

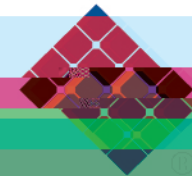
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* 本手册所涉及的器件参数和选型方法仅供参考，具体产品设计请参考宏微官网主页，并结合实际应用情况加以确认。

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MACMIC

专注功率半导体产品设计与制造

股票名称	宏微科技
股票代码	688711

Power for the Better

MACMIC



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2025-2026 产品手册

Product Catalogue

江苏宏微科技股份有限公司

MacMic Science & Technology Co., Ltd.



提高用电效率，改善用电质量

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企业简介

COMPANY PROFILE

江苏宏微科技股份有限公司(英文名MACMIC)成立于2006年,主营业务为功率半导体器件的设计、研发、制造及销售,主要产品包括 IGBT、MOSFET、FRED、SiC 等芯片、分立器件、模块等功率半导体器件。公司自产 IGBT、FRED 芯片技术已达国际先进、国内领先水平,打破国外垄断,填补了多项国内空白。宏微科技是国内功率半导体器件行业领军企业之一,2021年,成功登陆科创板,股票代码 688711。

MACMIC was founded in 2006. Its main business is the R&D, manufacturing and sales of power semiconductor devices. The main products of MACMIC are IGBT, MOSFET, FRED, SiC chips, discrete devices and modules. MACMIC has advanced IGBT and FRED technologies. MACMIC focuses on becoming an expert in providing power semiconductor device solutions. The company is one of the leading companies in the power semiconductor device industry. MACMIC was successfully listed on the Shanghai Science and Technology Innovation Board with stock ticker 688711.

业务范围 BUSINESS SCOPES

- 设计、研发、生产和销售新型电力半导体芯片、分立器件及模块,如 IGBT、FRED、SiC 芯片、分立器件、标准模块及用户定制模块 (CSPM)。
- Design, development, manufacturing, and marketing of new types of power semiconductor devices, i.e. IGBT, FRED, SiC chips and discrete devices, standard and customer-specific power modules (CSPM).

品质体系 QUALITY ASSURANCE SYSTEMS

产品和服务,满足并超越顾客的要求和期望。

Products and

providing better products and services to meet

量管理体系控制。每道工序均经过严格检测,确保
产品的质量符合性。

体器件解决大功率应用

Independent innovation, design, development and manufacturing of world-class IGBT, FRED, SiC chips.

企业实力

COMPANY STRENGTH

功率模块生产线 POWER MODULE FABRICATION LINES

功率模块厂房: 10000m²洁净厂房 1700m²防静电超净模块车间
Fab 2 (新竹厂区): 11200m²先进厂房 5600m²防静电超净模块车间
Fab 4 (芯动能[®]): 14000m²先进厂房 12300m²防静电超净模块车间
* 注: 芯动能是宏微科技的子公司

厂房 (Clean Room): Clean Room Area: 14000m²
洁净度 (洁净度): Clean Room Area: 12300m²

功率 IGBT 动态测试仪 IGBT Switching Parameter Tester
IGBT 栅电荷测试仪 IGBT Charge Tester

功率 IGBT 动态测试仪 IGBT Switching Parameter Tester
IGBT 栅电荷测试仪 IGBT Charge Tester

功率 IGBT 动态测试仪

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功率 IGBT 动态测试仪

IGBT 模块
IGBT MODULES

产品范围 Ranges

- 600-1700V / 10-950A

封装 Packages

- GJ, GS, GQ, GD, GK, GQC, GWJ, GCB, GCE, GCH, GHD, GW, GWF, GJC, GJC2, GJC3, GJC4

- 单单元电路
Single Circuit
- 半桥电路, 全桥电路, 三相桥电路
Half-Bridge Circuit, Full-Bridge Circuit, Three-Phase Bridge Circuit
- 斩波电路, 共发射极电路
Chopping Circuit, Common-Emitter Circuit

- 开关速度快
Fast Switching Speed
- 低导通损耗
Low Conduction Loss
- 软关断特性
Soft Turn-Off Characteristics

应用 Applications

- 逆变电焊机、切割机
Welding Machine, Cutting Machine
- 中频电源, 感应加热
Plating Power Supply, Induction Heating
- UPS、变频器、斩波调速
UPS, Inverter, Chopper
- 工业伺服, 开关磁阻电机驱动器
Servo Drive, Switched Reluctance Drive

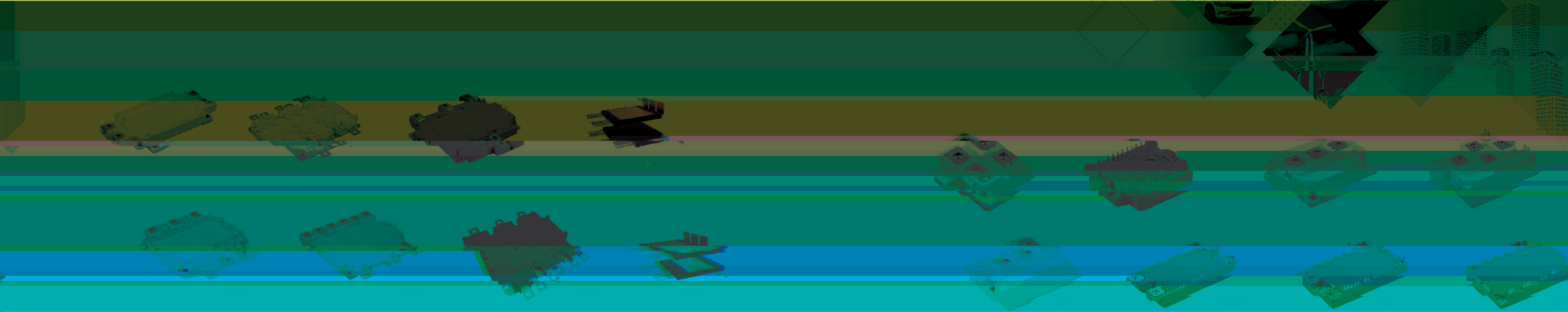
应用电路, 应用案例图



600-650V IGBT 模块 600-650V IGBT MODULES

Circuit	Part Number	V_{CES} min	I_C $T_c=100^{\circ}C$	$V_{CE(sat)}$	P_D max	E_{off} max	R_{thJC} max	Package Options
		(V)	(A)	(V)	(W)	(mJ)	(K/W)	

	MMG300B065PD6TC	650	300	1.55	862	11.20	0.17	GB
	MMG100CE065PD6TC	650	100	1.55	300	2.40	0.45	GCE
	MMG75S060B6TC	600	75	1.55	250	2.15	0.60	GS
	MMG100S060B6TC	600	100	1.55	330	2.15	0.45	GS
	MMG150S060B6TC	600	150	1.65	441	5.00	0.34	GS
	MMG200S060B6TC	600	200	1.65	588	6.75	0.25	GS
	MMG300D060B6TC	600	300	1.55	862	11.20	0.17	GD
	MMG300D060B6TC	600	300	1.55	862	11.20	0.165	GD
	MMG300D060B6TC	600	300	1.55	862	11.20	0.165	GD



750V IGBT 模块 750V IGBT MODULES

As noted		Tc=25°C unless otherwise noted							
Outline	Number	V _{DS} min.	V _{DS} Tc=65-110°C	V _{CE(sat)} typ.	V _{CE(sat)} max.	I _{AS} Tc=65-110°C	I _{AS} Tj=125°C	I _{AS} max.	Outline
		(V)	(V)	(V)	(V)	(A)	(A)	(A)	(KVW)
	MMGZ80VD075X6T7	750	280	1.38	595	15.5	0.252		GVD
	MMG400VD075X6TC-12	750	400	1.40	1027	24.0	0.146		GVD
	MMG400VB075X6TC	750	400	1.21	1071	21.7	0.107		GVB
	MMG400VC075X6TC	750	400	1.24	1070	22.2	0.11		GVB
	MMG800V075X6T7	750	600	1.10	937	20.0	0.10		GV
	MMG800VB075X6TC	750	600	1.10	937	20.0	0.10		GV
	MMG820V075X6TC	750	820	1.15	1070	20.0	0.14		GV
	MMG950V075X6T7	750	950	1.15	1800	28.2			
	MMG500VE075X6T7	750	500	1.35	600	15.0	0.23		GVE
	MMG500VB075X6TC	750	500	1.35	600	15.0	0.23		GVE

1200V IGBT 模块 1200V IGBT MODULES

As noted		Tc=25°C unless otherwise noted							
Outline	Number	V _{DS} min.	V _{DS} Tc=65-110°C	V _{CE(sat)} typ.	V _{CE(sat)} max.	I _{AS} Tc=65-110°C	I _{AS} Tj=125°C	I _{AS} max.	Outline
		(V)	(V)	(V)	(V)	(A)	(A)	(A)	(KVW)
	MMG50S120B6UC	1200	50	1.70	405	3.10	0.37		
	MMG75S120B6UC	1200	75	1.70	525	4.40	0.32		
	MMG100S120B6UC	1200	100	2.20	555	5.00	0.27		
	MMG150S120B6UC	1200	150	2.00	550	5.50	0.17		
	MMG150D120B6UC	1200	150	1.70	937	9.60	0.10		
	MMG300D120B6UC	1200	300	1.90	1578	23.50	0.09		
	MMG75QC120H6UC	1200	75	1.70	535	4.10	0.26		
	MMG100CB120AB6TC	1200	10	1.65	107	0.69	1.25		



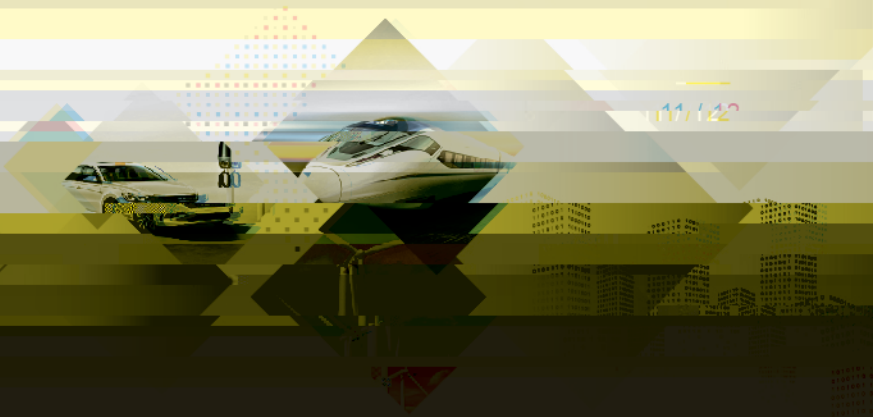
◆ 1200V IGBT 模块 1200V IGBT MODULES

Tc=25°C unless otherwise noted

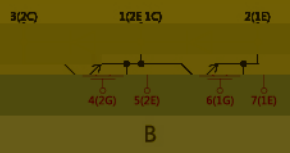
Circuit	Part Number	V _{CES} min. (V)	I _C T _C =65-110°C (A)	V _{CE(sat)} typ. (V)	P _D max. (W)	E _{off} T _J =125°C (mJ)	R _{thJC} max. (K/W)	Package Outline
	MMG35HD120X161TC	1200	35	1.85	208	3.30	0.72	GHD
	MMG50HD120XB6TC	1200	50	1.80	278	4.20	0.54	GHD
	MMG50HD120XT6TC	1200	50	1.80	278	4.20	0.54	GHD
	MMG25H120XB6TC	1200	25	1.85	166	2.40	0.90	GH
	MMG40H120XB6TC	1200	40	1.95	208	3.35	0.72	GH
	MMG50W120XB6TC	1200	50	1.85	278	4.00	0.54	GW
	MMG75W120XB6TC	1200	75	1.85	385	6.20	0.39	GW
	MMG100W120XB6TC	1200	100	1.85	515	9.10	0.29	GJ
	MMG150W120XB6TC	1200	150	1.85	750	13.00	0.20	GW
	MMG75J120UZ6TC	1200	75	1.85	385	6.20	0.39	GJ
	MMG100J120UZ6TC	1200	100	1.85	515	9.10	0.29	GJ
	MMG150J120UZ6TC	1200	150	1.85	750	14.40	0.20	GJ
	MMG75S120B6TC	1200	75	1.85	385	6.20	0.39	GS
	MMG100S120B6TC	1200	100	1.70	515	8.30	0.29	GS
	MMG150S120B6TC	1200	150	1.85	750	13.00	0.20	GS
	MMG150D120B6TC	1200	150	1.70	789	12.10	0.19	GD

◆ 1200V IGBT 模块 1200V IGBT MODULES

Circuit	Part Number	V _{CES} min. (V)	I _C T _C =65-110°C (A)	V _{CE(sat)} typ. (V)	P _D max. (W)	E _{off} T _J =125°C (mJ)	R _{thJC} max. (K/W)	Package Outline
	MMG200Q120B6TC	1200	200	1.70	1074	16.50	0.14	GQ
	MMG200D120B6TC	1200	200	1.70	1074	16.50	0.14	GD
	MMG400D120B6TC	1200	400	1.85	2000	35.00	0.75	GD
	MMG450D120B6TC	1200	450	1.85	2235	52.00	0.07	GD
	MMG300WB120B6TC	1200	300	1.80	1596	26.30	0.094	GWB
	MMG300WB120TLA6TC	1200	300	1.70	1500	26.50	0.09	GWB
	MMG25CB120XB617	1200	25	1.80	163	3.16	0.92	GCB
	MMG75HE120XB617_W11	1200	75	1.55	340	11.24	0.44	GHE
	MMG450W120PD6T7	1200	450	1.53	1400	13.70	0.107	GWQ
	MMG450WQ120PD6T7	1200	450	1.53	1400	13.70	0.107	GWQ
	MMG560WQ120BF6T7	1200	560	1.50	1666	18.70	0.09	GWQ
	MMG800D120B6T7	1200	800	1.50	3061	132.00	0.05	GD
	MMG800WB120B6T7	1200	800	1.80	3750	121.0	0.04	GWB



