POWERING INDIA'S

NEXT GENERATION ELECTRONICS

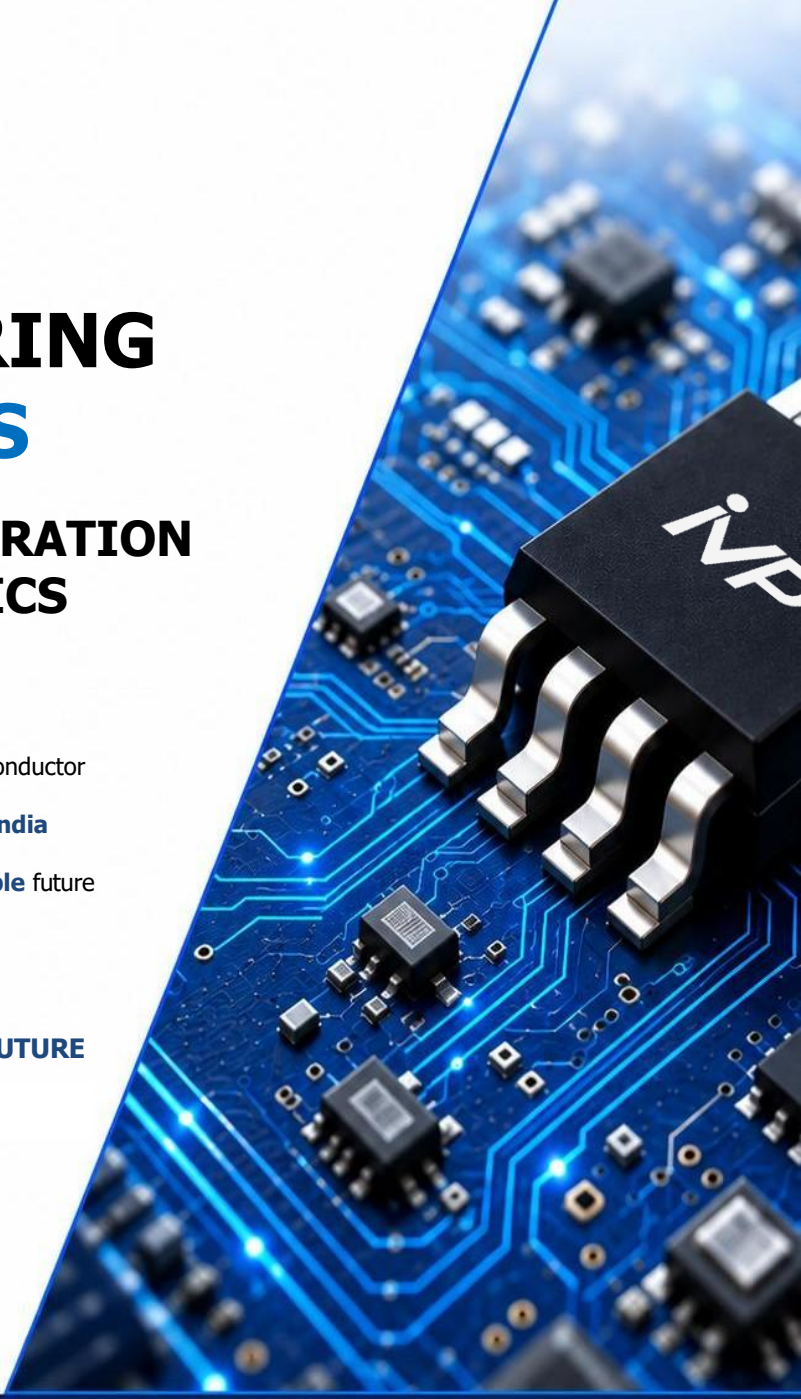
High- performance semiconductor

Solutions engineered in **India**

For a smarter, **sustainable** future

ENGINEERING INDIA'S **FUTURE**

POWERING THE **WORLD**



PRODUCT CATALOG

- **POWER SEMICONDUCTOR**
- **POWER MODULE**
- **CONNECTIVITY MODULES**

ABOUTTHE FOUNDER



With decades of experience at Texas Instruments, Fairchild, STATS ChipPac and UTAC, Raja Manickam built Tessolve into a ₹ 1,000+ crore semiconductor solutions leader, led TATA Electronics OSAT, and is now driving India's chip revolution with iVP Semiconductor.

As our CEO puts it: "The best partnerships create value for everyone. We solve local challenges with local expertise, and together with our partners, we help grow India's semiconductor industry – driving progress for all." At iVP, we're not just building semiconductors. We're building partnerships, progress, and a stronger India – powered by innovation, together.

PORTFOLIO OVERVIEW

Powering the Next Generation of Electronics

A growing portfolio of power semiconductors, intelligent power modules, system-level solutions and connectivity technologies engineered for demanding applications.

POWER SEMICONDUCTORS

Engineered for efficient switching, high power density and reliable thermal performance.

- **Power MOSFETs** – Low- and mid-voltage MOSFETs across multiple voltage classes, current ratings, RDS (on) levels, and package options
- **SiC MOSFETs** – High-voltage, high-efficiency devices for demanding power-conversion applications
- **IGBTs** – High-power devices for industrial, automotive, renewable-energy, and high-voltage applications
- **Power Management ICs –** Buck, Boost, Dual-Buck converter ICs and LDOs for efficient voltage regulation.

POWER MODULES AND SOLUTIONS

Integrated and application-ready solutions that simplify system design and accelerate development.

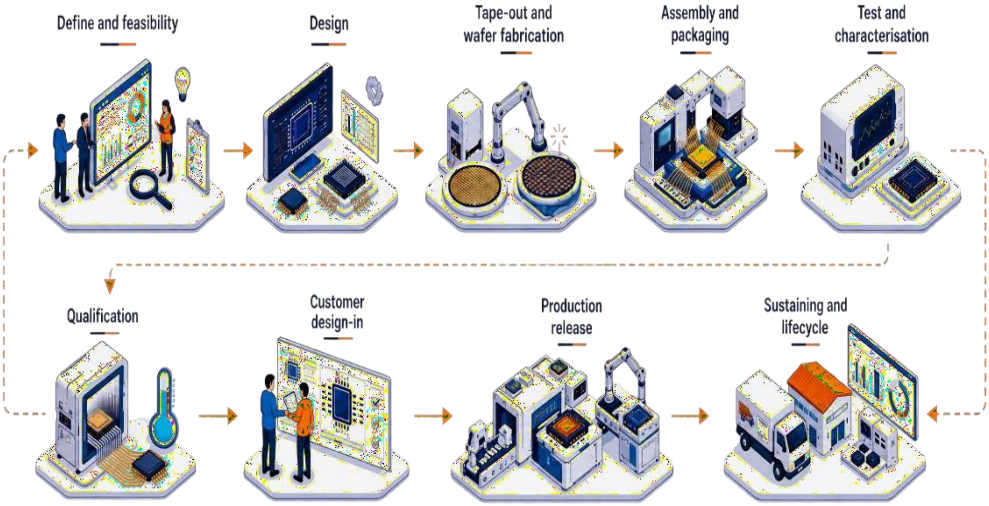
- **Intelligent Power Modules –** Integrated power devices and monitoring for high power density, thermal performance and simplified system design.
- **EV Traction Inverters –** Integrated inverter solutions for ACIM, BLDC and PMSM motor applications
- **Bi-Directional Battery Disconnect Switches** – Solid-state battery switching, isolation and protection for EV, CV, PV, BESS and industrial systems.
- **DC-DC Converter Modules –** Compact, high-power-density conversion modules with integrated protection
- **Inverter Reference Designs –** Application-focused platforms for evaluation and system development.

