

# IGBT Power Modules

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



INT-A-PAK

**SOT-227**



SOT-227

**EMIPAK 1B**



EMIPAK 1B

**EMIPAK 2B**



EMIPAK 2B

**Half Bridge and 3-Level**



HALF BRIDGE and 3-LEVEL

**Dual INT-A-PAK (62 mm)**














DUAL INT-A-PAK







# 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 (A)	$V_{CE(on)}$ at $T_J = 25$ °C (V)	$E_{tot}$ at $T_J = 125$ °C (mJ)	Package
 <b>VS-GB90DA60U</b>	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					
 <b>VS-GT140DA60U</b>	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					
 <b>VS-GT80DA120U</b>	1200	94	1.90	4.7	SOT-227
UL-approved; electrically isolated baseplate; new generation – low thermal resistance single switch Trench IGBT; HEXFRED® antiparallel diode with ultrasoft reverse recovery					
 <b>VS-GB90DA120U</b>	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					
 <b>VS-GT100DA120UF</b>	1200	123	1.93	12.60	SOT-227
UL-approved; electrically isolated baseplate; new generation – ultrafast TFS IGBT					
 <b>VS-GT180DA120U</b>	1200	185	1.55	16.60	SOT-227
UL-approved; electrically isolated baseplate; new generation – low thermal resistance single switch Trench IGBT; HEXFRED® antiparallel diode with ultrasoft reverse recovery					
 <b>VS-GB75LA60UF</b>	600	70	2.31	1.07	SOT-227
UL-approved; electrically isolated baseplate; ultrafast high side chopper IGBT; low side topology available					
 <b>VS-GT120DA65U</b>	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					
 <b>VS-GB300AH120N</b>	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 $\mu$ s short circuit capability; low inductance case					
 <b>VS-GB400AH120N</b>	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 $\mu$ s short circuit capability; low inductance case					
 <b>VS-GB600AH120N</b>	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 $\mu$ s short circuit capability; low inductance case					