Circuit	Part Number	V_{DS}	I_{AS}	$V_{DS}(avg)$	P_D	$R_{\theta JA}$	$P_{D}(max)$	Package Qualification	
		min.	$T_C=$ 65-110°C	typ.	max.	$T_J=125^{\circ}C$	max.		
		(V)	(A)	(V)	(W)	(mJ)	(KW)		
 3(2C) 12E 1C 2(1E) 4(2G) 5(2E) 6(1G) 7(1E) B	SPT ⁺	MMG75S170B	1700	75	2.40	535	18.5	0.28	GS
	MMG100D170B	1700	100	2.30	789	25	0.19	GD	
	MMG150D170B	1700	150	2.30	1071	41	0.14	GD	
	MMG200D170B	1700	200	2.30	1383	56	0.11	GD	
	MMG300D170B	1700	300	2.30	1875	83	0.08	GD	
	MMG300WB170B	1700	300	2.65	2000	94	0.075	GWB	
	MMG450WB170B	1700	450	2.70	2708	158	0.055	GWB	
	MMG600WB170B	1700	600	2.70	3750	215	0.04	GWB	



中升汽车IGBT模块IGBT模块

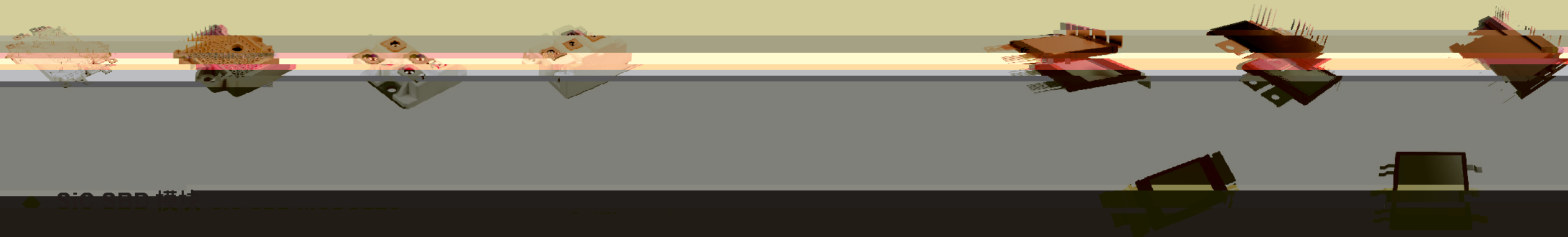
Circuit	Part Number	V_{DS} min.	I_{AS} $T_c=$ 65-110°C	$V_{DS}(avg)$ typ.	P_{D} max.	$R_{\theta JA}$ $T_J=125^{\circ}C$	$P_{D}(max)$ max.	Package Qualification
		(V)	(A)	(V)	(W)	(mJ)	(KW)	
	MMG450WB120B6TC	1200	450	1.85	2305	45.0	0.065	GS
	MMG600WB120B6T6	1200	600	1.70	2841	74.5	0.051	GS
	MMG800WB120B6T7	1200	800	1.80	3750	121.0	0.04	GS
	MMG280VDN075XAT7	750	280	1.38	505	15.5	0.252	GS

GV	MMG200D120B6TC	1200	200	2.30	1383	56	0.11	GD
GV	MMG300D120B6TC	1200	300	2.30	1875	83	0.08	GD
GV	MMG450D120B6TC	1200	450	2.70	2708	158	0.055	GWB
GV	MMG600D120B6TC	1200	600	2.70	3750	215	0.04	GWB
GV	MMG200V120X6TC	1200	200	2.30	1383	56	0.11	GD
GV	MMG300V120X6TC	1200	300	2.30	1875	83	0.08	GD
GV	MMG450V120X6TC	1200	450	2.70	2708	158	0.055	GWB
GV	MMG600V120X6RS	1200	600	1.60	1500	51.0	0.10	GS
GV	MMG100W170HX6TC	1700	100	2.20	750	25	0.20	GW

IGBT 分立器件



SiC 模块
SiC MODULES



SiC MOSFET 模块

	Number	V _{DS} (V)	I _D (A)	R _{DS(on)} (mΩ)	R _{thJA} (K/W)	T _{jmax} (°C)	Package Outline
	MMS2X60J120D	1200	2x60	1.40	0.11	175°C	SJ
	MMS2X100J085D	1200	2x100	1.36	0.24	175°C	SJ
	MMN1V120X6BS	1200	110	7	0.32	175°C	NCB
	MMN01V120X6BS	1200	540	1.57	0.105	175°C	NV
	MMN02V120X6BS	1200	439	2.12	0.118	175°C	NV
	MMN13U120U6TN	1200	107	13.4	0.505	175°C	NJ
	MMN14S120B6TN	1200	140	13.8	0.467	175°C	NS

SiC MOSFET 模块
Sic MOSFET MODULES

塑封 SiC 模块
TRANSFER MOLDED SiC MODULES

	Part Number	V _{DS} (V)	I _D (A)	R _{DS(on)} (mΩ)	R _{thJA} /R _{thJC} (K/W)	T _{jmax} (°C)	Package Outline
	CC002HB12C1P1-R4000	1200	800	1.6	0.016	175°C	DSC
	CC003HB12C2P1-R3000	1200	400	2.2	0.022	175°C	DSC
	CC002HB12C3P1-L2000	1200	600	1.6	0.066	175°C	SDP
	CC006S112-1C1-F1000	1200	200	8	0.093	175°C	Tp4K
	CC010ST12-1C1-F1000	1200	100	10	0.105	175°C	SMPD
	CC033HB12S1C1-F1000	1200	40	35	0.27	175°C	SMPD
	CC060HB12S1C1-F1000	1200	15	60	0.50	175°C	SMPD
	JC010HB12S1C1-F1000	1200	60	1.5	0.14	175°C	SMPD

SIC 分立器件
SIC DISCRETES



◆ SiC SBD 分立器件 SiC SBD DISCRETES

Tc=25°C unless otherwise noted

Part Number	V _{DS}	I _D	R _{DS(on)}	Q _g	t _{rr}	Qualification	Package Outline
MM11NAS075KZ	750	20	1.45	180	175°C	Industrial	TO-247-2L
MM11NAS120KZ	1200	40	1.40	300	175°C	Industrial	TO-247-2L



Tc=25°C unless otherwise noted

Part Number	V _{DS}	I _D	R _{DS(on)}	Q _g	t _{rr}	Qualification	Package Outline
MM11NAS075KZ, MM11NAS120KZ, MM30NAS120KZ, MM30NAS120KZ							
MM11NAS075KZ	750	138	11	217	175°C	Industrial	TO-247-4L
MM11NAS120KZ	1200	278	20	175	175°C	Industrial	TO-247-4L
MM30NAS120KZ	1200	64	30	117	175°C	Industrial	TO-247-4L



FRED 模块
FRED MODULES

产品范围 Ranges

- 200-1700V/ 60-600A

封装 Packages

- E7, EN, E1, EV, EE, EVB, ED

特点 Features

- 绝缘式共阴极电路
Insulated Common-Cathode Circuit
- 绝缘式共阳电路
Insulated Common-Anode Circuit

应用 Applications

- 软恢复特性
Soft-Recovery Characteristics
- 反向阻断
Reverse Blocking

应用 Applications

- 电焊机

应用 Applications

- 无刷直流电动机

应用 Applications

- 光伏逆变器





Tc=25°C unless otherwise noted

Product

Part Number

VRRM

IF(AV)
4-0.5s

IFSM
10ms

VRRM
10000

IF(AV)
10000

IFSM
10000

trr
10000

RθJA

Package Outline

1

2

DK1
(Non-insulated)

Part Number	VRRM	IF(AV) 4-0.5s	IFSM 10ms	VRRM 10000	IF(AV) 10000	IFSM 10000	trr 10000	RθJA	Package Outline
MMF400Z020DK1	200	2×200	1800	0.95	200	390	0.20		FZ
MMF200Z040DK1	400	2×100	1250	1.00	100	70	0.20		FZ
MMF200ZB040DK1C	400	2×100	1000	1.10	100	75	0.22		FZ
MMF200ZB040DK1D	400	2×100	700	1.25	100	49	0.37		FZ
MMF800Y020DK1	200	2×400	3000	1.00	400	165	0.08		FY
MMF200Y040DK1	400	2×100	1250	1.00	100	70	0.10		FY
MMF300Y040DK1	400	2×150	1900	1.20	150	65	0.10		FY
MMF300Y040DK1B	400	2×150	1900	1.20	150	65	0.10		FY
MMF400Y040DK1	400	2×200	2550	1.20	200	75	0.08		FY
MMF400Y040DK1B	400	2×200	2550	1.20	200	75	0.08		FY
MMF200Y060DK1	600	2×100	1200	1.20	100	91	0.20		FY
MMF300Y060DK1	600	2×150	2500	1.20	150	100	0.08		FY
MMF300YB050U	500	300	3800	1.20	300	160	0.11		FYB
MMF300YB070U	700	300	3800	1.38	300	121	0.12		FYB
MMF600S020U	600	600	1000	1.10	600	170	0.070		FS
MMF200S060DA	600	2×200	2000	1.15	200	140	0.18		FS
MMF600S120U	1200	600	4800	2.80	600	200	0.10		FS
MMF400D120U	1200	400	3600	2.10	400	190	0.085		FD

1

2

U

1

2

U

2

1

3

B

1

2

3

DK1

FS

2

DA

Tc=25°C unless otherwise noted

Part Number

VRRM

IF(AV)
d=0.5

IFSM
10ms

VRRM
10000

IF(AV)
10000

IFSM
10000

trr
10000

RθJA

Package Outline

Part Number	VRRM	IF(AV) d=0.5	IFSM 10ms	VRRM 10000	IF(AV) 10000	IFSM 10000	trr 10000	RθJA	Package Outline
MMF200S060B	600	2×200	2000	1.15	200	140	0.18		FS
MMF300S060B	600	2×300	3000	1.15	300	150	0.14		FS
MMF150S120B	1200	2×150	1500	1.60	150	145	0.22		FS
MMF200S120B	1200	2×200	1800	2.30	200	110	0.22		FS
MMF300S120B	1200	2×300	2700	2.80	300	135	0.14		FS
MMF100S170B	1700	2×100	1000	1.80	100	500	0.22		FS
MMF300N060DK6B	600	2×150	1410	1.25	150	95	0.34		FN
MMF200N120DK	1200	2×100	1100	1.77	100	150	0.44		FN
MMF150S060DK	600	2×150	1500	1.15	150	130	0.22		FS
MMF300S060DK	600	2×200	2000	1.15	200	140	0.18		FS
MMF300S080DK	600	2×300	3000	1.15	300	150	0.14		FS
MMF150S120DK	1200	2×150	1500	1.60	150	145	0.22		FS
MMF200S120DK	1200	2×200	1800	2.30	200	110	0.22		FS
MMF300S120DK	1200	2×300	2700	2.80	300	135	0.14		FS
MMF200N120DA	1200	2×100	1100	1.77	100	150	0.44		FN
MMF200S060DA	600	2×200	2000	1.15	200	140	0.18		FS
MMF300S060DA	600	2×300	3000	1.15	300	150	0.14		FS
MMF150S120DA	1200	2×150	1500	1.60	150	145	0.22		FS



FRED 分立器件
FRED DISCRETES

Symbol	Part Number	Tc=25°C unless otherwise noted							
		VRRM	IF(AV) d=0.5 Tc=110°C	IFSM 10ms Tc=45°C	VFM@IFM T=25°C	IFM	ttr T=25°C	RthJC	Package Outline
		(V)	(A)	(A)	(V)	(A)	(ns)	(K/W)	
	MMF2X100J040D	400	2×100	1100	1.20	100	62	0.34	FJ
	MMF2X160J070D	700	2×60	600	1.15	60	150	0.60	FJ
	MMF200S060DK2B	600	2×200	2000	1.15	200	140	0.18	FS
	MMF300S120DA2B	1200	2×300	2700	2.80	300	135	0.14	FS
	MMF150S060DA2B	600	2×150	1500	1.25	150	95	0.30	FS
	MMF200S060DA2B	600	2×200	2000	1.15	200	140	0.18	FS
	MMF150S120B2B	1200	2×150	1500	1.00	150	140	0.22	FS

产品范围 Ranges

- 300A/1700V/20A/100A

封装 Packages

- TO-220, TO-247, TO-247-3L, TO-3P

应用 Applications

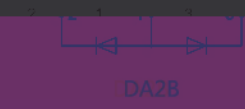
- 电动机
- 光伏逆变器, LLC 电源

特性 Features

- 低导通电阻
- 高雪崩能量



MMF200S060DK2B	600	2×200	2000	1.15	200	140	0.18	FS
MMF300S060DK2B	600	2×300	3000	1.10	300	135	0.14	FS
MMF150S060DA2B	600	2×150	1500	1.25	150	95	0.30	FS
MMF200S060DA2B	600	2×200	2000	1.15	200	140	0.18	FS
MMF300S120DA2B	1200	2×300	2700	2.80	300	135	0.14	FS
MMF150S120B2B	1200	2×150	1500	1.00	150	140	0.22	FS