CONNECTIVITY SOLUTIONS

Reliable wireless connectivity for connected mobility, industrial IoT and smart devices.

- **4G LTE Cat 1bis** – Compact cellular connectivity with multiple LTE bands, flexible SIM options and D-FOTA.
- **LTE Cat 1 + GNSS + BLE** – Integrated cellular, positioning and Bluetooth connectivity for tracking, fleet and IoT applications.
- **Wi-Fi + BLE + 802.15.4** – Multi-protocol wireless connectivity with integrated processing for connected devices and IoT applications.

iVP PRODUCT JOURNEY



WHY CHOOSE IVP?

Local Inventory: Your supply is always within arm's reach.

Flexible Technical Support: Application support tailored to your local requirements.

BOM and Cost Ownership Optimization: Support to optimize your BOM and overall system costs.

INR Pricing: Local pricing with no forex exposure or import complexity.

APPLICATIONS × iVP SOLUTIONS

iVP Solutions	Mobility	Renewables	Industrial	Railways	Consumer Electronics
Power MOSFETs	●	●	●	●	●
SiC MOSFETs	●	●	●	●	○
IGBTs	●	●	●	●	●
DC-DC Converter ICs	●	●	●	○	●
DC-DC Converter Modules	●	●	●	●	○
LDOs	○	○	●	●	●
Intelligent Power Modules	●	●	●	●	○
EV Traction Inverters	●	—	—	●	—
Battery Disconnect Switches	●	●	●	—	—
Inverter Reference Designs	●	●	●	●	—
Connectivity Modules	●	●	●	●	●

● **Core application** | ○ **Applicable** | — **Not a primary focus**

APPLICATION FOCUS

- **Mobility:** 2/3-Wheelers • Commercial Vehicles • Passenger Vehicles • EV Charging
- **Renewables:** Utility Solar • Rooftop Solar • Residential Solar • Energy Storage
- **Industrial:** Automation • Motor Drives • Robotics • SMPS • IIoT
- **Railways:** Traction • Auxiliary Power • HVAC • Signalling
- **Consumer:** Chargers • Networking • Home Appliances • Smart Devices

ADVANCED SEMICONDUCTOR PACKAGING & TESTING

iVP Semiconductor is building an integrated Packaging and Testing ecosystem through qualified partners to strengthen its power semiconductor value chain. From wafer dicing and die attach through wire bonding, molding, trim & form, and automated electrical testing, this integrated approach enables faster product development, consistent quality, robust validation, and greater supply-chain control.

PACKAGING & TESTING CAPABILITIES

Packaging Capabilities	Testing & Validation Capabilities
Wafer Dicing	Wafer Probing & Die-Level Screening
Die Attach & Void Control	Electrical & Parametric Testing
Wire Bonding & Pull/Shear Monitoring	Burn-in & Stress Screening
Molding / Encapsulation	Thermal & Power Cycling
Trim & Form	Reliability & Lifetime Validation
Automated Final Assembly & Inspection	Automated Electrical Test & Quality Screening

ECOSYSTEM HIGHLIGHTS

- Integrated Packaging & Testing Ecosystem
- Controlled Cleanroom Environment
- End-to-End Product Validation
- Supports Power Semiconductor Portfolio
- High-Reliability Manufacturing
- Designed to Accelerate Product Qualification

POWER MOSFETS OVERVIEW

Engineered for Efficient Switching Thermal Performance & Reliability

iVP Power MOSFETs leverage advanced trench technology to deliver low on-resistance, fast switching, and reduced switching losses for efficient power conversion. Our portfolio spans a broad range of voltage and current ratings, with multiple package options to address diverse power-electronics requirements.

Designed for applications including motor drives, BLDC systems, solar inverters, battery management, DC-DC conversion, power supplies, automotive, and consumer electronics, iVP MOSFETs are engineered to deliver reliable performance across demanding operating conditions.

KEY TECHNOLOGY ADVANTAGES

- **Low $R_{DS(ON)}$:** Minimizes conduction losses for better efficiency and thermal performance.
- **Figure of Merit (FOM):** Enables low conduction and switching losses, faster switching, reduced paralleling, and higher system efficiency.
- **Thermal Performance:** $R_{\theta JC}$ characterization, along with SOA and transient thermal impedance data, supports robust thermal design.
- **Reliable and Rugged:** Built for demanding applications with robust, long-life construction.
- **RoHS Compliant & Halogen-Free:** Meets environmental standards for global compliance.
- **Broad Package Portfolio:** Multiple package options enable designers to optimize for power density, thermal performance, footprint, and application requirements

TARGET APPLICATIONS

- Motor Control | BLDC | Renewables | BMS | DC-DC | SMPS | Automotive | Consumer | Industrial

HOW TO CHOOSE THE RIGHT MOSFET

Select the appropriate MOSFET voltage class based on your application, then use the product table to narrow down suitable devices based on electrical and package requirements.

APPLICATION-BASED MOSFET GUIDE

Application	MOSFET			SiC MOSFET
	20–60 V	80–150 V	200–900 V	650–1200 V
2W / 3W traction inverter		•		
Battery management (BMS)	•	•		
On-board charger			•	•
EVSE / DC fast charging			•	•
Solar string inverter		•	•	•
Battery energy storage		•	•	•
Solar charge controller	•	•		
Industrial motor drive / VFD		•	•	•
Forklift / AGV traction		•		
Railway auxiliary converter		•	•	•
Industrial SMPS		•	•	•
BLDC fan / Appliance drive	•	•		
Fast charger / Adapter	•	•	•	
Smart meter / IIoT gateway	•	•		
Drone / Power tool	•	•		

Note: Application mapping is intended as a starting point for product selection. Final device selection should be based on the relevant datasheet, electrical operating conditions, thermal requirements, switching characteristics, and application-specific requirements.

