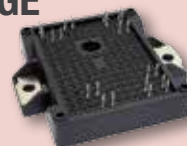




Vishay Intertechnology, Inc.

IGBT Power Modules

**EMIPAK-2B
PACKAGE**



**INT-A-PAK
(34 mm)
PACKAGE**



**HALF-
BRIDGE
AND 3-LEVELS**



**SOT-227
PACKAGE**



**DUAL INT-A-PAK
(62 mm)
PACKAGE**



**EMIPAK-1B
PACKAGE**





IGBT POWER MODULES

Focus Products

Single-Switch / Choppers IGBT Modules in SOT-227 and Dual INT-A-PAK Packages

Series	V_{CES} (V)	I_c at 90 °C (T_{case}) (A)	$V_{CE(on)}$ at $T_J = 25$ °C (V)	E_{tot} at $T_J = 125$ °C (mJ)	Package
 VS-GB90DA60U	600	90	2.40	1.76	SOT-227
UL-approved; electrically isolated baseplate; new generation – low thermal resistance single-switch NPT IGBT; HEXFRED® antiparallel diode with ultrasoft reverse recovery					
 VS-GT140DA60U	600	140	1.70	2.55	SOT-227
UL-approved; electrically isolated baseplate; new generation – low thermal resistance single-switch Trench IGBT; FRED Pt® antiparallel diode with ultrasoft reverse recovery					
 VS-GB90DA120U	1200	90	3.30	5.80	SOT-227
UL-approved; electrically isolated baseplate; new generation – low thermal resistance single-switch NPT IGBT; low Q_{rr} HEXFRED® antiparallel diode					
 VS-GT175DA120U	1200	175	1.73	15.70	SOT-227
UL-approved; electrically isolated baseplate; new generation – low thermal resistance single-switch Trench IGBT; HEXFRED® antiparallel diode with ultrasoft reverse recovery					
 VS-GB75LA60UF	600	70	2.31	1.07	SOT-227
UL-approved; electrically isolated baseplate; ultrafast high-side chopper IGBT; low-side topology available					
 VS-GT105LA120UX	1200	90	2.26	12.54	SOT-227
UL-approved; electrically isolated baseplate; Trench FS IGBT high-side chopper; low-side topology available					
 VS-GT120DA65U	650	120	1.71	2.37	SOT-227
UL-approved; electrically isolated baseplate; new generation – low thermal resistance single-switch Trench IGBT; FRED Pt® antiparallel ultrafast diode					
 VS-GP250SA60S	600	239	1.10	24.1	SOT-227
UL-approved; electrically isolated baseplate; new generation – low thermal resistance; Vishay proprietary ultra-low $V_{CE(on)}$ single-switch IGBT silicon inside					
 VS-GB300AH120N	1200	300 (at 80 °C)	1.90	58	Dual INT-A-PAK (62 mm)
Dual INT-A-PAK (62 mm) standard package; IGBT single switch with fast and soft reverse recovery antiparallel diode; 10 μ s short circuit capability; low-inductance case					
 VS-GB400AH120N	1200	400 (at 80 °C)	1.90	81	Dual INT-A-PAK (62 mm)
Dual INT-A-PAK (62 mm) standard package; IGBT single switch with fast and soft reverse recovery antiparallel diode; 10 μ s short circuit capability; low-inductance case					
 VS-GB600AH120N	1200	600 (at 80 °C)	1.90	105	Dual INT-A-PAK (62 mm)
Dual INT-A-PAK (62 mm) standard package; IGBT single switch with fast and soft reverse recovery antiparallel diode; 10 μ s short circuit capability; low-inductance case					

IGBT Modules for Solar and UPS (3-Levels / Double Interleaved Boost Converters)

Series	V_{CES} (V)	I_c at 80 °C (T_{case}) (A)	$V_{CE(on)}$ at $T_J = 25$ °C (V)	E_{tot} at $T_J = 125$ °C (mJ)	Pin Out	Package
 VS-ETF075Y60U	600	113	1.45	0.61	PressFit	EMIPAK-2B
3-levels half-bridge inverter stage; Trench short circuit rated IGBT technology; FRED Pt® clamping diodes; PressFit pin technology; exposed Al_2O_3 substrate with low thermal resistance						
 VS-ETF150Y65U	650	152 (at 60 °C)	1.72	2.1	PressFit	EMIPAK-2B
3-levels half-bridge inverter stage; Trench short circuit rated IGBT technology; FRED Pt® clamping diodes; PressFit pin technology; exposed Al_2O_3 substrate with low thermal resistance						
 VS-ETF150Y65N	650	171 (at 60 °C)	1.7	5.1	PressFit	EMIPAK-2B
3-levels half-bridge inverter stage; Trench short circuit rated IGBT technology; FRED Pt® clamping diodes; PressFit pin technology; exposed Al_2O_3 substrate with low thermal resistance						
 VS-GT300FD060N	600	288	1.72	6.3	Screwable	Dual INT-A-PAK low profile
3-levels half-bridge inverter stage; Trench short circuit rated IGBT technology; FRED Pt® antiparallel and clamping diodes; low stray internal inductances						