2 × 3

B2B





Circuit

Part
Number

Value

Unit

Unit

Value/Ohm

Part

Package



MMD130A100X	1000	100	3450	1.50	400	0.25	0A
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MMD130A100X	1000	100	3500	1.50	400	0.20	0A
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MMD140A100A100X	1000	100	3500				
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MMD150A100X	1000	100	3500	1.50	400	0.20	0A
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MMD1100S100X	1000	100	5500	1.50	500	0.10	0S
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MMD1100S100X	1000	100	5500	1.50	500	0.10	0S
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MMD1100S100X	1000	100	5500	1.50	500	0.10	0S
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MMD2200S100X	1000	200	5500	1.50	600	0.10	0S
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MMD2200S100X	1000	200	5500	1.50	600	0.10	0S
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MMD150F100X	1000	150	1500	1.45	150	0.11	0F
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MMD150F150X	1000	150	1500	1.45	150	0.11	0F
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MMD150F200X	2000	150	1500	1.50	150	0.11	0F
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MMD250F100X	1000	250	1500	1.45	250	0.09	0F
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MMD75ED100X	1000	75	1000	1.35	75	0.15	0X1
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MMD100EB100X	1000	100	1000	1.35	100	0.15	0X1
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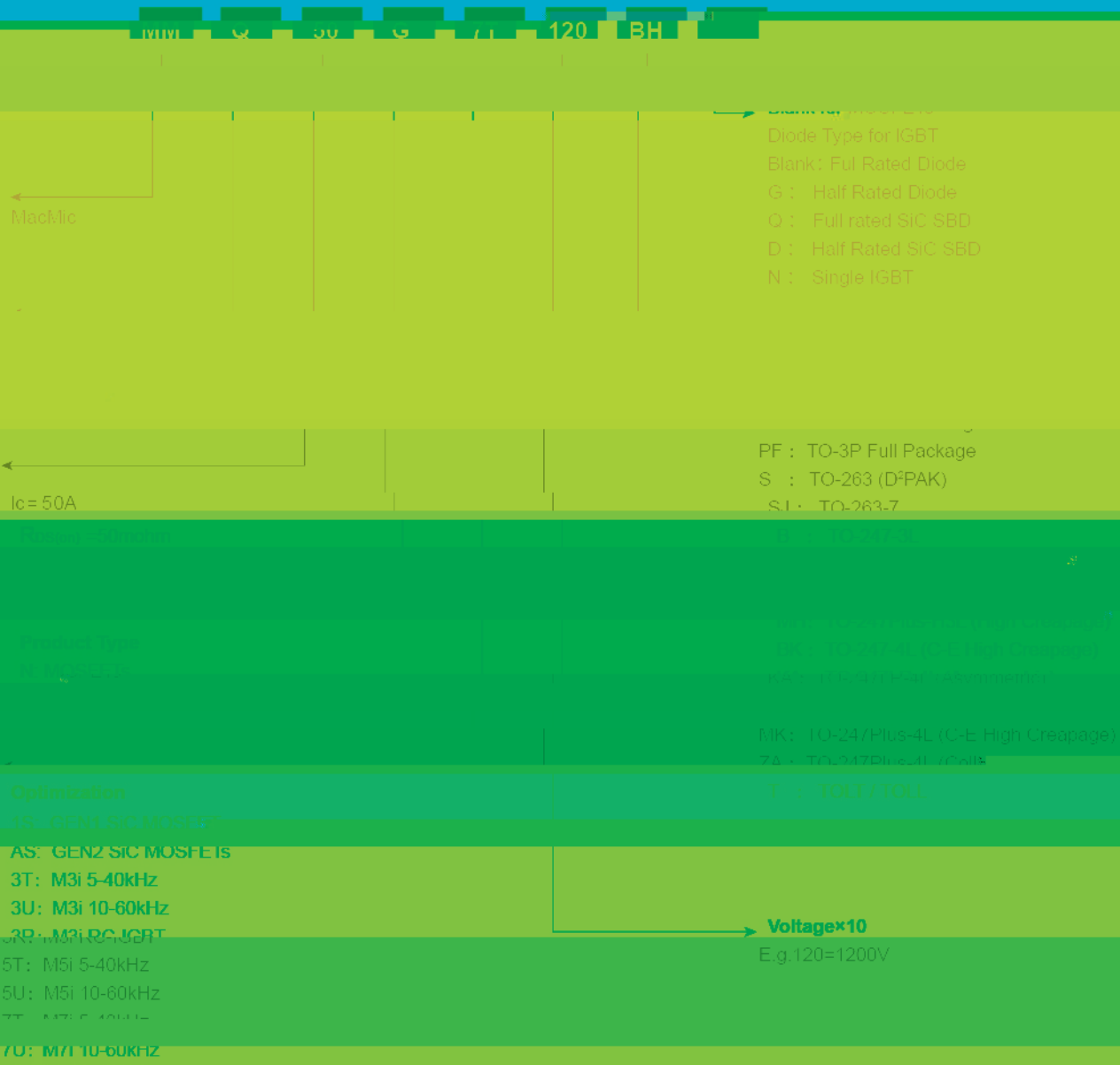
MMD150FB100X	1000	150	1500	1.45	150	0.11	0F1
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MMD200FB100X	1000	200	2000	1.45	200	0.09	0F1
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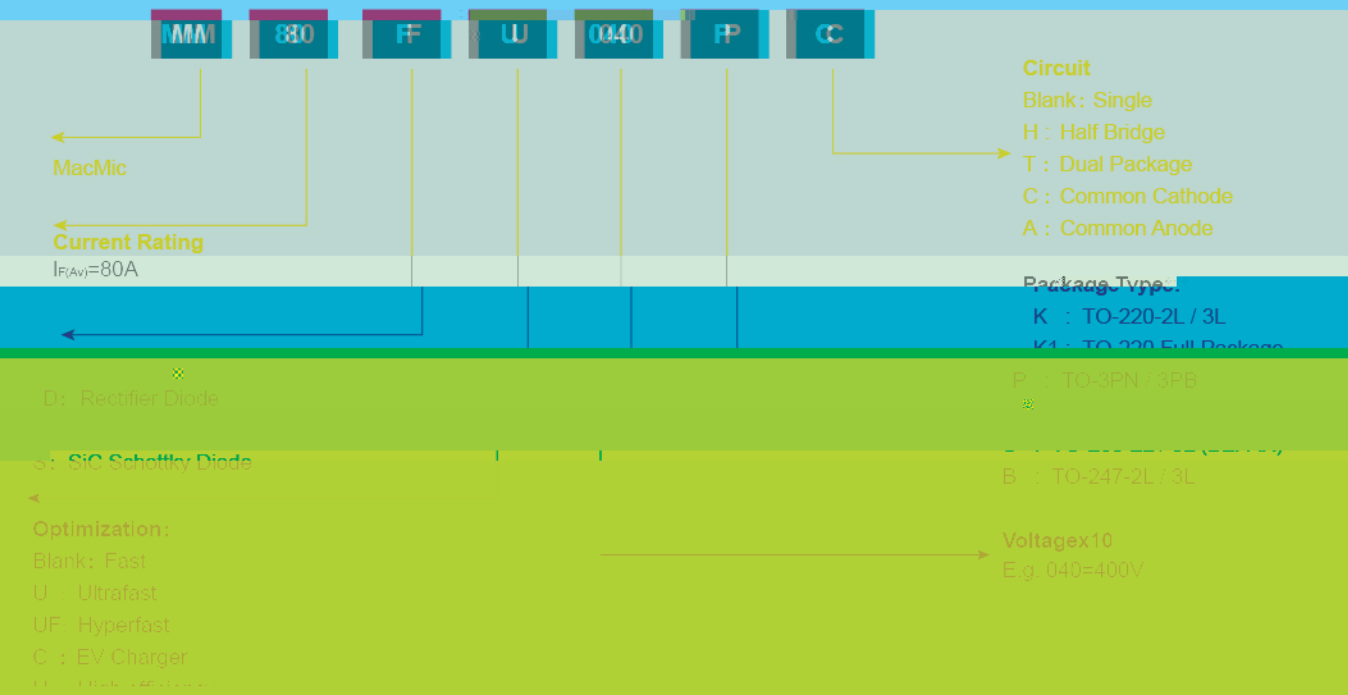
产品命名

PRODUCT NAMING

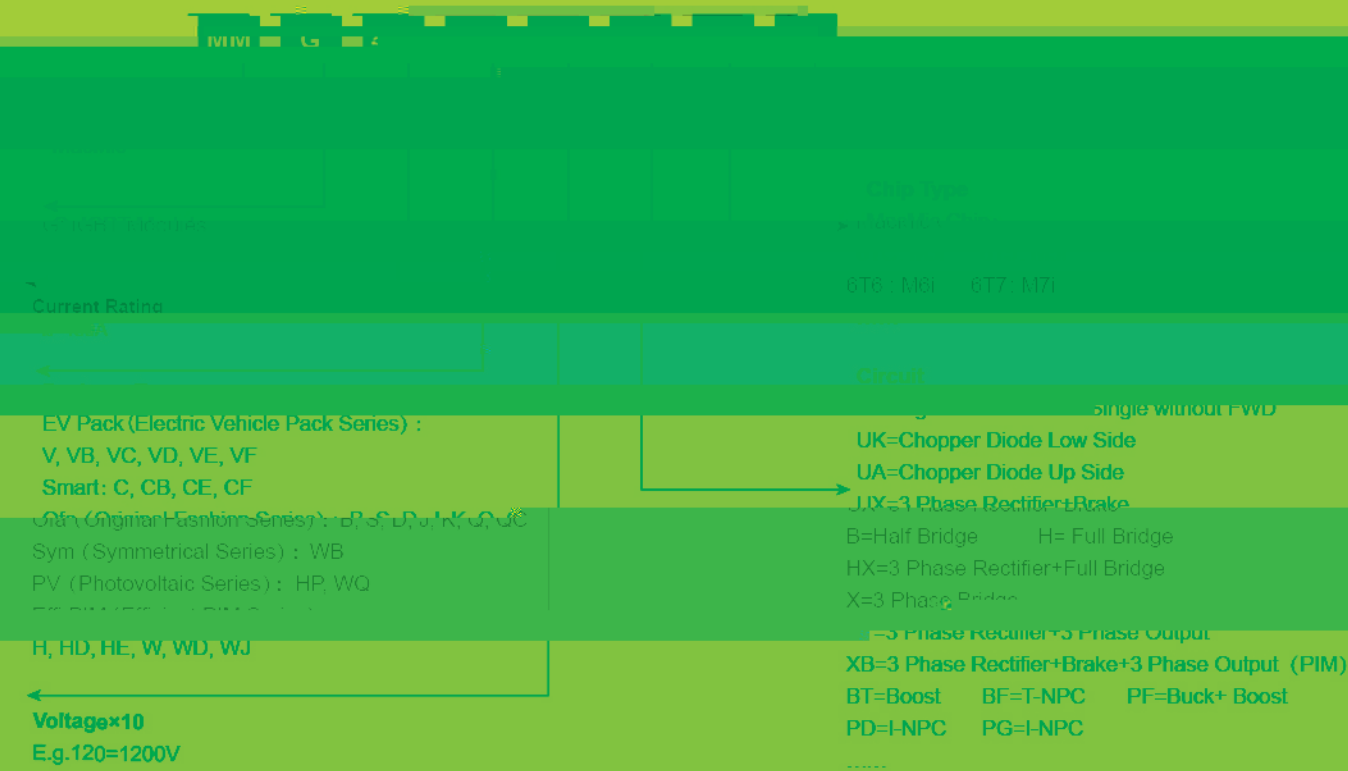
IGBT & MOSFET & SiC MOSFET 分立器件
IGBT & MOSFET & SiC MOSFET DISCRETES