SELECTED PACKAGE OUTLINES

Selected package options across the iVP MOSFET portfolio:



SOP-8L



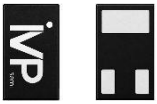
DFN2*3-6L



LFPAK56



TO-251-3L



FBP1006



PDFN5*6-Dual



PDFN3.3*3.3



PDFN5*6



SOP-8L Dual



SOT-23



TO-263-2L



TO-220-3L



SOT-523



TO-220F-3L



TO-252-2L



TO-247-3L



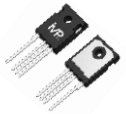
TO-247-3L



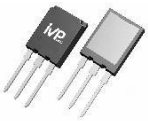
TOLT



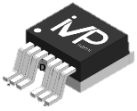
TOLL



TO-247-4L



TO-247-PLUS



TO-263-7L



SOT-223



SOT-323

S.No	iVP Part No	Polarity	V_{DSS}(V)	I_D(A)	$R_{DS(on)}$ Typ (mΩ)	Package
1	VPLMDF7001	N-ch	20	7.8	6	DFN2*3-6L (Dual)
2	VPLMDF7172	N-ch	20	1.4	190	FBP1006
3	VPLMST7089	N-ch	20	5.1	21	SOT-23
4	VPLMST7091	N-ch	20	3.2	50	SOT-23
5	VPLMST7093	N-ch	20	2.6	70	SOT-23
6	VPLMST7095	N-ch	20	1	190	SOT-23
7	VPLMST7096	N-ch	20	0.98	190	SOT-23
8	VPLMST7184	N-ch	20	0.63	200	SOT-723
9	VPLMST7185	N-ch	20	0.87	190	SOT-523
10	VPLMST7188	N-ch	20	1	220	SOT-563 (Dual)
11	VPLMST7189	N-ch	20	0.72	245	SOT-363 (Dual)
12	VPLMST7211	N-ch	20	0.8	210	SOT-323
13	VPLMDF7109	N-ch	25	400	0.38	LFPAK56
14	VPLMDF7110	N-ch	25	321	0.5	LFPAK56
15	VPLMBB7002	N-ch	30	218	2.1	TO-220-3L
16	VPLMBB7003	N-ch	30	133	2.6	TO-220-3L
17	VPLMDD7009	N-ch	30	218	1.7	TO-263-2L
18	VPLMDF7000	N-ch	30	254	0.85	PDFN5*6
19	VPLMDF7008	N-ch	30	71	2.6	PDFN5*6
20	VPLMDF7108	N-ch	30	28	10	PDFN3.3*3.3 (Dual)
21	VPLMDF7111	N-ch	30	400	0.47	LFPAK56
22	VPLMDF7112	N-ch	30	287	0.77	LFPAK56
23	VPLMDF7127	N-ch	30	70	3.2	PDFN3.3*3.3
24	VPLMDF7128	N-ch	30	71	3.5	PDFN3.3*3.3
25	VPLMDF7130	N-ch	30	50	6.2	PDFN3.3*3.3
26	VPLMDF7132	N-ch	30	38	8.3	PDFN3.3*3.3
27	VPLMDF7134	N-ch	30	16	15	PDFN3.3*3.3 (Dual)
28	VPLMDF7141	N-ch	30	70	3.4	PDFN5*6

S.No	iVP Part No	Polarity	V_{DSS}(V)	I_D(A)	$R_{DS(on)}$ Typ (mΩ)	Package
29	VPLMDF7142	N-ch	30	61.9	4.4	PDFN5*6
30	VPLMDF7144	N-ch	30	50	6.2	PDFN5*6
31	VPLMDF7146	N-ch	30	30	10	PDFN5*6 (Dual)
32	VPLMDF7176	N-ch	30	1	350	FBP1006
33	VPLMSP7004	N-ch	30	8	10	SOP-8L (Dual)
34	VPLMSP7006	N-ch	30	6	16	SOP-8L (Dual)
35	VPLMSP7007	N-ch	30	14.7	4.1	SOP-8L
36	VPLMSP7166	N-ch	30	9.4	8.5	SOP-8L
37	VPLMST7005	N-ch	30	4.7	26	SOT-23
38	VPLMST7075	N-ch	30	5.4	20	SOT-23
39	VPLMST7099	N-ch	30	4.9	26	SOT-23-3L
40	VPLMST7101	N-ch	30	0.83	350	SOT-23
41	VPLMST7194	N-ch	30	0.6	350	SOT-723
42	VPLMDF7010-Q	N-ch	40	46	6.7	PDFN3.3*3.3
43	VPLMDF7011	N-ch	40	190	1.1	PDFN5*6
44	VPLMDF7012	N-ch	40	290	0.8	PDFN5*6
45	VPLMDF7114	N-ch	40	276	1	LFPAK56
46	VPLMDF7115	N-ch	40	259	0.9	LFPAK56
47	VPLMDF7125	N-ch	40	318	0.7	LFPAK56
48	VPLMDF7136	N-ch	40	51	5.8	PDFN3.3*3.3
49	VPLMDF7137	N-ch	40	46	6.7	PDFN3.3*3.3
50	VPLMDF7138	N-ch	40	31	12.5	PDFN3.3*3.3
51	VPLMDF7147	N-ch	40	259	0.8	LFPAK56
52	VPLMDF7155	N-ch	40	55.2	5.8	PDFN5*6
53	VPLMDF7156	N-ch	40	50.1	6.8	PDFN5*6
54	VPLMDF7157	N-ch	40	53	6.7	PDFN5*6
55	VPLMDF7158	N-ch	40	32	12.5	PDFN5*6
56	VPMMPP7220-Q	N-ch	40	35	6.1	PDFN5*6 (Dual)

S.No	iVP Part No	Polarity	V_{DSS}(V)	I_D(A)	$R_{DS(on)}$ Typ (mΩ)	Package
57	VPLMDF7013	N-ch	45	269	0.7	LFPAK56
58	VPLMDF7113	N-ch	45	233	0.85	LFPAK56
59	VPLMDF7116	N-ch	45	358	0.55	LFPAK56
60	VPLMDF7117	N-ch	45	323	0.66	LFPAK56
61	VPLMDF7118	N-ch	45	234	0.9	LFPAK56
62	VPLMDF7119	N-ch	45	207	1.1	LFPAK56
63	VPLMDF7120	N-ch	45	181	1.25	LFPAK56
64	VPLMDF7148	N-ch	45	132	1.65	LFPAK56
65	VPLMDF7150	N-ch	45	120	2	LFPAK56
66	VPLMDF7159	N-ch	45	224	0.95	PDFN5*6
67	VPLMST7085	N-ch	50	0.26	1600	SOT-323
68	VPLMST7088	N-ch	50	0.31	1600	SOT-23
69	VPLMST7195	N-ch	50	0.33	1600	SOT-563 (Dual)
70	VPLMST7196	N-ch	50	0.26	1600	SOT-363 (Dual)
71	VPLMST7197	N-ch	50	0.28	1600	SOT-723
72	VPLMBB7019	N-ch	60	153	3.2	TO-220-3L
73	VPLMBB7024	N-ch	60	204	2.5	TO-220-3L
74	VPLMDD7180	N-ch	60	187	2.75	TO-263-2L
75	VPLMDF7014	N-ch	60	53	8.5	PDFN3.3*3.3
76	VPLMDF7015	N-ch	60	142	2.2	PDFN5*6
77	VPLMDF7016	N-ch	60	142	2.7	PDFN5*6
78	VPLMDF7017	N-ch	60	72	5.4	PDFN5*6
79	VPLMDF7018	N-ch	60	65	8.5	PDFN5*6
80	VPLMDF7022	N-ch	60	223	1.3	LFPAK56
81	VPLMDF7023	N-ch	60	226	1.2	LFPAK56
82	VPLMDF7025	N-ch	60	0.4	1600	FBP1006
83	VPLMDF7122	N-ch	60	259	1.25	LFPAK56
84	VPLMDF7139	N-ch	60	36	14	PDFN3.3*3.3

