-110	+8.0 to +10.0	200
M087127-2	X Band VCO Transceiver	10.300	40 (+1 to +20 V)	20	-110	+8.0 to +10.0	600
M087127-3	X Band VCO Transceiver	10.300	40 (+1 to +20 V)	35	-110	+8.0 to +10.0	600
M09071	K Band VCO Transceiver	24.125	50 (+1 to +20 V)	5	-90	+5.0	150
M09072	Dual IF Output, K Band VCO Transceiver	24.125	50 (+1 to +20 V)	5	-90	+5.0	150
M087849	K Band VCO Transceiver	24.125	150 (+0.5 to +20 V)	5	-95	+5.0 to +8.0	400
M087930	K Band VCO Transceiver	24.125	350 (0 to +9 V)	5 to 10	-95	+5.0 to +8.0	400
M09410-1	Ka Band VCO Transceiver	35.5	100 (+1 to +20 V)	7.5	-90	3.5 - 6.0	350
M09410-2	Ka Band VCO Transceiver	34.7	100 (+1 to +20 V)	7.5	-90	3.5 - 6.0	350
M09410-3	Ka Band VCO Transceiver	33.8	100 (+1 to +20 V)	7.5	-90	3.5 - 6.0	350

¹ Actual operating voltage specified with product.

RF Modulators

Part Number	Description	Frequency (GHz)	Modulation Rate (Hz)	Typical Modulation Depth	Drive Voltage (V)	Typ. Drive Current (mA)
M09207	K Band Waveguide Modulator	24.125	1Hz - 100,000 Hz	>90%	1.3	20

Specifications @ 25°C.

Specifications subject to change without notice.

Oscillators

Fixed Frequency Gunn Oscillators

Part Number	Description	Frequency (GHz)	Min. Output Power (mW)	Operating Voltage (V)	Max Operating Current (mA)
M086751A	X Band Oscillator	10.525	10	+8.5	200
M086751B	X Band Oscillator	10.525	25	+9.0 to +10.0	500
M086751C	X Band Oscillator	10.525	50	+9.0 to +10.0	600
M086751D	X Band Oscillator	10.525	100	+9.0 to +10.0	800
M09060	K Band Oscillator	24.125	5	+5.0	100
M09080 ¹	K Band Oscillator (Pulsed)	24.125	11-20 Peak	+6.0 to +7.0	300 Peak
M086790	K Band Oscillator	24.150	10-20	+3.5 to +6.5	250
M086791	K Band Oscillator	24.150	40-100	+5.0 to +8.0	1000
M086797	Ka Band Oscillator	35.500	15-25	+3.0 to +6.0	450
M09205	Ka Band Oscillator	35.500	15-30	+5.0	400

¹ M09080 pulse width = 10 microseconds, duty factor = 50%. Other pulse widths and duty factors available upon request.
Other frequencies and power levels available upon request.

Voltage Controlled Gunn Oscillators

Part Number	Description	Frequency (GHz)	Min. Electronic Tuning (MHz)	Min. Output Power (mW)	Tuning Voltage (V)	Operating Voltage (V)	Max. Operating Current(mA)
M087108-1	X Band Oscillator	10.300	40	15	+1 to +20	+8.0 to +10.0	200
M087108-2	X Band Oscillator	10.300	40	25	+1 to +20	+8.0 to +10.0	600
M087108-3	X Band Oscillator	10.300	40	40	+1 to +20	+8.0 to +10.0	600
M087603B	X Band Oscillator	9.405	60	7	0 to +13	+10.5	200
M09070	K Band Oscillator	24.125	25	3	+2 to +10	+5.0	100
M087828-1	K Band Oscillator	21.500	40	10	0 to +15	+5.0 to +8.0	400
M087828-2	K Band Oscillator	22.100	40	10	0 to +15	+5.0 to +8.0	400
M087828-3	K Band Oscillator	22.700	40	10	0 to +15	+5.0 to +8.0	400
M087828-4	K Band Oscillator	23.300	40	10	0 to +15	+5.0 to +8.0	400
M087827-1	K Band Oscillator	21.500	30	60	0 to +10	+5.0 to +8.0	1400
M087827-2	K Band Oscillator	22.100	30	60	0 to +10	+5.0 to +8.0	1400
M087827-3	K Band Oscillator	22.700	30	60	0 to +10	+5.0 to +8.0	1400
M087827-4	K Band Oscillator	23.300	30	60	0 to +10	+5.0 to +8.0	1400
M09405-1	Ka Band Oscillator	34.0	100	15	+1 to +20	+4.0 to +6.0	400

Other frequencies available upon request.

Horn Antennas

Part Number	Description	Center Frequency (GHz)	Usable Frequency Range (GHz)	Antenna 3dB Beamwidth E Plane (deg)	Antenna 3dB Beamwidth H Plane (deg)	Nominal Gain (dB)
MDT86552	K Band Pyramidal Horn Antenna	24.150	18.0 to 26.5	20	27	17
MDT86554	X Band Pyramidal Horn Antenna	10.525	8.0 to 12.0	70	30	12
MDT5864	K Band Planar Array Antenna	24.125	24.0 to 24.25	14	14	18
MHA4200	V Band Pyramidal Horn Antenna	77.000	76.0 to 78.0	20	15	20
MDT6386	K Band Pyramidal Horn Antenna	24.150	18.0 to 26.5	17	26	18

MDT6386 has an integrated harmonic filter.

Specifications @ 25°C.