FRED & SiC SBD 分立器件 FRED & SiC SBD DISCRETES

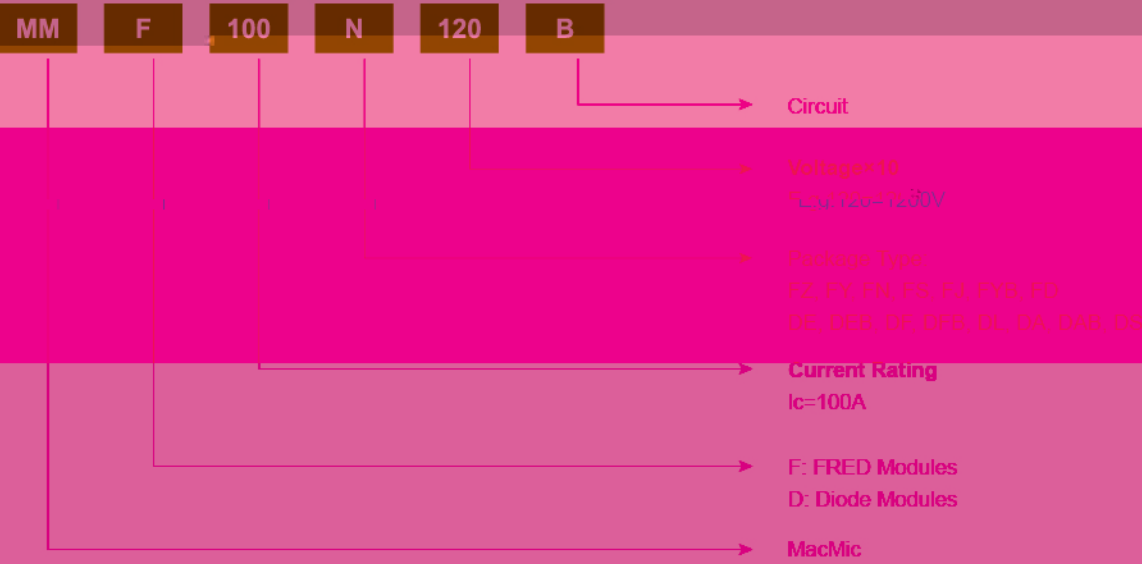


IGBT 模块 & 混合 SiC 模块 IGBT MODULES & HYBRID SiC MODULES

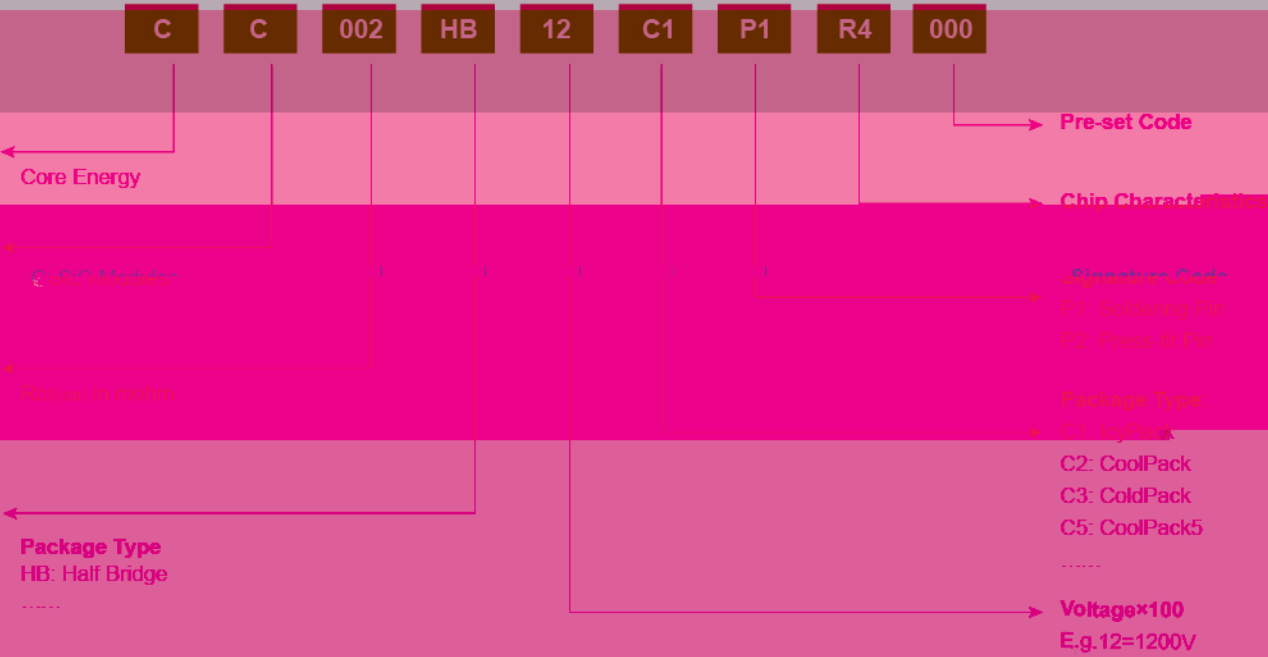


FRED 模块 / 整流二极管模块 / 三相整流桥模块

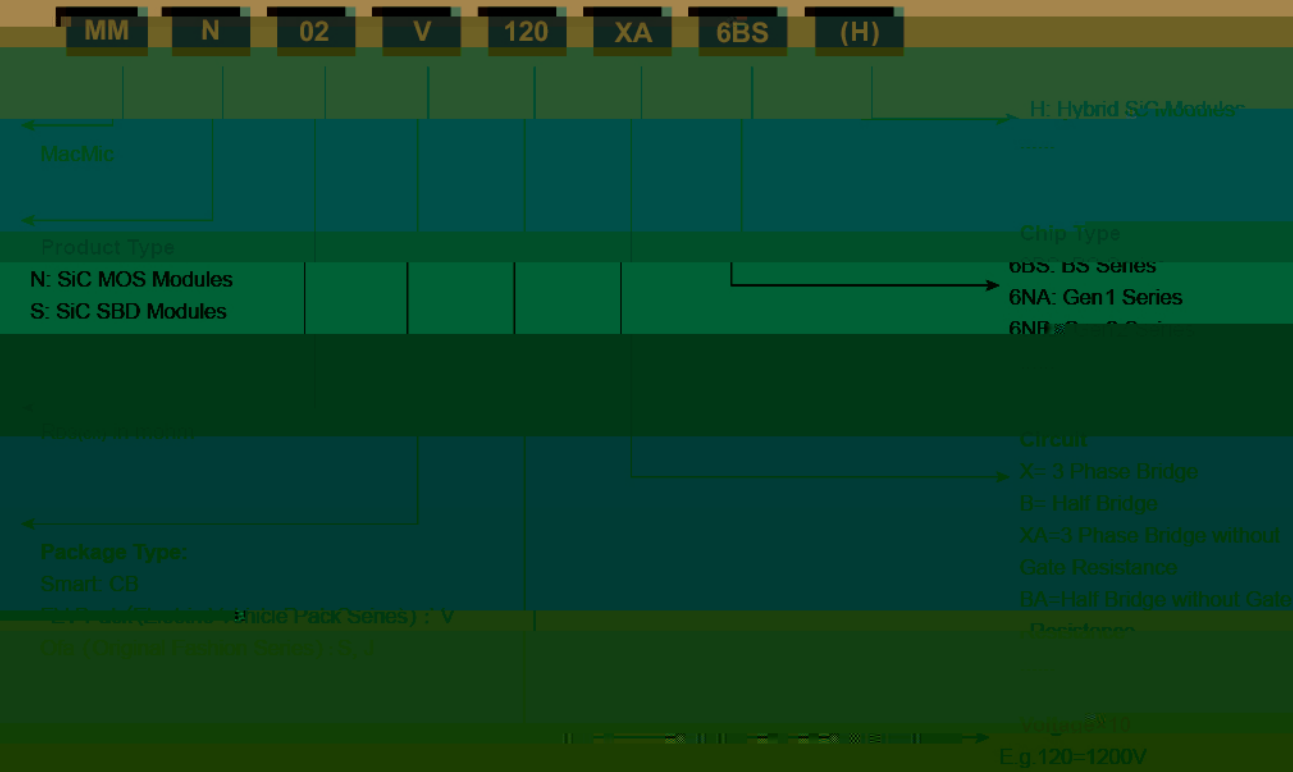
FRED MODULES / RECTIFIER DIODE MODULES / THREE-PHASE RECTIFIER BRIDGE MODULES



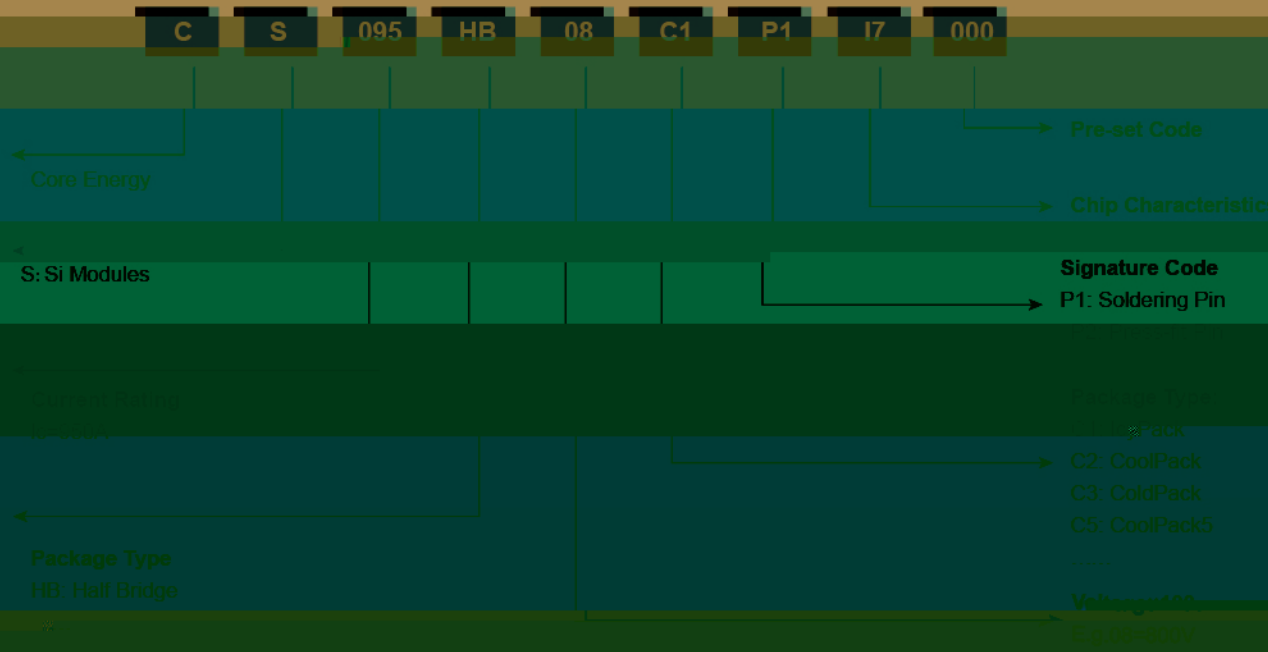
塑封 SiC 模块 TRANSFER-MOLDED SiC MODULES



SiC MOSFET 模块 SiC MOSFET MODULES



塑封 IGBT 模块 TRANSFER-MOLDED IGBT MODULES



外观尺寸图
OUTLINE DRAWINGS



GQ

GHB-H