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

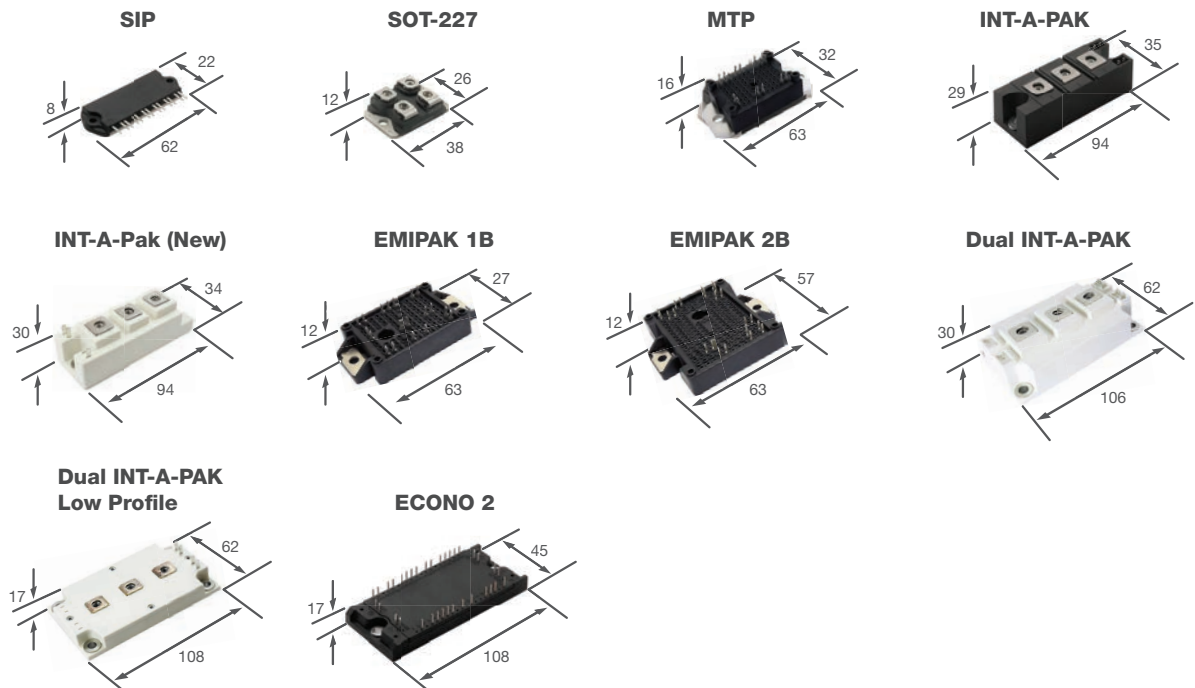
Series	$V_{CES}$ (V)	$I_c$ at 80 °C (A)	$V_{CE(on)}$ at $T_J = 25$ °C (V)	$E_{tot}$ at $T_J = 125$ °C (mJ)	Pin Out	Package
 <b>VS-ETF075Y60U</b>	600	113	1.45	0.61	PressFit	EMIPAK 2B
3-level half bridge inverter stage; Trench short circuit rated IGBT technology; FRED Pt® clamping diodes; PressFit pin technology; exposed $Al_2O_3$ substrate with low thermal resistance						
 <b>VS-ETF150Y65U</b>	650	152 (at 60 °C)	1.72	2.1	PressFit	EMIPAK 2B
3-level 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						
 <b>VS-ETF150Y65N</b>	650	171 (at 60 °C)	1.7	5.1	PressFit	EMIPAK 2B
3-level 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						
 <b>VS-GT300FD060N</b>	600	288	1.72	6.3	Screwable	Dual INT-A-PAK low profile
3-level 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 (A)	$V_{CE(on)}$ at $T_J = 25$ °C (V)	$E_{tot}$ at $T_J = 125$ °C (mJ)	Package	
 <b>VS-GB75TP120U</b> INT-A-PAK (34 mm) standard package; Trench IGBT half bridge; 10 $\mu$ s short circuit capability; low inductance case; lower $V_{CE(on)}$ also available (VS-GB75TP120N)	1200	75	3.20	10	INT-A-PAK (34 mm)	
 <b>VS-GB200TH120U</b> Dual INT-A-PAK (62 mm) standard package; low switching losses IGBT half bridge; 10 $\mu$ s short circuit capability; low inductance case; lower $V_{CE(on)}$ also available (VS-GB200TH120N)	1200	200	3.10	38.2	Dual INT-A-PAK (62 mm)	
 <b>VS-GB300TH120N</b> Dual INT-A-PAK (62 mm) standard package; IGBT half bridge; 10 $\mu$ s short circuit capability; low inductance case; lower switching losses (VS-GB300TH120U) available	1200	300	2.00	67.4	Dual INT-A-PAK (62 mm)	
 <b>VS-GT200TP065N</b> INT-A-PAK (62 mm) standard package; Trench IGBT half bridge; 5 $\mu$ s short circuit capability; low $Q_{rr}$ , FRED Pt <sup>®</sup> antiparallel diode; low $Q_{rr}$ and low switching energy	650	166	1.90	6.82	Dual INT-A-PAK (62 mm)	

## Package Dimensions (in millimeters)



# 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 forms according to power level requested

## For the Following Applications

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



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



Complete integrated solution for solar inverters and UPS

## Useful Links

- IGBT Power Modules  
[www.vishay.com/modules/igbt-modules/](http://www.vishay.com/modules/igbt-modules/)
- IGBT – 3-Level  
[www.vishay.com/modules/igbt-modules/3Level/](http://www.vishay.com/modules/igbt-modules/3Level/)
- Power Modules Selector Guide  
[www.vishay.com/doc?49382](http://www.vishay.com/doc?49382)



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