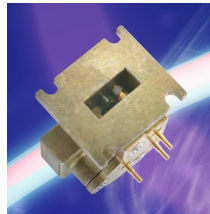
Specifications subject to change without notice.

Waveguide Detectors

Part Number	Description	Center Frequency (GHz)	Minimum Detectable Signal (dBm) ¹	RF Bandwidth (MHz)
M086561	K Band Detector, Waveguide Mount	24.125	-45	300
M086571	X Band Detector, Waveguide Mount	10.525	-45	300

¹ Video bandwidth = 1 MHz; N.F. = 2 dB.
Other frequencies available upon request.

Specifications @ 25°C.
Specifications subject to change without notice.



Microsemi.

Microsemi Corporation
75 Technology Drive
Lowell, MA 01851-5293
phone: (978) 442-5600
fax: (978) 937-3748
sales_MMPI@microsemi.com

SUNSTAR商斯达实业集团是集研发、生产、工程、销售、代理经销、技术咨询、信息服务等为一体的高科技企业，是专业高科技电子产品生产厂家，是具有10多年历史的专业电子元器件供应商，是中国最早和最大的仓储式连锁规模经营大型综合电子零部件代理分销商之一，是一家专业代理和分销世界各大品牌IC芯片和电子元器件的连锁经营综合性国际公司。在香港、北京、深圳、上海、西安、成都等全国主要电子市场设有直属分公司和产品展示展销窗口门市部专卖店及代理分销商，已在全国范围内建成强大统一的供货和代理分销网络。我们专业代理经销、开发生产电子元器件、集成电路、传感器、微波光电元器件、工控机/DOC/DOM电子盘、专用电路、单片机开发、MCU/DSP/ARM/FPGA软件硬件、二极管、三极管、模块等，是您可靠的一站式现货配套供应商、方案提供商、部件功能模块开发配套商。专业以现代信息产业（计算机、通讯及传感器）三大支柱之一的传感器为主营业务，专业经营各类传感器的代理、销售生产、网络信息、科技图书资料及配套产品设计、工程开发。我们的专业网站——中国传感器科技信息网（全球传感器数据库）www.SENSOR-IC.COM 服务于全球高科技生产商及贸易商，为企业科技产品开发提供技术交流平台。欢迎各厂商互通有无、交换信息、交换链接、发布寻求代理信息。欢迎国外高科技传感器、变送器、执行器、自动控制产品厂商介绍产品到中国，共同开拓市场。本网站是关于各种传感器-变送器-仪器仪表及工业自动化大型专业网站，深入到工业控制、系统工程计 测量、自动化、安防报警、消费电子等众多领域，把最新的传感器-变送器-仪器仪表买卖信息，最新技术供求，最新采购商，行业动态，发展方向，最新的技术应用和市场资讯及时的传递给广大科技开发、科学研究、产品设计人员。本网站已成功为石油、化工、电力、医药、生物、航空、航天、国防、能源、冶金、电子、工业、农业、交通、汽车、矿山、煤炭、纺织、信息、通信、IT、安防、环保、印刷、科研、气象、仪器仪表等领域从事科学研究、产品设计、开发、生产制造的科技人员、管理人员、和采购人员提供满意服务。我公司专业生产、代理、经销、销售各种传感器、变送器、敏感元器件、开关、执行器、仪器仪表、自动化控制系统：专业从事设计、生产、销售各种传感器、变送器、各种测控仪表、热工仪表、现场控制器、计算机控制系统、数据采集系统、各类环境监控系统、专用控制系统应用软件以及嵌入式系统开发及应用等工作。如热敏电阻、压敏电阻、温度传感器、温度变送器、湿度传感器、湿度变送器、气体传感器、气体变送器、压力传感器、压力变送、称重传感器、物（液）位传感器、物（液）位变送器、流量传感器、流量变送器、电流（压）传感器、溶氧传感器、霍尔传感器、图像传感器、超声波传感器、位移传感器、速度传感器、加速度传感器、扭距传感器、红外传感器、紫外传感器、火焰传感器、激光传感器、振动传感器、轴角传感器、光电传感器、接近传感器、干簧管传感器、继电器传感器、微型电泵、磁敏（阻）传感器、压力开关、接近开关、光电开关、色标传感器、光纤传感器、齿轮测速传感器、时间继电器、计数器、计米器、温控仪、固态继电器、调压模块、电磁铁、电压表、电流表等特殊传感器。同时承接传感器应用电路、产品设计和自动化工程项目。

欢迎索取免费详细资料、设计指南和光盘；产品凡多，未能尽录，欢迎来电查询。

更多产品请看本公司产品专用销售网站：

商斯达中国传感器科技信息网：<http://www.sensor-ic.com/>

商斯达工控安防网：<http://www.pc-ps.net/>

商斯达电子元器件网：<http://www.sunstare.com/>

商斯达微波光电产品网：[HTTP://www.rfoe.net/](http://www.rfoe.net/)

商斯达消费电子产品网：<http://www.icasic.com/>

商斯达军工产品网：<http://www.junpinic.com/>

商斯达实业科技产品网：<http://www.sunstars.cn/>传感器销售热线：

地址：深圳市福田区福华路福庆街鸿图大厦1602室

电话：0755-83607652 83376489 83376549 83370250 83370251 82500323

传真：0755-83376182 (0) 13902971329 MSN: SUNS888@hotmail.com

邮编：518033 E-mail: szss20@163.com QQ: 195847376

深圳赛格展销部：深圳华强北路赛格电子市场2583号 电话：0755-83665529

技术支持：0755-83394033 13501568376