S.No	iVP Part No	Polarity	V_{DSS}(V)	I_D(A)	$R_{DS(on)}$ Typ (mΩ)	Package
85	VPLMDF7160	N-ch	60	236	1.35	PDFN5*6
86	VPLMDF7161	N-ch	60	71	5	PDFN5*6
87	VPLMDF7162	N-ch	60	21.6	33	PDFN5*6 (Dual)
88	VPLMDP7086	N-ch	60	42	14	TO-252-2L
89	VPLMDP7151	N-ch	60	114	3.1	TO-252-2L
90	VPLMDP7204	N-ch	60	22	30	TO-252-2L
91	VPLMDP7205	N-ch	60	9.8	88	TO-252-2L
92	VPLMSP7020	N-ch	60	4.5	33	SOP-8L
93	VPLMSP7027	N-ch	60	4.8	33	SOP-8L (Dual)
94	VPLMSP7079	N-ch	60	8.4	14	SOP-8L (Dual)
95	VPLMSP7170	N-ch	60	16	5.5	SOP-8L
96	VPLMSP7171	N-ch	60	12	8.5	SOP-8L
97	VPLMST7021	N-ch	60	0.31	1600	SOT-23
98	VPLMST7102	N-ch	60	2.3	88	SOT-23
99	VPLMST7121	N-ch	60	6.8	32	SOT-223
100	VPLMST7198	N-ch	60	0.33	1600	SOT-563 (Dual)
101	VPLMST7199	N-ch	60	0.26	1600	SOT-363 (Dual)
102	VPLMST7200	N-ch	60	0.31	1600	SOT-523
103	VPLMST7201	N-ch	60	0.31	1600	SOT-523
104	VPLMTL7181	N-ch	60	429	0.86	TOLL
105	VPLMBB7030	N-ch	80	132	3.5	TO-220-3L
106	VPLMBB7031	N-ch	80	141	3.1	TO-220-3L
107	VPLMDF7028	N-ch	80	68	6.4	PDFN3.3*3.3
108	VPLMDF7029	N-ch	80	83	6.1	PDFN5*6
109	VPLMDF7123	N-ch	80	210	1.8	LFPAK56
110	VPLMDF7124	N-ch	80	200	2	LFPAK56
111	VPLMDF7140	N-ch	80	51	7	PDFN3.3*3.3
112	VPLMDF7163	N-ch	80	142	2.8	PDFN5*6

S.No	iVP Part No	Polarity	V_{DSS}(V)	I_D(A)	$R_{DS(on)}$ Typ (mΩ)	Package
113	VPLMDF7164	N-ch	80	140	3.1	PDFN5*6
114	VPLMTL7032	N-ch	80	426	1	TOLL
115	VPSMBB7105	N-ch	80	120	2.8	TO-220-3L
116	VPLMBB7043	N-ch	100	122	4	TO-220-3L
117	VPLMBB7044	N-ch	100	122	4	TO-220-3L
118	VPLMBB7045	N-ch	100	122	5	TO-220-3L
119	VPLMBB7046	N-ch	100	122	5.5	TO-220-3L
120	VPLMBB7047	N-ch	100	91	7	TO-220-3L
121	VPLMBB7048	N-ch	100	90	8.5	TO-220-3L
122	VPLMBB7049	N-ch	100	64	8.9	TO-220-3L
123	VPLMBB7059	N-ch	100	102	5.3	TO-220-3L
124	VPLMBB7063	N-ch	100	243	1.8	TO-220-3L
125	VPLMBB7202	N-ch	100	27	36	TO-220-3L
126	VPLMDD7039	N-ch	100	245	2.7	TO-263-2L
127	VPLMDD7040	N-ch	100	205	3.8	TO-263-2L
128	VPLMDD7041	N-ch	100	122	3.9	TO-263-2L
129	VPLMDD7042	N-ch	100	122	5.5	TO-263-2L
130	VPLMDD7062	N-ch	100	362	1.4	TO-263-2L
131	VPLMDD7182	N-ch	100	403	1.3	TO-263-6L
132	VPLMDD7206	N-ch	100	204	2.6	TO-263-2L
133	VPLMDF7033	N-ch	100	49	7.6	PDFN3.3*3.3
134	VPLMDF7034	N-ch	100	43	8.5	PDFN3.3*3.3
135	VPLMDF7035	N-ch	100	31	13	PDFN3.3*3.3
136	VPLMDF7050	N-ch	100	140	3.5	PDFN5*6
137	VPLMDF7051	N-ch	100	142	3.6	PDFN5*6
138	VPLMDF7052	N-ch	100	103	4.5	PDFN5*6
139	VPLMDF7053	N-ch	100	122	5	PDFN5*6
140	VPLMDF7054	N-ch	100	91	6.5	PDFN5*6

S.No	iVP Part No	Polarity	V_{DSS}(V)	I_D(A)	$R_{DS(on)}$ Typ (mΩ)	Package
141	VPLMDF7055	N-ch	100	87	7.2	PDFN5*6
142	VPLMDF7056	N-ch	100	58	7.6	PDFN5*6
143	VPLMDF7057-Q	N-ch	100	63	7.6	PDFN5*6
144	VPLMDF7058	N-ch	100	53	8	PDFN5*6
145	VPLMDF7061	N-ch	100	41	12.5	PDFN5*6
146	VPLMDF7106	N-ch	100	177	2.4	LFPAK56
147	VPLMDF7107	N-ch	100	182	2.4	LFPAK56
148	VPLMDP7060	N-ch	100	78	8.1	TO-252-2L
149	VPLMDP7177	N-ch	100	48	12.5	TO-252-2L
150	VPLMDP7183	N-ch	100	78	8.3	TO-251-3L
151	VPLMDP7203	N-ch	100	19.2	82	TO-252-2L
152	VPLMDP7207	N-ch	100	87	7.3	TO-251-3L
153	VPLMDP7208	N-ch	100	83	8	TO-251-3L
154	VPLMFB7037	N-ch	100	47	8.5	TO-220F-3L
155	VPLMFB7038	N-ch	100	46	8.9	TO-220F-3L
156	VPLMPP7036	N-ch	100	411	1.4	TO-247-3L
157	VPLMPP7221	N-ch	100	325	1.5	TO-247-3L
158	VPLMSP7149	N-ch	100	7.5	13	SOP-8L
159	VPLMST7065	N-ch	100	1.3	260	SOT-23
160	VPLMTL7064	N-ch	100	434	1.05	TOLL
161	VPLMTL7212	N-ch	100	330	1.2	TOLL
162	VPPMDD7081	N-ch	100	297	1.3	TO-263-7L
163	VPPMDD7082	N-ch	100	212	2.2	TO-263-7L
164	VPPMTL7084-Q	N-ch	100	331	1.2	TOLL
165	VPPMTT7083	N-ch	100	301	1.33	TOLT
166	VPLMBB7068	N-ch	150	111	8.5	TO-220-3L
167	VPLMBB7173	N-ch	150	76	17.5	TO-220-3L
168	VPLMBB7174	N-ch	150	12	205	TO-220-3L