IGBT POWER MODULES

Focus Products

Half-Bridge IGBT Power Modules

Series	V_{CES} (V)	I_c at 90 °C (T_{case}) (A)	$V_{CE(on)}$ at $T_J = 25\text{ °C}$ (V)	E_{tot} at $T_J = 125\text{ °C}$ (mJ)	Package
 VS-GB75TP120U	1200	75	3.20	10	INT-A-PAK (34 mm)
INT-A-PAK (34 mm) standard package; Trench IGBT half bridge; 10 μ s short circuit capability; low inductance case; lower $V_{CE(on)}$ also available (VS-GB75TP120N)					
 VS-GT100TP120N	1200	100	1.90	13.7	INT-A-PAK (34 mm)
INT-A-PAK (34 mm) standard package; low $V_{CE(on)}$ Trench IGBT half bridge; 10 μ s short circuit capability; low-inductance case					
 VS-GB200TH120U	1200	200	3.10	38.2	Dual INT-A-PAK (62 mm)
Dual INT-A-PAK (62 mm) standard package; low switching losses IGBT half bridge; 10 μ s short circuit capability; low-inductance case; lower $V_{CE(on)}$ also available (VS-GB200TH120N)					
 VS-GB300TH120N	1200	300	2.00	67.4	Dual INT-A-PAK (62 mm)
Dual INT-A-PAK (62 mm) standard package; IGBT half bridge; 10 μ s short circuit capability; low-inductance case; lower switching losses (VS-GB300TH120U) available					
 VS-GP100TS60SFPBF	600	235	1.16	17.3	INT-A-PAK (34 mm)
Vishay proprietary ultra-low $V_{CE(on)}$ single-switch IGBT silicon inside					
 VS-GT200TP065N	650	166	1.90	6.82	Dual INT-A-PAK (62 mm)
INT-A-PAK (62 mm) standard package; Trench IGBT half bridge; 5 μ s short circuit capability; low Q_{rr} FRED Pt [®] anti parallel diode; low Q_{rr} and low switching energy					
 VS-GP300TD60S	600	600	1.3	62.4	Low-Profile Dual INT-A-PAK (62 mm)
Low-profile dual INT-A-PAK (62 mm, 17 mm height); Vishay proprietary low $V_{CE(on)}$ IGBT silicon; HEXFRED [®] antiparallel diode with ultrasoft reverse recovery; optimized for hard switching speed (DC to 1 kHz); low stray internal inductances					
 VS-GP400TD60S	600	525	1.3	184	Low-Profile Dual INT-A-PAK (62 mm)
Low-profile Dual INT-A-PAK (62 mm, 17 mm height); Vishay proprietary low $V_{CE(on)}$ IGBT silicon; HEXFRED [®] antiparallel diode with ultrasoft reverse recovery; optimized for hard switching speed (DC to 1 kHz); low stray internal inductances					

4-Pack IGBT Modules

Series	V_{CES} (V)	I_c at 90 °C (T_{case}) (A)	$V_{CE(on)}$ at $T_J = 25\text{ °C}$ (V)	E_{tot} at $T_J = 125\text{ °C}$ (mJ)	Package
 VS-GB100YG120NT	1200	87	3.52	8.8	ECONO3
UL-approved; electrically isolated baseplate; ultrafast 4-pack IGBT module; 10 μ s short circuit capability; operating frequencies up to 60 kHz					
 VS-GB150YG120NT	1200	124	3.9	14.94	ECONO3
UL-approved; electrically isolated baseplate; ultrafast 4-pack IGBT module; 10 μ s short circuit capability; operating frequencies up to 60 kHz					

STANDARD PACKAGE IGBT POWER MODULES – TAILORED FOR INDUSTRIAL AND RENEWABLE SEGMENTS



Advantages of Vishay IGBT Power Modules

- Industrial standard packages in isolated (3500 V at $t = 1$ s) and non-isolated versions
- Mains electric topology available to address industrial inverter requirements
- 600 V, 650 V, 1200 V IGBT silicon platforms (PT, NPT planar, and Trench FS) achieve the best efficiency in different applications
- Module connection available in solderable pin, PressFit, and screwable form according to power level requested

For the Following Applications

- Welding
- Uninterruptible power supplies (UPS)
- Solar inverters



Complete integrated solution for solar inverters and UPS



Extensive product portfolio for input rectification, primary inverter, secondary AC/DC inverter, and output rectification for high-frequency welding and plasma cutting



Useful Links

- IGBT power modules
www.vishay.com/modules/igbt-modules/
- IGBT – 3-levels
www.vishay.com/modules/igbt-modules/3Levels/
- Power modules selector guide
www.vishay.com/doc?49382



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