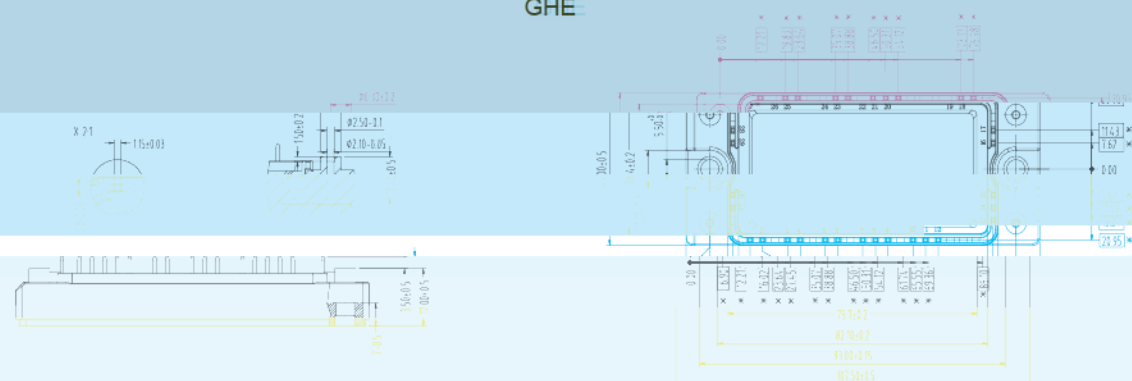
GD

GHD-XB

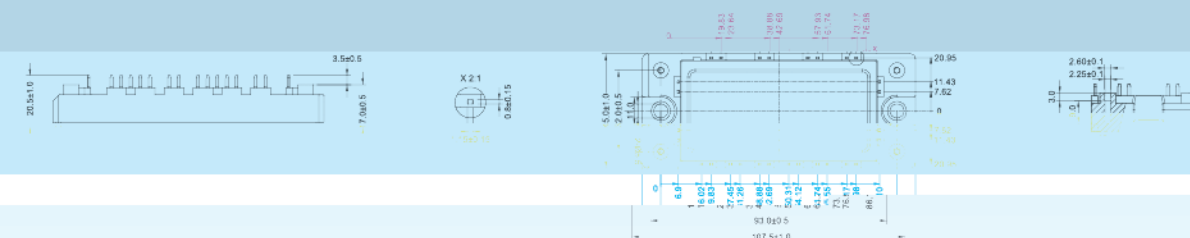
GH-XB



GHE



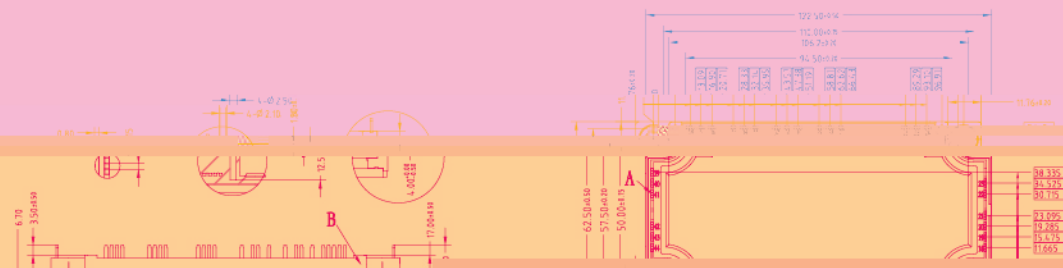
GH-X



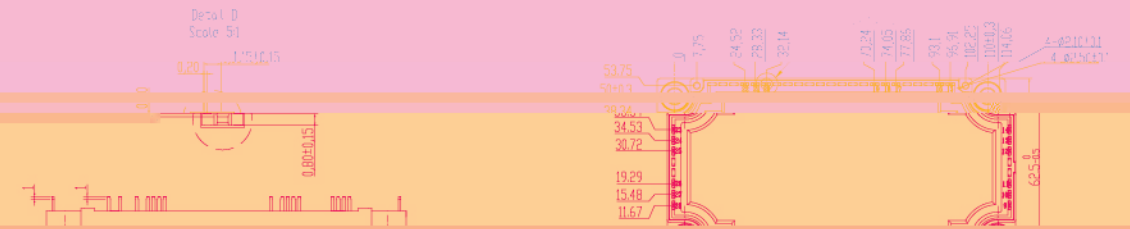
GVTD XE

GW-X

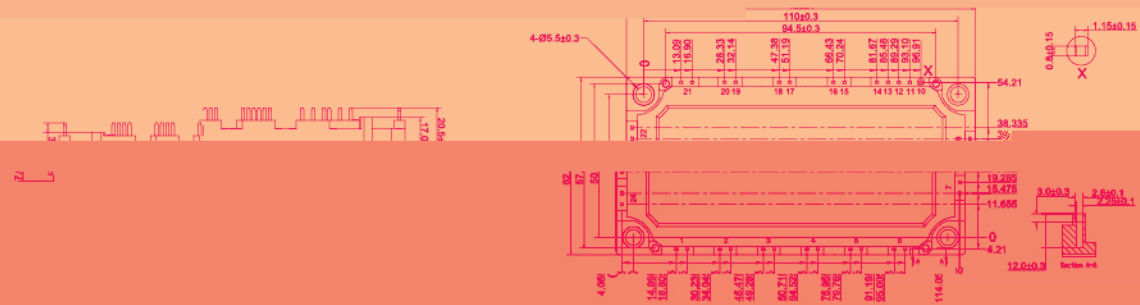
GWJ



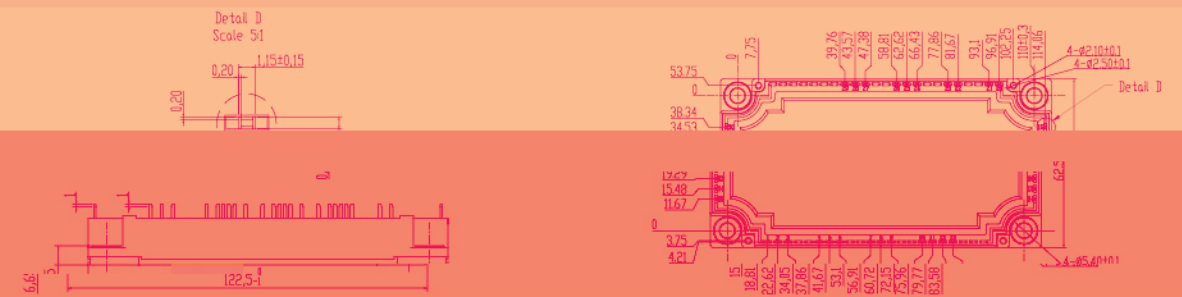
GW-H

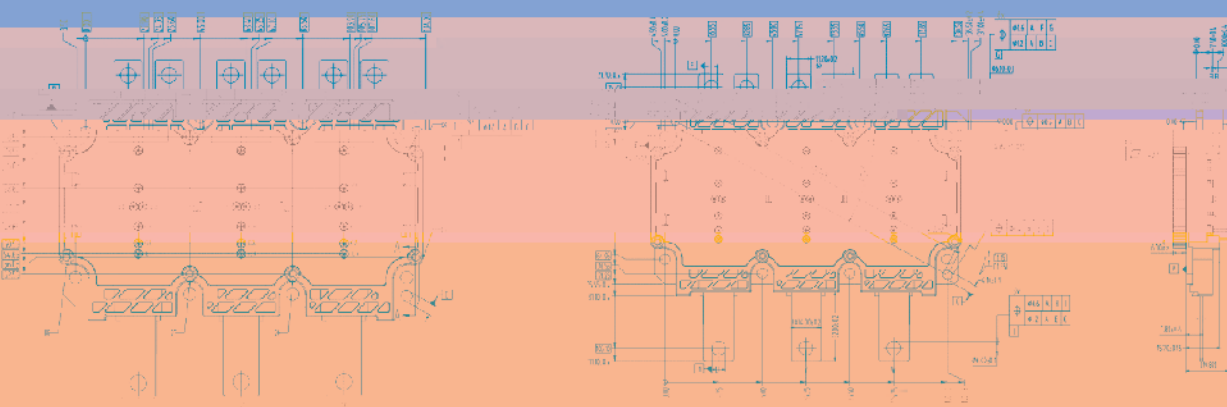
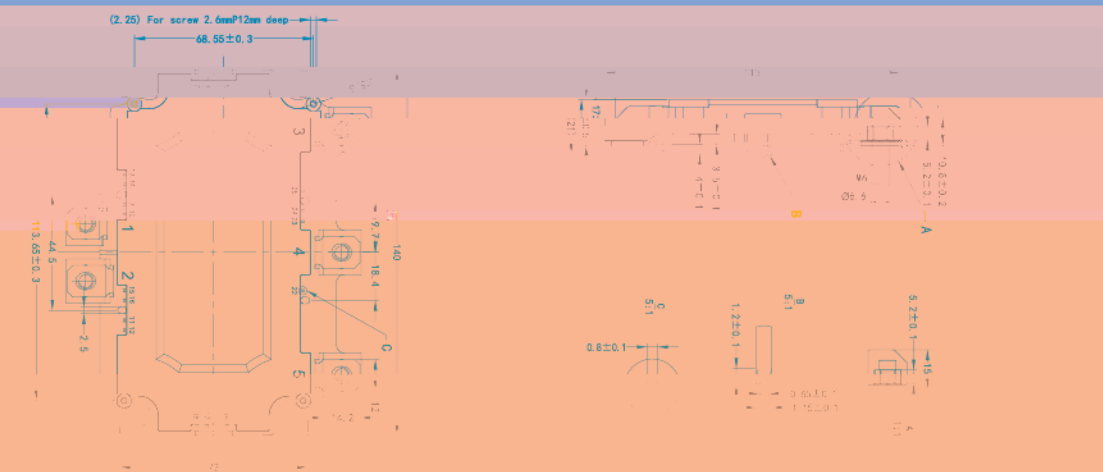
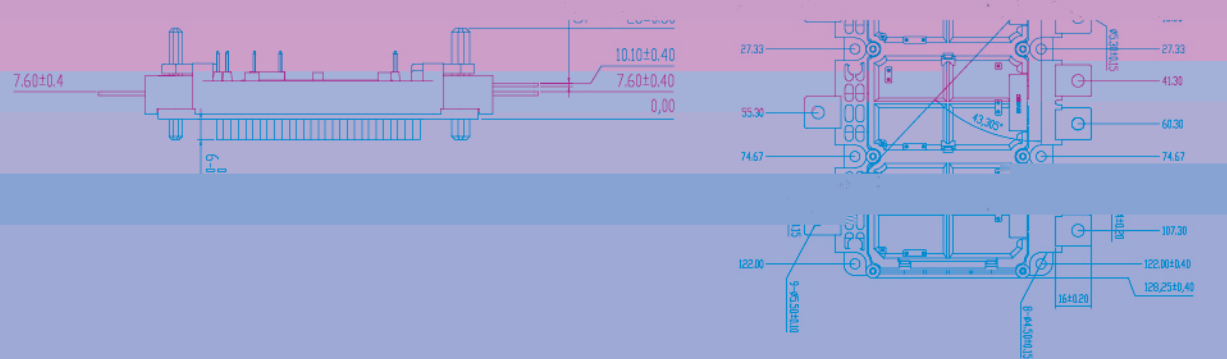
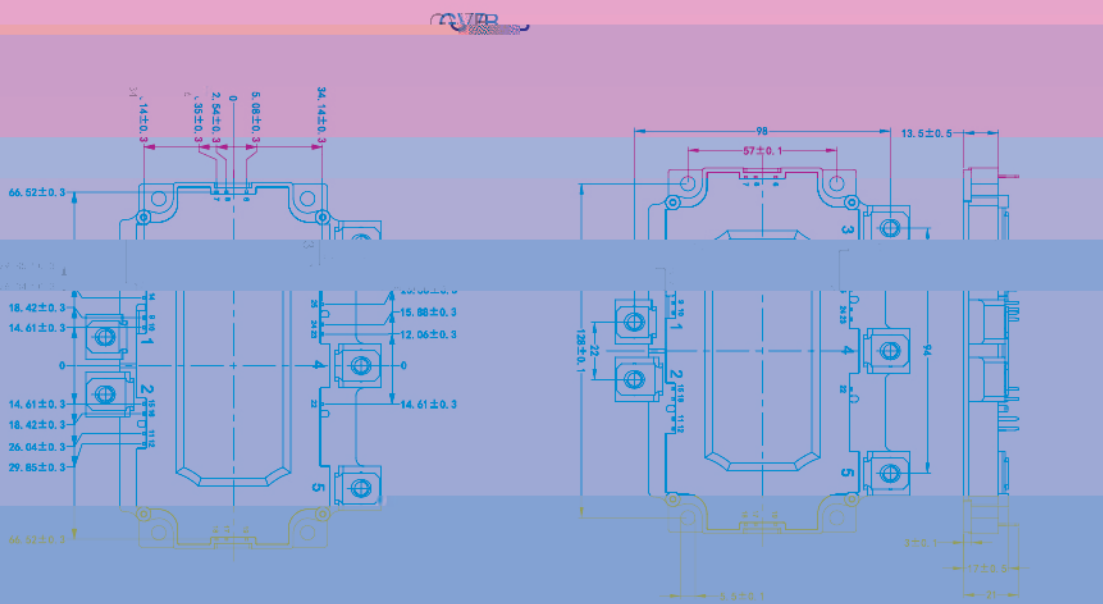
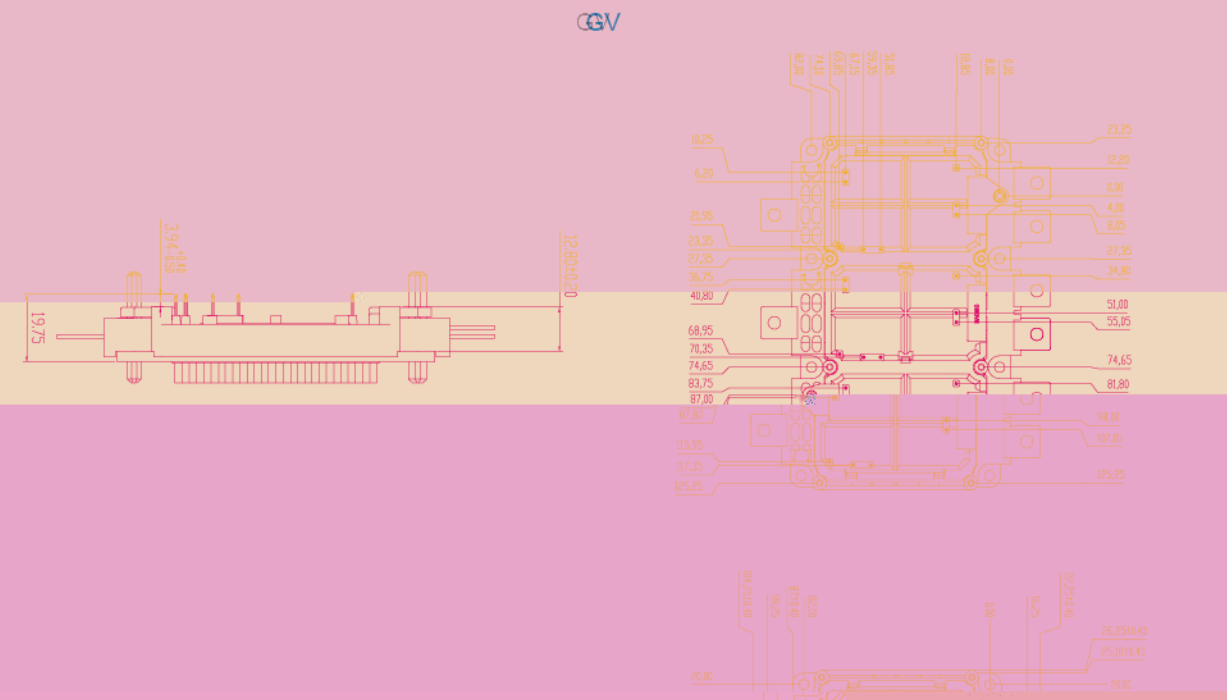
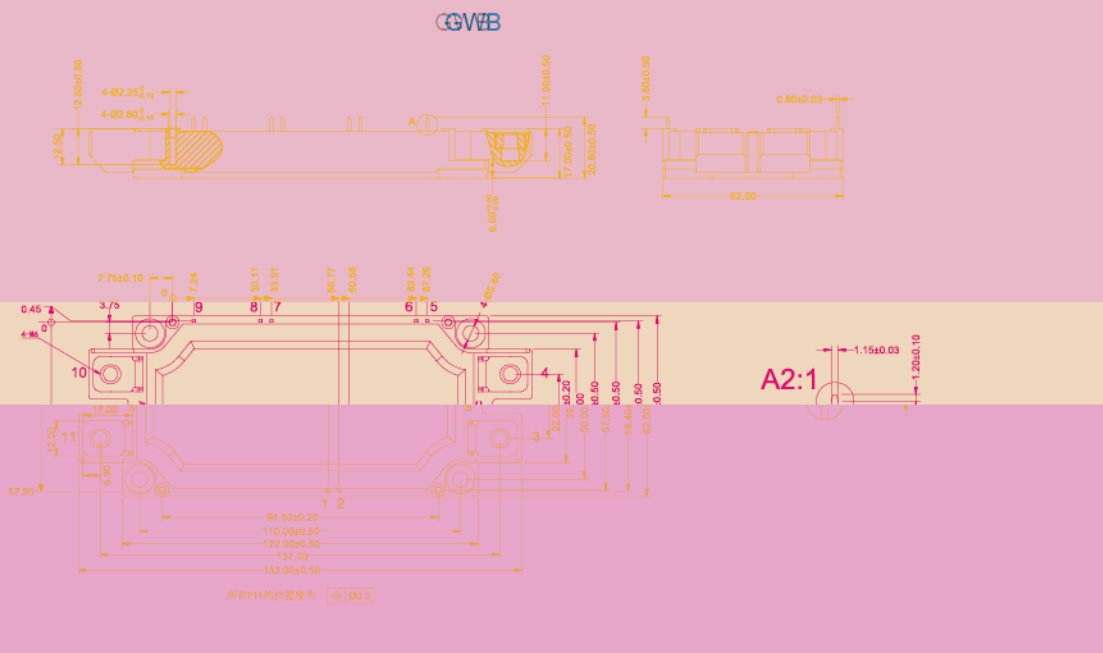