S.No	iVP Part No	Polarity	V_{DSS}(V)	I_D(A)	$R_{DS(on)}$ Typ (mΩ)	Package
169	VPLMDD7066	N-ch	150	149	8.5	TO-263-2L
170	VPLMDD7087	N-ch	150	80	17.5	TO-263-2L
171	VPLMDF7067	N-ch	150	65	16	PDFN5*6
172	VPLMDF7069	N-ch	150	108	8.2	PDFN5*6
173	VPLMDP7178	N-ch	150	7.7	215	TO-252-2L
174	VPLMDP7210	N-ch	150	12	205	TO-251-3L
175	VPLMST7209	N-ch	150	1.9	215	SOT-23-6L
176	VPMMBB7217	N-ch	200	95	10.4	TO-220-3L
177	VPMMPP7219	N-ch	200	95	10.4	TO-247-3L
178	VPMMPP7215	N-ch	600	50	66	TO-247-3L
179	VPMMPP7218	N-ch	600	60	38	TO-247-3L
180	VPMMFB7216	N-ch	650	35	79	TO-220FT-3L
181	VPSMBB7104	N-ch	650	36	91	TO-220-C
182	VPMMFB7213	N-ch	800	8	560	TO-220F-3L
183	VPMMFB7214	N-ch	800	17	250	TO-220F-3L
184	VPSMFB7179	N-ch	800	6	737	TO-220F-3L
185	VPMMDP7222	N-ch	900	5	1260	TO-252-2L
186	VPLMSP7152	N-ch, P-ch	60, -60	4.8, -3.6	33, 60	SOP-8L (Dual)
187	VPLMST7186	N-ch, P-ch	20, -20	1, -0.69	220, 500	SOT-563 (Dual)
188	VPLMST7187	N-ch, P-ch	20, -20	0.72, -0.53	245, 500	SOT-363 (Dual)
189	VPLMSP7153	N-ch, P-ch	30, -30	7.4, -4.7	16, 40	SOP-8L (Dual)
190	VPLMSP7165	P-ch	-100	-6	220	SOP-8L
191	VPLMDF7133	P-ch	-60	-24	34	PDFN3.3*3.3
192	VPLMST7073	P-ch	-60	-0.21	3550	SOT-23
193	VPLMST7074	P-ch	-60	-4	95	SOT-223
194	VPLMST7076	P-ch	-60	-2.4	95	SOT-23-3L
195	VPLMDP7072	P-ch	-40	-38	13.5	TO-252-2L
196	VPLMSP7154	P-ch	-40	-9.1	11	SOP-8L

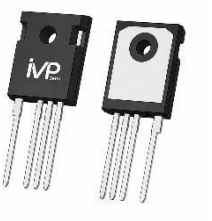
S.No	iVP Part No	Polarity	V_{DSS}(V)	I_D(A)	$R_{DS(on)}$ Typ (mΩ)	Package
197	VPLMDF7129	P-ch	-30	-59	5.5	PDFN3.3*3.3
198	VPLMDF7131	P-ch	-30	-51.8	8.6	PDFN3.3*3.3
199	VPLMDF7135	P-ch	-30	-29	19	PDFN3.3*3.3
200	VPLMDF7143	P-ch	-30	-67	6.5	PDFN5*6
201	VPLMDF7145	P-ch	-30	-70	9.3	PDFN5*6
202	VPLMSP7167	P-ch	-30	-7.3	15	SOP-8L (Dual)
203	VPLMSP7168	P-ch	-30	-3.5	40	SOP-8L (Dual)
204	VPLMSP7169	P-ch	-30	-8.4	12	SOP-8L
205	VPLMST7077	P-ch	-30	-4.2	40	SOT-23
206	VPLMST7078	P-ch	-30	-3.8	40	SOT-23
207	VPLMST7080	P-ch	-30	-3.4	50	SOT-23
208	VPLMST7100	P-ch	-30	-1.2	320	SOT-23
209	VPLMST7098	P-ch	-24	-4.8	44	SOT-23
210	VPLMDF7126	P-ch	-20	-68	6	PDFN3.3*3.3
211	VPLMDF7175	P-ch	-20	-0.85	530	FBP1006
212	VPLMST7070	P-ch	-20	-2.5	95	SOT-23
213	VPLMST7071	P-ch	-20	-4.2	32	SOT-23
214	VPLMST7090	P-ch	-20	-3.9	42	SOT-23
215	VPLMST7092	P-ch	-20	-2.9	64	SOT-23
216	VPLMST7094	P-ch	-20	-1.8	170	SOT-23
217	VPLMST7097	P-ch	-20	-0.64	482	SOT-23
218	VPLMST7190	P-ch	-20	-0.85	470	SOT-563 (Dual)
219	VPLMST7191	P-ch	-20	-0.53	490	SOT-363 (Dual)
220	VPLMST7192	P-ch	-20	-0.51	482	SOT-723
221	VPLMST7193	P-ch	-20	-0.56	482	SOT-523

SiC MOSFETs

High-Voltage Switching for High-Efficiency Power Conversion

KEY FEATURES

TO-247-4L



- 650 V and 1200 V voltage classes
- High current capability
- Low $R_{DS(on)}$
- High-voltage switching
- Power-dense package options
- Designed for demanding power-conversion applications

TARGET APPLICATIONS

- EV & E-Mobility | Solar Inverters | Energy Storage | Industrial Power Conversion | Railway | High-Power Systems | Telecom power systems

S.No	iVP Part No	Polarity	V_{DSS}(V)	I_D(A)	$R_{DS(ON)}$ Typ (mΩ)	Package
1	VPMSPP6002	N-ch	650	75	27	TO-247-4L
2	VPMSPP6003	N-ch	650	117	15	TO-247-4L
3	VPPSPP6001	N-ch	1200	133	14	TO-247-4L

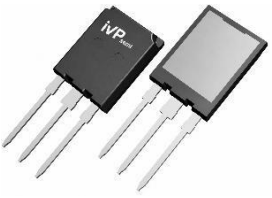
IGBT SOLUTIONS

High-Power Switching for Demanding Power Electronics

KEY FEATURES

- 650 V and 1200 V voltage classes
- High current capability
- Low $V_{CE(sat)}$ options
- High-power switching capability
- Multiple package options
- Short circuit rated for safety

TO-247-PLUS



TARGET APPLICATIONS

- Motor Drives | Solar Inverters | Industrial Power Conversion | Renewable Energy | EV Systems | Railway

S.No	iVP Part No	Polarity	Collector – Emitter Voltage V_{CE} [V]	Collector Current I_C [A]	$V_{CE(Sat)}$ [V]	Package
1	VPMIFB4000	N-ch	650	30	1.65	TO-220F
2	VPMIPP4002	N-ch	650	100	1.85	TO-247
3	VPMIPP4003	N-ch	650	80	1.8	TO-247
4	VPMIPP4001	N-ch	1200	50	2	TO-247
5	VPMIPP4004	N-ch	1200	150	1.8	TO-247-PLUS
6	VPMIPP4005	N-ch	1200	80	2.1	TO-247