GW-XB

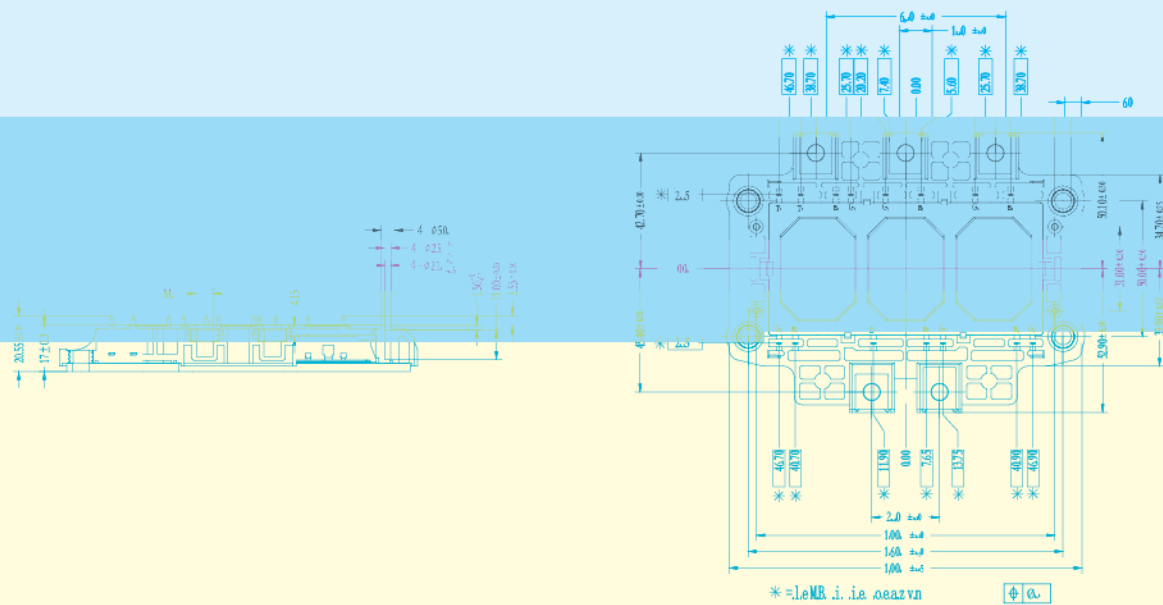


GW-HX

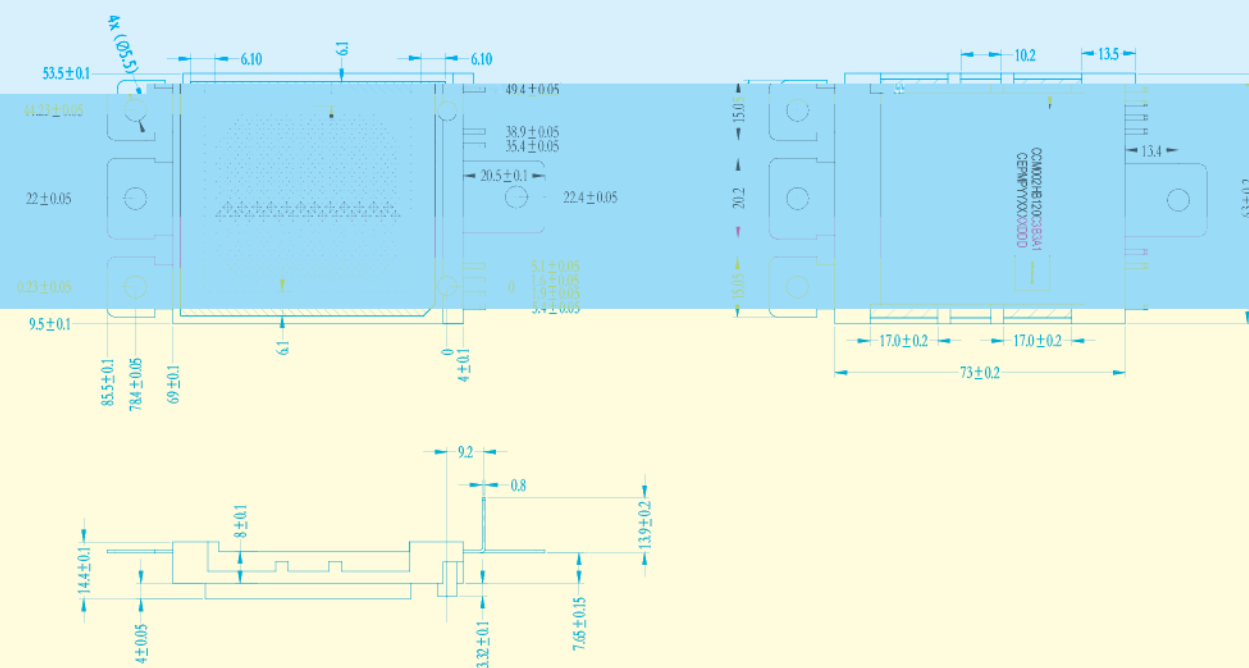




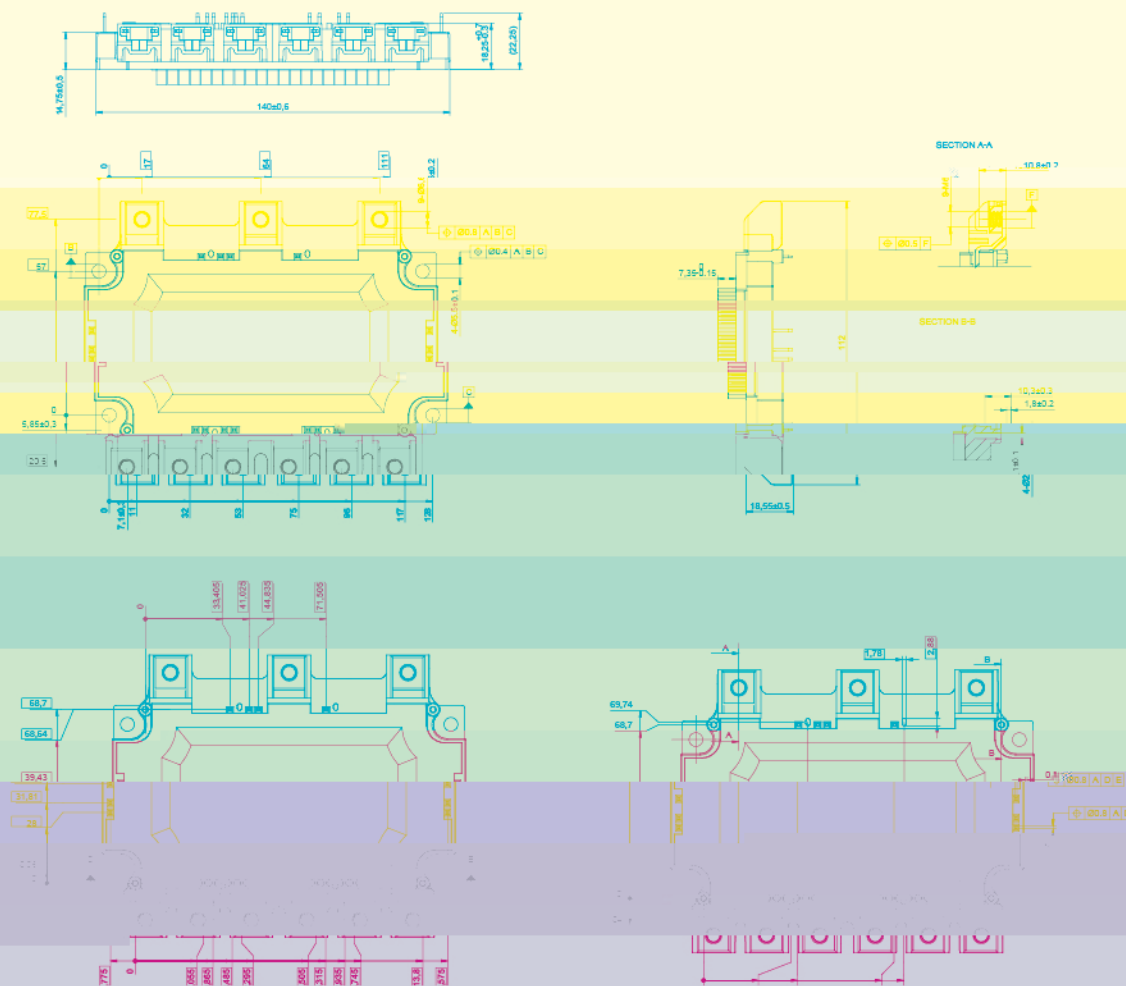
GVD



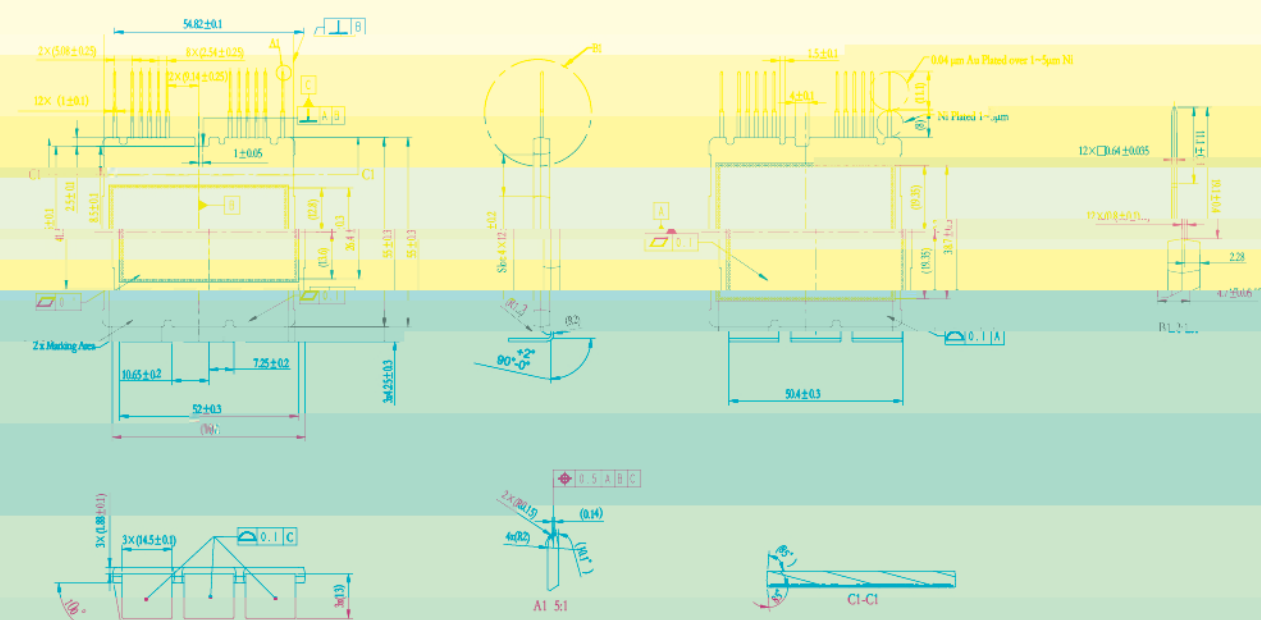
SDC



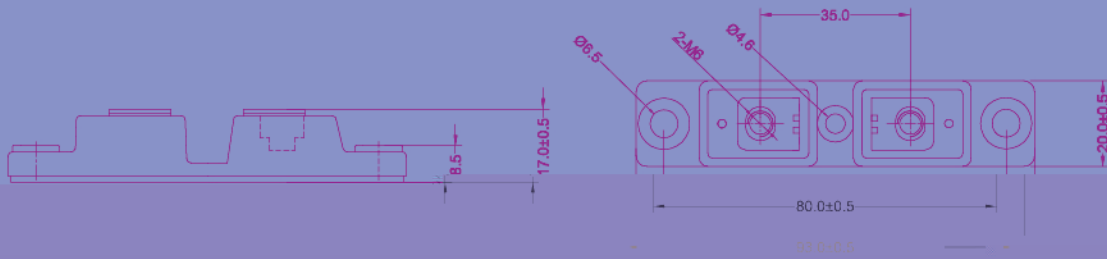
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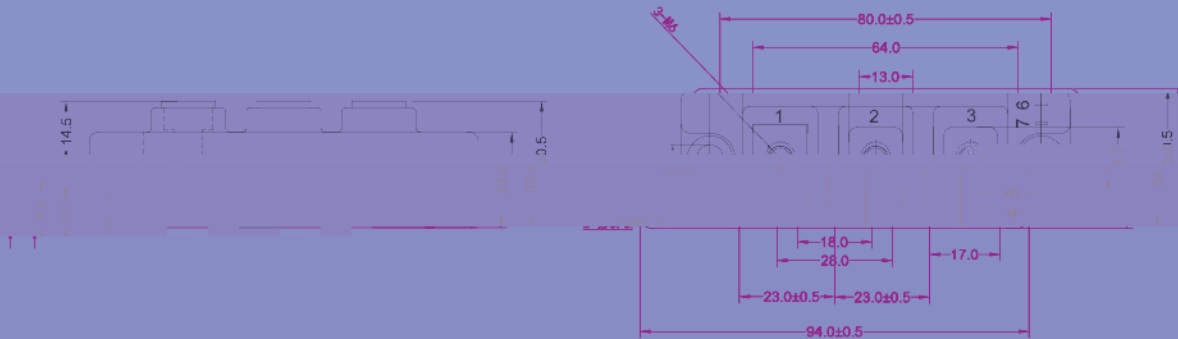
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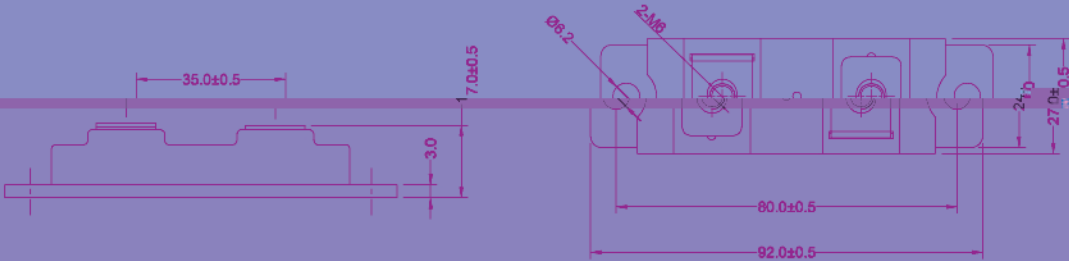
FZ



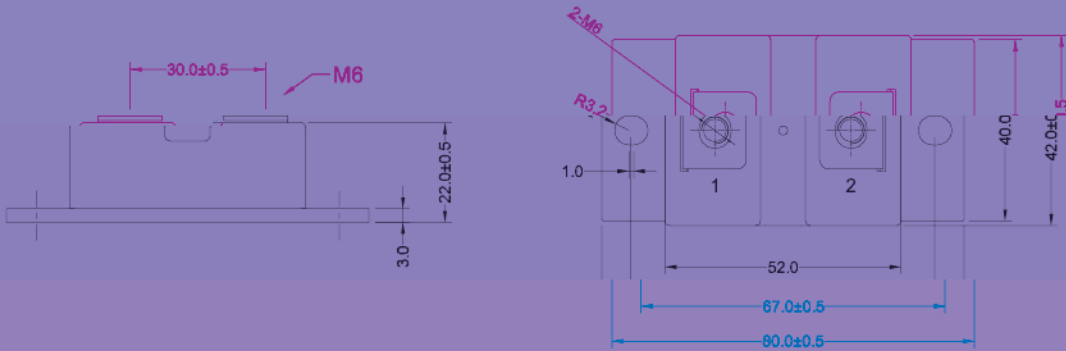
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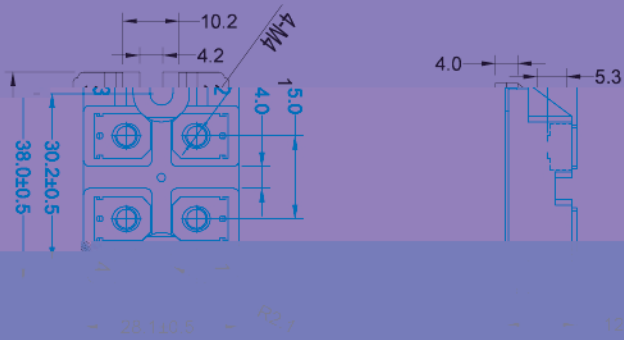
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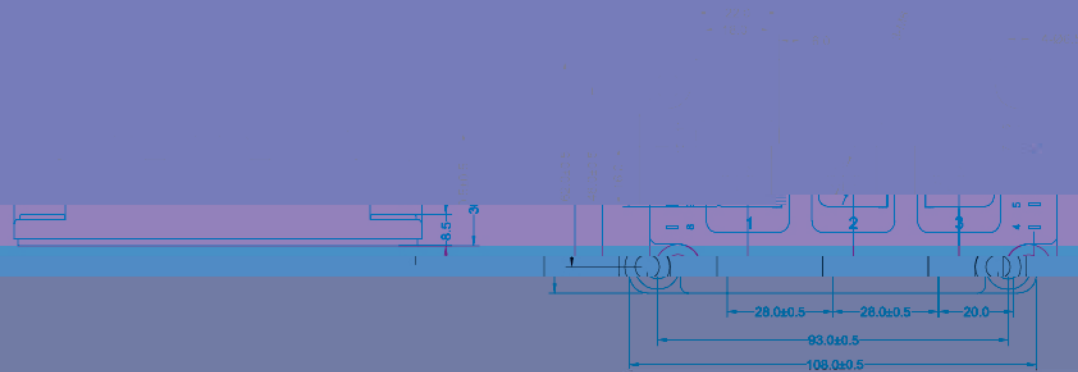
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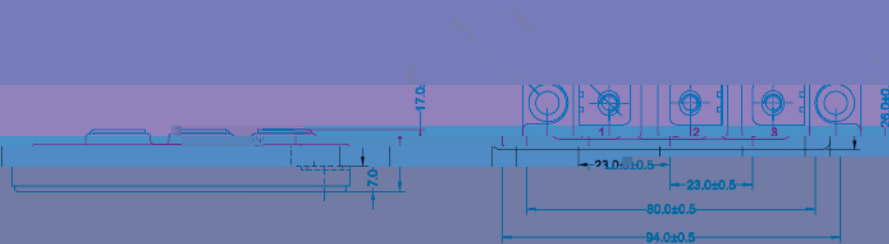
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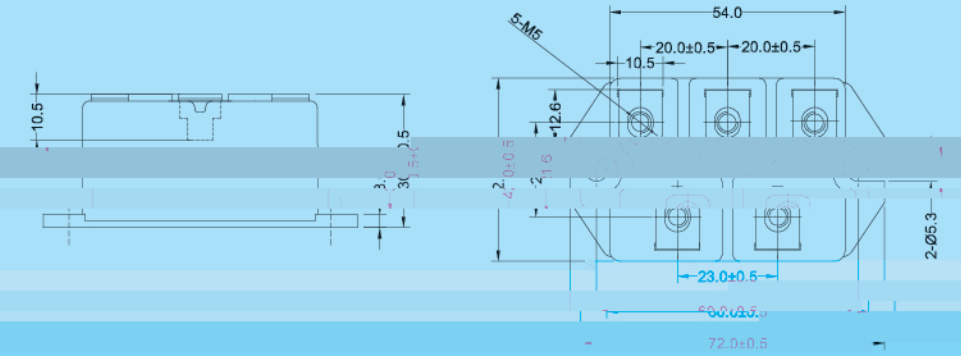
FDD



FN



DE



DEB

DF

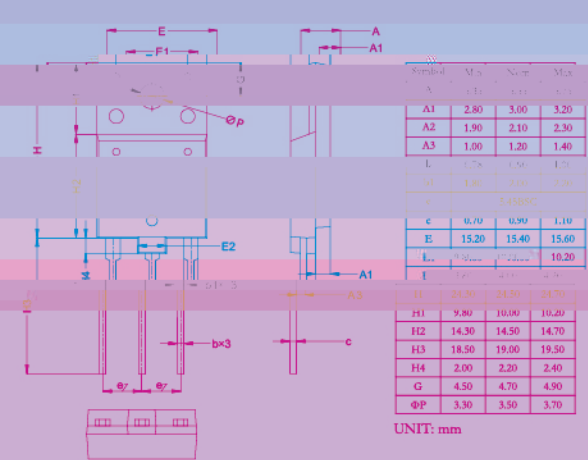
DFB

TO-3PF

TO-3PB-2L

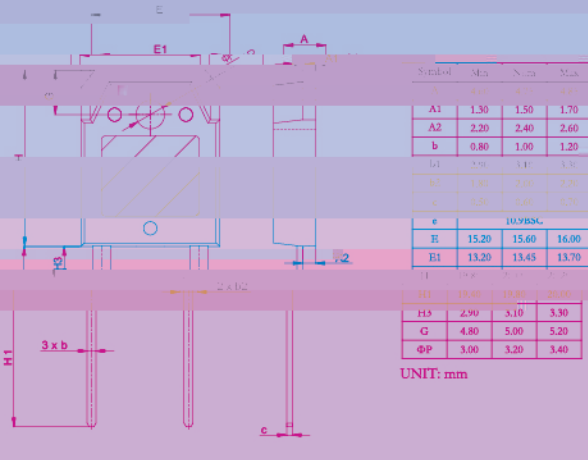
TO-220B-2L

TO-220C-2L



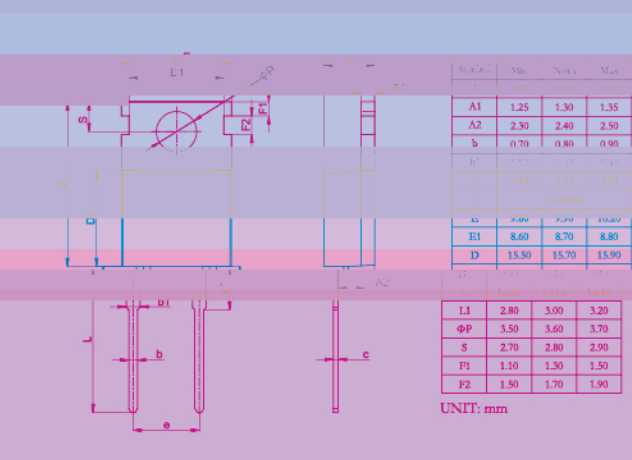
Symbol	Min	Nom	Max
A	4.15	4.55	4.95
A1	2.80	3.00	3.20
A2	1.90	2.10	2.30
A3	1.00	1.20	1.40
L	1.75	0.50	1.25
L1	1.00	2.00	2.00
L1	2.54BSC		
e	0.70	0.90	1.10
E	15.20	15.40	15.60
E1	13.20	13.40	13.60
H1	24.30	24.30	24.70
H2	9.80	10.00	10.20
H3	14.30	14.50	14.70
H4	18.50	19.00	19.50
H5	2.00	2.20	2.40
G	4.50	4.70	4.90
ΦP	3.30	3.50	3.70

UNIT: mm



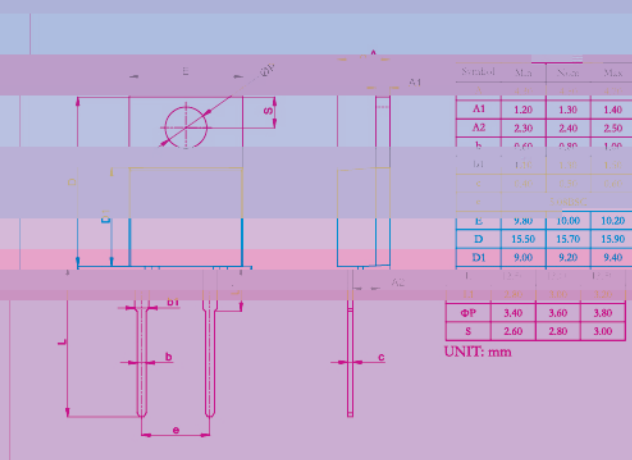
Symbol	Min	Nom	Max
A	4.15	4.55	4.95
A1	1.30	1.50	1.70
A2	2.20	2.40	2.60
b	0.80	1.00	1.20
b1	2.50	3.10	3.50
b2	1.80	2.00	2.20
c	0.20	0.40	0.70
e	10.9BSC		
E	15.20	15.60	16.00
E1	13.20	13.45	13.70
H1	19.00	19.80	20.00
H3	2.90	3.10	3.30
G	4.80	5.00	5.20
ΦP	3.00	3.20	3.40

UNIT: mm



Symbol	Min	Nom	Max
A	4.15	4.55	4.95
A1	1.25	1.30	1.35
A2	2.30	2.40	2.50
b	0.70	0.80	0.90
b1	1.10	1.20	1.30
b2	0.45	0.55	0.55
c	5.08BSC		
E	9.80	10.00	10.20
E1	8.60	8.70	8.80
D	15.50	15.70	15.90
L1	2.80	3.00	3.20
ΦP	3.50	3.60	3.70
S	2.70	2.80	2.90
P1	1.10	1.30	1.50
P2	1.50	1.70	1.90