DC–DC CONVERTERS OVERVIEW

Efficient Voltage Conversion Across Diverse Power Applications

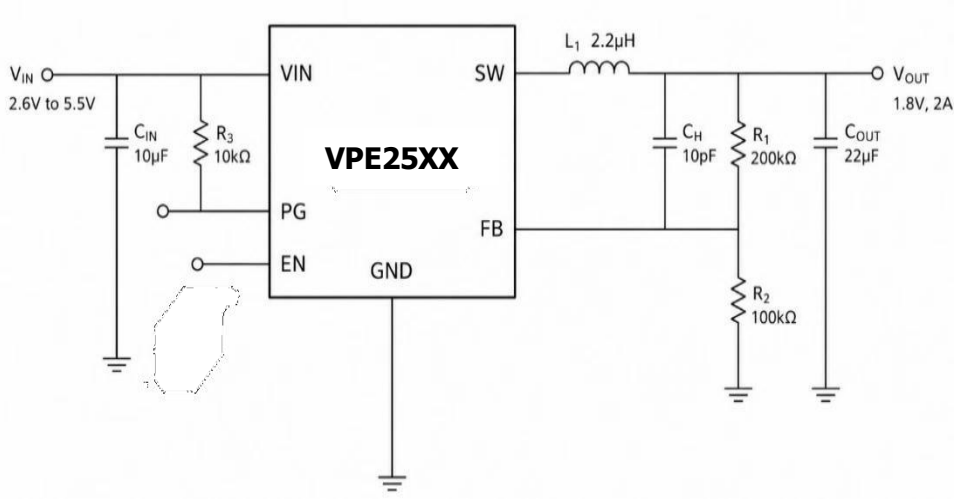
KEY FEATURES

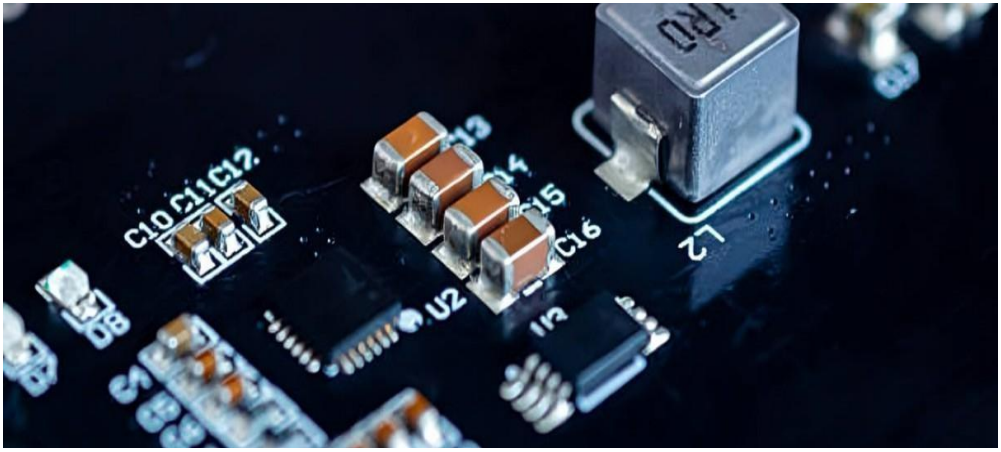
- **Wide Input Voltage Range:** Across diverse power sources for flexible system integration.
- **High Efficiency:** Minimizes power loss for cooler operation and extended battery runtime.
- **Current Mode Control:** Faster transient response and simplified loop compensation.
- **Short Circuit & Over-Voltage Protection:** Safeguards the system against fault conditions.

TARGET APPLICATIONS

- Automotive | Power Supplies | SSDs & Computing | Consumer Electronics | Battery Systems

TYPICAL APPLICATION CIRCUIT





S.No.	iVP Part No	DC-DC Topology	Input Voltage (V)		Output Voltage (V)	Output Current (A)	Switching Frequency	Maximum Efficiency (%)	Package
			Min	Max	Max				
1	VPE2501	Boost	2.6	5.5	Adjustable	2.5	1 MHz	92	SOT-23-6L
2	VPE2502	Boost	2.9	12	Adjustable	6	500 kHz	93	E-SOP-8L
3	VPE2503	Buck	4.5	36	Adjustable	3	2 MHz	93	E-SOP-8L, TDFN-10L
4	VPE2504	Buck	4.5	40	Adjustable	3	2 MHz	93	E-SOP-8L
5	VPE2506	Buck	2.6	5.5	Adjustable	3	1 MHz	95	SOT-23-6L, TDFN-8L
6	VPE2507	Buck, Dual	2.6	5.5	Adjustable	2	1 MHz	95	TDFN-10L
7	VPE2508	Buck	4.5	60	Adjustable	1.5	1.5 MHz	92	E-SOP-8L
8	VPE2509	Buck	4.5	40	Adjustable	6	2.1 MHz	93	E-SOP-8L
9	VPE2510	Buck	4.5	18	Adjustable	3	600 kHz	92	TSOT-23-6L
10	VPE2511	Buck	2.5	5.5	Adjustable	2.5	1 MHz	97	SOT-23-6L
11	VPE2512	Buck	2.5	5.5	Adjustable	3	1 MHz	97	TDFN-8L

Note: Maximum efficiency values are typical and may vary depending on operating conditions and application parameters.

LOW DROPOUT REGULATORS OVERVIEW

Compact Voltage Regulation for Power-Sensitive Designs

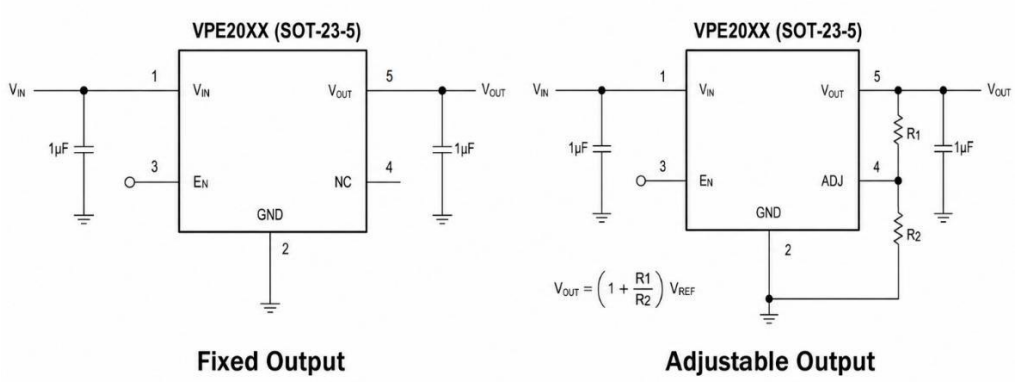
KEY FEATURES

- **Wide Input Voltage Range:** Supports diverse input voltages for flexible system integration.
- **High Output Current:** Supports a broad range of load requirements.
- **Broad Voltage Coverage:** Offers multiple output-voltage options for diverse application requirements.
- **Compact Package Options:** Available in space-efficient packages for space-constrained designs

TARGET APPLICATIONS

- Consumer Electronics | Embedded Systems | Industrial Electronics | Automotive Electronics | Portable Systems | Power Management | IIoT