UNIT: mm



Symbol	Min	Nom	Max
A	4.15	4.55	4.95
A1	1.20	1.30	1.40
A2	2.30	2.40	2.50
b	0.65	0.80	1.00
b1	1.10	1.30	1.40
b2	0.40	0.50	0.60
c	5.08BSC		
E	9.80	10.00	10.20
D	15.50	15.70	15.90
D1	9.00	9.20	9.40
L1	2.80	3.00	3.20
ΦP	3.40	3.60	3.80
S	2.60	2.80	3.00

UNIT: mm

TO-3PB-3L

TO-3PN-2L

TO-220B-3L

TO-220C



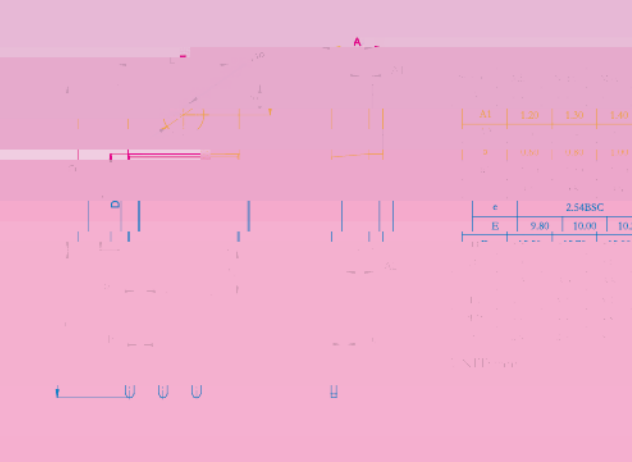
Symbol	Min	Nom	Max
A	4.15	4.55	4.95
A1	2.80	3.00	3.20
A2	1.90	2.10	2.30
A3	1.00	1.20	1.40
L	1.75	0.50	1.25
L1	1.00	2.00	2.00
L1	2.54BSC		
e	0.70	0.90	1.10
E	15.20	15.60	16.00
E1	13.20	13.40	13.60
H1	24.30	24.30	24.70
H2	9.80	10.00	10.20
H3	14.30	14.50	14.70
H4	18.50	19.00	19.50
H5	2.00	2.20	2.40
G	4.50	4.70	4.90
ΦP	3.30	3.50	3.70

UNIT: mm



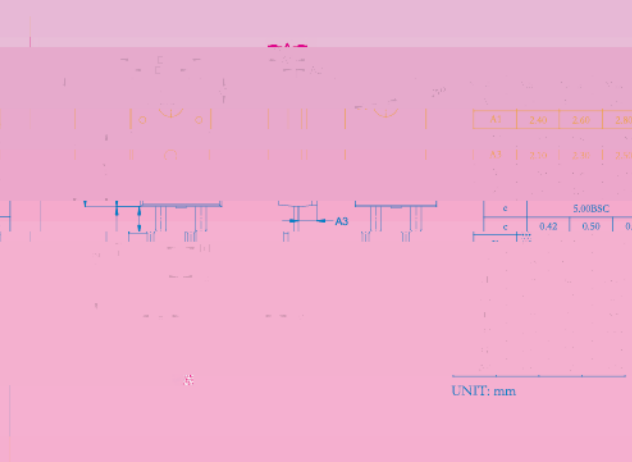
Symbol	Min	Nom	Max
A	4.15	4.55	4.95
A1	1.30	1.50	1.70
A2	2.20	2.40	2.60
b	0.80	1.00	1.20
b1	2.50	3.10	3.50
b2	1.80	2.00	2.20
c	0.20	0.40	0.70
e	10.9BSC		
E	15.20	15.60	16.00
E1	13.20	13.45	13.70
H1	19.00	19.80	20.00
H3	2.90	3.10	3.30
G	4.80	5.00	5.20
ΦP	3.00	3.20	3.40

UNIT: mm



Symbol	Min	Nom	Max
A	4.15	4.55	4.95
A1	1.20	1.30	1.40
A2	2.30	2.40	2.50
b	0.70	0.80	0.90
b1	1.10	1.20	1.30
b2	0.45	0.55	0.55
c	5.08BSC		
E	9.80	10.00	10.20
E1	8.60	8.70	8.80
D	15.50	15.70	15.90
L1	2.80	3.00	3.20
ΦP	3.50	3.60	3.70
S	2.70	2.80	2.90
P1	1.10	1.30	1.50
P2	1.50	1.70	1.90

UNIT: mm



Symbol	Min	Nom	Max
A	4.15	4.55	4.95
A1	2.40	2.60	2.80
A2	2.30	2.40	2.50
b	0.65	0.80	1.00
b1	1.10	1.30	1.40
b2	0.40	0.50	0.60
c	5.08BSC		
E	9.80	10.00	10.20
D	15.50	15.70	15.90
D1	9.00	9.20	9.40
L1	2.80	3.00	3.20
ΦP	3.40	3.60	3.80
S	2.60	2.80	3.00

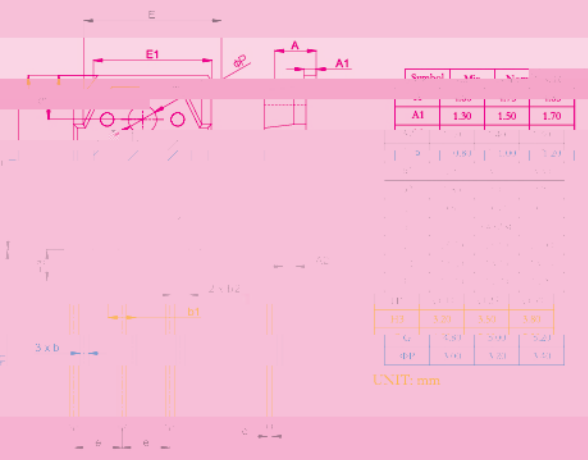
UNIT: mm

TO-3PN-3L

TO-220A-2L

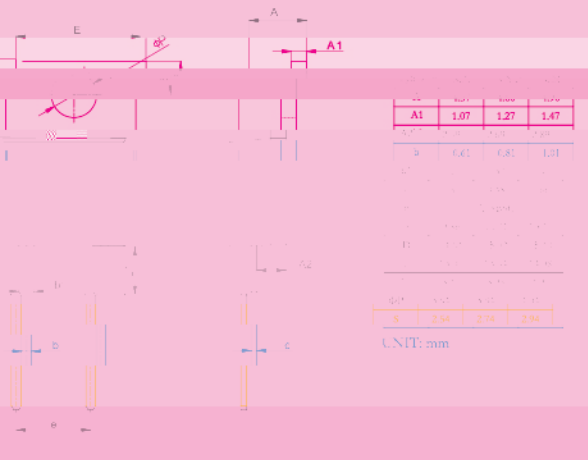
TO-247 Plus-3L

TO-247 Plus-4L



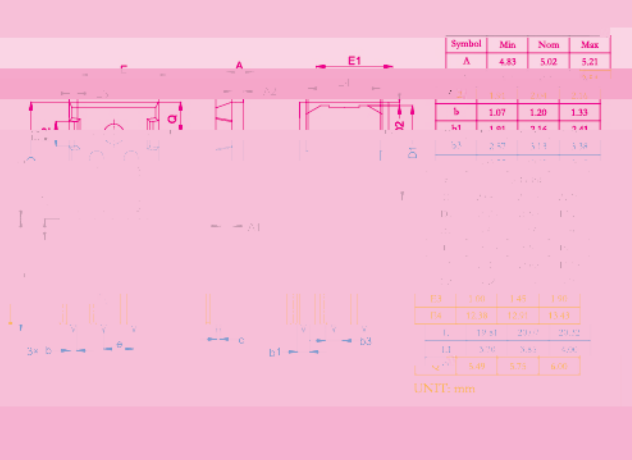
Symbol	Min	Nom	Max
A	4.15	4.55	4.95
A1	1.30	1.50	1.70
A2	2.20	2.40	2.60
b	0.80	1.00	1.20
b1	2.50	3.10	3.50
b2	1.80	2.00	2.20
c	0.20	0.40	0.70
e	10.9BSC		
E	15.20	15.60	16.00
E1	13.20	13.45	13.70
H1	19.00	19.80	20.00
H3	2.90	3.10	3.30
G	4.80	5.00	5.20
ΦP	3.00	3.20	3.40

UNIT: mm



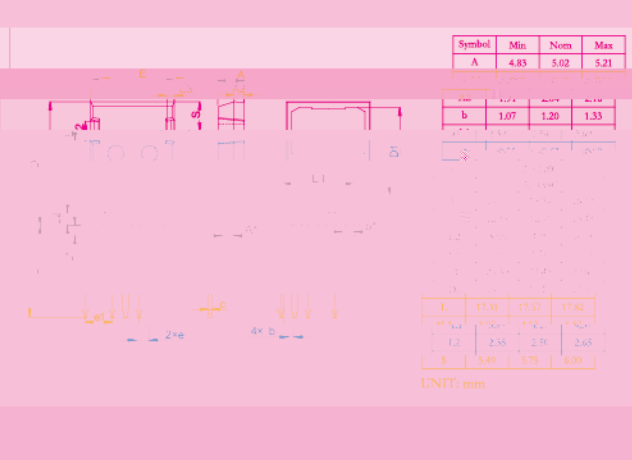
Symbol	Min	Nom	Max
A	4.15	4.55	4.95
A1	1.07	1.27	1.47
A2	2.20	2.40	2.60
b	0.60	0.80	1.00
b1	1.10	1.30	1.50
b2	0.40	0.50	0.60
c	0.20	0.40	0.70
e	10.9BSC		
E	15.20	15.60	16.00
E1	13.20	13.45	13.70
H1	19.00	19.80	20.00
H3	2.90	3.10	3.30
G	4.80	5.00	5.20
ΦP	3.00	3.20	3.40

UNIT: mm



Symbol	Min	Nom	Max
A	4.83	5.02	5.21
A1	1.07	1.20	1.33
A2	2.20	2.40	2.60
b	0.60	0.80	1.00
b1	1.10	1.30	1.50
b2	0.40	0.50	0.60
c	0.20	0.40	0.70
e	10.9BSC		
E	15.20	15.60	16.00
E1	13.20	13.45	13.70
H1	19.00	19.80	20.00
H3	2.90	3.10	3.30
G	4.80	5.00	5.20
ΦP	3.00	3.20	3.40

UNIT: mm

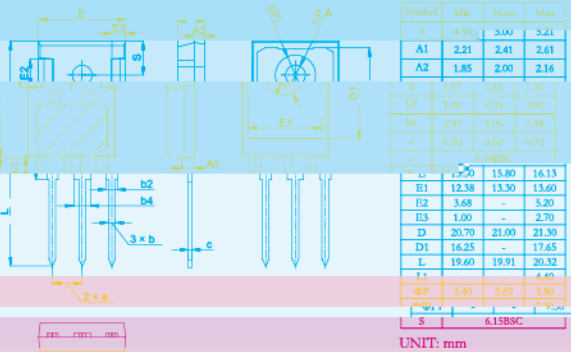
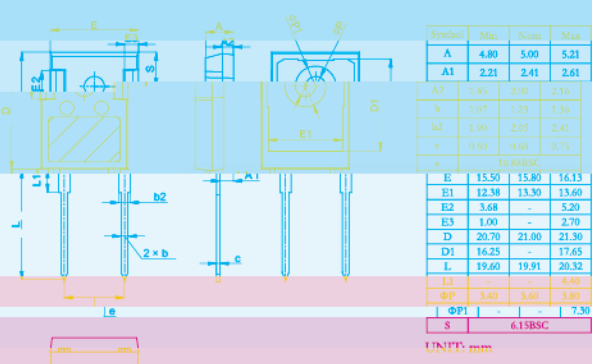


Symbol	Min	Nom	Max
A	4.83	5.02	5.21
A1	1.07	1.20	1.33
A2	2.20	2.40	2.60
b	0.60	0.80	1.00
b1	1.10	1.30	1.50
b2	0.40	0.50	0.60
c	0.20	0.40	0.70
e	10.9BSC		
E	15.20	15.60	16.00
E1	13.20	13.45	13.70
H1	19.00	19.80	20.00
H3	2.90	3.10	3.30
G	4.80	5.00	5.20
ΦP	3.00	3.20	3.40

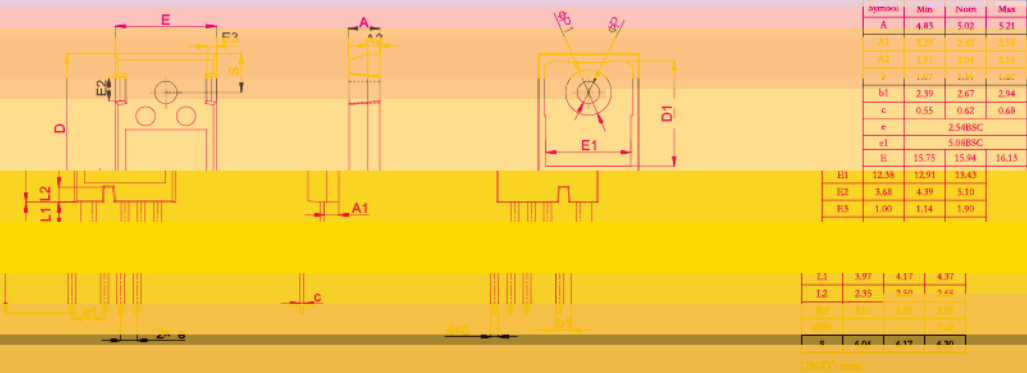
UNIT: mm

TO-247-2L

TO-247-3L



TO-247-4L



TO-247 LP-4L