TYPICAL APPLICATION CIRCUIT



Fixed Output

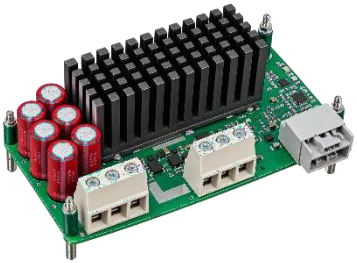
Adjustable Output

S.No.	iVP Part No	Input Voltage (V)		Max Output Voltage (V)	Output Current (A)	Package
		Min	Max			
1	VPE2013	2.7	40	39.22	0.15	SOT-23-5
2	VPE2015	2.7	20	19.22	0.15	SOT-23-5, SOT-89-3, SOT-23-3
3	VPE2016	3	32	30.5	0.15	E-SOP-8L, SOT-23-5
4	VPE2017	2.5	6.5	4.5	1.5	E-SOP-8L, SOT-223
5	VPE2018	1.7	5.5	4.2	0.3	SOT-23-5, uDFN-4, SOT-23-3, TDFN-6
6	VPE2019	1.7	5.5	3.3	0.3	uDFN-4
7	VPE2020	1.8	5.5	3.3	0.25	uDFN-4, SOT-23-5, SOT-23-3
8	VPE2021	1	5.5	3.3	2	E-SOP-8L
9	VPE2022	1	5.5	3.6	1	E-SOP-8L
10	VPE2023	1	5.5	3.3	2	E-SOP-8L
11	VPE2024/A	1	5.5	3.6	1	E-SOP-8L, SOT-23-6L
12	VPE2025/A	1	5.5	2.8	3	E-SOP-8L
13	VPE2026	1	5.5	2.8	3	E-SOP-8L
14	VPE2027	2.2	5.5	4.5	0.3	SOT-23-5
15	VPE2028	2.5	5.5	3.3	0.6	SOT-23-5, TDFN-6
16	VPE2029	2.5	5.5	5.23	0.6	SOT-23-5, SOT-23-6
17	VPE2030	1.7	5.5	3.3	0.3	SOT-23-5, uDFN-4
18	VPE2033	7	30	5	0.1	TO-92, SOT-23-3, SOT-89-3, SOP-8
19	VPE2034	2.7	40	5	0.25	SOT-23-3, SOT-23-5, SOT-89-3, TDFN3*3-8L
20	VPE2035	2.7	24	5	0.15	SOT-23-3, SOT-23-5, SOT-89-3, uDFN1*1-4
21	VPE2036	2.7	18	5	0.4	SOT-23-3, SOT-23-5, SOT-89-3, SOT-223
22	VPE2037	2.5	5.5	3.3	0.3	SOT-23-3, SOT-23-5, uDFN1*1-4

VPRDIN0001: PRAYAS
3 KW/48V, 3- PHASE INVERTER REFERENCE DESIGN

Key Features

- 3kW (48V, 63A)
- Top-Cool iVP VPPMTT7083 TOLT MOSFET for enhanced heat dissipation
- Low $R_{DS(ON)}$ enabling high efficiency operation.
- Integrated power rails (5 V, 7 V & 12 V) on board.
- PWM logic input from any microcontroller for seamless operation.
- Integrated phase current, DC bus Voltage & temperature sensing.
- Custom designed, high efficiency heatsink
- Designed and manufactured in India



S.NO	Technical Specifications for 3 kW/48V, 3- Phase Inverter Reference Design					
1	Operating Voltage	36	48	52	V	
2	Continuous Output Power	-	3	-	kW	T_{sink} = 100 °C, with > 3 m/s forced air cooling
3	Continuous Output Power	-	2	-	kW	T_{sink} = 100 °C, with natural Cooling
4	Peak Output Power	-	4	-	kW	T_{sink} = 100 °C for 1 min, with forced air cooling
5	Continuous RMS Phase Current	-	63	90	A	p. f. =0.9, m=0.8, with > 3 m/s forced air cooling
6	Switching Frequency	-		20	kHz	-
7	Peak Efficiency	-	98.4	-	%	Load = 1kW
8	Efficiency at rated load	-	96.7	-	%	Load = 3kW
9	Operating Temperature Range	-40	-	120	°C	-
10	PCB Material	FR4, 1.6 mm thickness, 2 oz. copper each layer, four layers				
11	PCB Dimensions	L × W × H			mm	170mm × 83mm × 1.6mm

ADVANCED INTELLIGENT POWER MODULES

MODULES



VALUE PROPOSITIONS

- **High Thermal Performance:** High power density and reduced size while maintaining efficiency.
- **High Thermal Capacitance:** Minimizes junction temperature ripples, enhancing reliability.
- **Low Package Resistance & Inductance:** Reduces losses for an improved performance
- **Patented Substrateless Packaging:** Eliminates the ceramic substrate to enhance performance, thermal stack performance, flexibility and scaling across current ratings.
- **Intelligent Power Modules:** Equipped with gate drivers and monitoring for current, voltage and temperature, simplifying design and manufacturing

TARGET APPLICATIONS

- EV Traction Drives | Chargers | DC-DC Converters | Solar Inverters | AC/DC Bi-Directional Solid State Relays | High-Frequency Converters |AI Data center

Explore our core advanced intelligent power module offerings →

EV TRACTION INVERTER

KEY FEATURES



- 5 kW (48V, 150A)
- Designed and Made in India
- Suitable for ACIM, BLDC, PMSM Integrated IPM + Controller Inside
- OC, OV, UV, OT, SC Protections, CAN Interface
- High Thermal impedance, low TJ ripple
- Long Operating Life

TECHNICAL SPECIFICATIONS

S.NO	Parameter	Min	Typ.	Max	Units	Conditions
1	Output Power	–	–	5	kW	48V, T_{sink} = 100°C
2	Operating Voltage	38	48	58	V	–
3	Continuous Current	_	_	250	A	T_{sink} = 25°C
4	Continuous Current	_	_	150	A	T_{sink} = 100°C
5	Peak Current * Note 1	_	_	350	A	T_{sink} = 25°C
6	Switching Frequency	_	16	20	kHz	–
7	Operating Temperature Range	-40	–	125	°C	–
8	Operating Cycles	–	–	TBD	–	–
9	Communication Protocols	–	CAN	–	–	–
10	Feedback	–	Hall Sensors, Encoder & Back EMF	–	–	–
11	Dimensions	L: 153	W: 80	H: 92	mm	–

* Limited by the pulse width, T_{sink}

BI-DIRECTIONAL BATTERY DISCONNECT SWITCH

KEY FEATURES

- Made in India 100V, 300A bidirectional solid-state battery disconnect switch
- Integrated Power + Controller; CAN, LIN, RS485 Interface
- Suitable for EV (Commercial and Passenger), BESS and Industrial Applications, Green Hydrogen



TECHNICAL SPECIFICATIONS

S.NO	Parameter	Min	Typ.	Max	Units	Conditions
1	Operating Voltage	38	48	100	V	
2	Continuous Current	–	–	300	A	T_{sink} = 25°C
3	Continuous Current	_	_	225	A	T_{sink} = 50°C
4	Peak Current* Note 1	–	–	1200	A	T_{sink} = 25°C
5	Precharge Current	3.8	4.8	5.8	A	T_{sink} = 25°C
6	Precharge Time	–	-	–	Sec	Depends on BMS Command
7	Turn-ON delay time	–	TBD	–	µs	VBAT = 48, T_{sink} = 25°C
8	Turn-ON time	–	TBD	–	µs	VBAT = 48, T_{sink} = 25°C
9	Turn-OFF delay time	–	TBD	–	µs	VBAT = 48, T_{sink} = 25°C
10	Turn-OFF time	–	TBD	–	µs	VBAT = 48, T_{sink} = 25°C
11	Operating Temperature Range	-40	–	125	°C	–
12	Operating Cycles	–	–	TBD	–	–
13	Communication Protocols		CAN RS 485	–	–	–
14	Dimensions	L:123	W: 108.6	H: 49.7	mm	–

* Limited by the pulse width, T_{SINK}

DC-DC CONVERTER MODULE

KEY FEATURES



- Compact, high-power-density DC-DC converter module
- High conversion efficiency up to 94%
- Low output ripple and noise (75 mV typ.)
- Integrated reverse polarity, under voltage, short-circuit and over-temperature protection
- Programmable current limit
- Rugged IP67 aluminum enclosure
- Designed for industrial and automotive applications

TECHNICAL SPECIFICATIONS

Parameter	30–60 V Model
Input Voltage	Extendable upto 90 V
Output Voltage Tunable	12–14 V DC
Output Current	10 A / 20 A
Operating Temperature	-40°C to +65°C
Input Reverse Voltage Protection	Yes

MECHANICAL AND COMPLIANCE

Parameter	10 A Model	20 A Model
Enclosure	Aluminum (White/Black), IP67	Aluminum (White/Black), IP67
Input Cable Size	2.5 mm²	2.5 mm²
Output Cable Size	2.5 mm²	4 mm²
Weight	280 g	470 g
Dimensions (H × W × D)	66 × 66 × 30 mm	83 × 83 × 38.5 mm

VAJRA – 4G LTE Cat 1bis Module

KEY FEATURES



- **3GPP Compliance:** Release 14 Cat.1bis (Single Antenna Mode)
- **Frequency Bands:** LTE-FDD: B1, B3, B5, B8, B28; LTE-TDD: B40, B41
- **Downlink:** Up to 10 Mbps; **Uplink:** Up to 5 Mbps
- **Bandwidth:** 1.4, 3, 5, 10, 15 and 20 MHz
- **Interfaces:** USB 2.0 High-Speed, UART, SPI, I²C, I²S and GPIO
- **SIM Support:** USIM and eSIM
- **Package:** Compact LCC + LGA (32.0 × 29.0 × 2.6 mm)

SOFTWARE FEATURES

- **Dual Mode Operation:** Hosted and Open CPU
- **Network Protocols:** TCP, UDP, TLS, DTLS, SSL, MQTT(s), CoAP, HTTP(S), PPP and RNDIS
- **Positioning:** Cellular-based Global Terrestrial Positioning and Indoor Positioning
- **Firmware Management:** Differential Firmware Over-the-Air (D-FOTA)

ELECTRICAL CHARACTERISTICS

Parameter	Specification
Power Supply	3.2 V – 3.8 V
I/O Voltage	1.8 V / 3.3 V

GENERAL SPECIFICATIONS

Parameter	Specification
Operating Temperature	-35°C to +75°C
Extended Temperature	-40°C to +80°C
Dimensions	32.0 × 29.0 × 2.6 mm
Weight	Approx. 8 g

GARUDA – LTE Cat 1bis + GNSS + BLE MODULE

KEY FEATURES



- **3GPP Compliance:** Release 14 Cat.1bis
- **Frequency Bands:** LTE-FDD (B1, B3, B5, B8, B28); LTE-TDD (B40, B41)
- **Downlink:** Up to 10 Mbps; **Uplink:** Up to 5 Mbps
- **Interfaces:** USB 2.0 High-Speed, UART, SPI, I²C, I²S & GPIO
- **SIM Support:** USIM and eSIM
- **Package:** Compact LCC + LGA (32 × 29 × 2.6 mm)

CONNECTIVITY FEATURES

- **Processor:** 64 MHz Arm® Cortex®-M4
- **GNSS:** GPS, NavIC, Galileo and BeiDou, GLONASS
- **Bluetooth:** BLE 5.0
- **Position Accuracy:** 2.5 m CEP
- **TTFF:** Hot 1 s / Cold 30 s

SOFTWARE FEATURES

- **Dual Mode Operation:** Hosted and Open CPU
- **Network Protocols:** TCP, UDP, TLS, DTLS, SSL, MQTT(s), CoAP, HTTP(S), PPP and RNDIS
- **Firmware Upgrade:** D-FOTA
- **Operating System:** FreeRTOS

ELECTRICAL CHARACTERISTICS

Parameter	Specification
Power Supply	3.2 V – 4.2 V
I/O Voltage	3.3 V

GENERAL SPECIFICATIONS

Parameter	Specification
Operating Temperature	-35°C to +75°C
Extended Temperature	-40°C to +80°C
Dimensions	32.0 × 29.0 × 2.6 mm
Weight	Approx. 11 g

WAYU – Wi-Fi 6 + BLE 5.4 + 802.15.4 MODULE

KEY FEATURES



- **Wireless Standards:** Wi-Fi 6, Bluetooth LE 5.4 and IEEE 802.15.4 (Thread & Zigbee-ready)
- **Wi-Fi**: IEEE 802.11 b/g/n/ax
- **Bluetooth:** Bluetooth Low Energy 5.4
- **Microcontroller:** 32-bit RISC-V processor (up to 325 MHz)
- **Memory:** 128 KB ROM, 4 KB eFuse, 484 KB on-chip SRAM, 16 KB D-Cache, 32 KB I-Cache, 4 MB NOR flash
- **Interfaces:** SPI, UART, I²C, I²S, PWM**,** ADC, DAC, CAN and GPIOs
- **Antenna Options:** U.FL and PCB antennas

SOFTWARE FEATURES

- **Operating Modes:** Standalone (Hostless) and Hosted
- **Protocol Support:** Wi-Fi, Bluetooth LE and IEEE 802.15.4
- **Development Support:** Open-source SDK and Visual Studio Code extension
- **Operating System:** FreeRTOS

ELECTRICAL CHARACTERISTICS

Parameter	Specification
Power Supply	2.97 V – 3.63 V
I/O Voltage	1.8 V / 3.3 V

GENERAL SPECIFICATIONS

Parameter	Specification
Package	LCC Module
Operating Temperature	-40°C to +85°C
Antenna Support	U.FL and PCB Antennas

LET'S POWER
THE FUTURE TOGETHER.

Partner with iVP Semiconductor to accelerate innovation in power electronics and intelligent connectivity



Explore Products, Datasheets & Reference Designs

Corporate Office
35, 6th main road, Raja Annamalaipuram,
Chennai 600028, Tamil Nadu, India

R&D Centre
Semicon Park, Plot No: 31 (P2, Phase II, Electronic City, Konappana Agrahara, Karnataka 560100

Phone No
+91 4424360027

Email
contact@ivpsemi.com

Disclaimer: Specifications and product information are subject to change without notice. Please refer to the latest product datasheet for the most current specifications, features, and qualification status.

ENGINEERING INDIA'S FUTURE.
POWERING THE WORLD.

www.ivpsemi.com