

IGBTs

Selection guide



September 2009

Low drop IGBTs (switching frequency up to 1 kHz)

Part number	Voltage V_{CES} (V)	Package	Current I_C at $T_C = 100\text{ }^\circ\text{C}$ (A)	On voltage at $T_C = 125\text{ }^\circ\text{C}$, $V_{GE} = 15\text{ V}$		Anti-parallel diode	
				$V_{CE(sat)}$ (V)	I_C (A)		
STGD3NB60SDT4	600	DPAK	3	1.1	3	Y	
STGD7NB60ST4			7	1.1	7		
STGD3NB60SD-1		IPAK	3	1.1	3	Y	
STGB3NB60SDT4		D ² PAK	3	1.1	3	Y	
STGB10NB60ST4			10	1.25	10		
STGF7NB60SL		TO-220FP	7	1.1 ¹	7		
STGP10NB60SFP			7	1.25	10		
STGF10NB60SD			7	1.25	10	Y	
STGF20NB60S			13	1.2	20		
STGP10NB60S		TO-220	10	1.25	10		
STGP10NB60SD			10	1.25	10	Y	
STGW35NB60SD		TO-247	35	1.2	20	Y	
STGE200NB60S		ISOTOP	150	1.2	150		
STGD5NB120SZT4		1200	DPAK	5	1.2	5	
STGD5NB120SZ-1			IPAK	5	1.2	5	
STGD7NB120S-1	7			1.7	10		

1. $V_{GE} = 4.5\text{ V}$

Fast IGBTs (switching frequency up to 10 kHz)

Part number	Voltage V_{CES} (V)	Package	Current I_C at $T_C = 100\text{ }^\circ\text{C}$ (A)	On voltage at $T_C = 125\text{ }^\circ\text{C}$, $V_{GE} = 15\text{ V}$		Anti-parallel diode
				$V_{CE(sat)}$ (V)	I_C (A)	
STGP100N30	600	TO-220	45	2.6	100	
STGD10NC60ST4		DPAK	10	1.3	5	
STGD10NC60SDT4			10	1.3	5	Y
STGF10NC60SD		TO-220FP	5	1.3	5	Y
STGF30NC60S			11	1.4	20	
STGB19NC60ST4		D ² PAK	20	1.35	12	
STGP10NC60S		TO-220	11	1.3	5	
STGP19NC60S			20	1.35	12	
STGP19NC60SD			20	1.35	12	Y
STGP30NC60S			35	1.4	20	

Very fast IGBTs (switching frequency up to 50 kHz)

Part number	Voltage V_{CES} (V)	Package	Current I_C at $T_C = 100\text{ }^\circ\text{C}$ (A)	On voltage at $T_C = 125\text{ }^\circ\text{C}$, $V_{GE} = 15\text{ V}$		Anti-parallel diode	
				$V_{CE(sat)}$ (V)	I_C (A)		
STGD6NC60HDT4	600	DPAK	7	1.7	3	Y	
STGD10NC60HDT4			10	1.7	5	Y	
STGD10NC60HT4			10	1.7	5		
STGD7NC60HT4			14	1.7	7		
STGB6NC60HDT4		D ² PAK	7	1.7	3	Y	
STGB10NC60HDT4			10	1.7	5	Y	
STGB7NC60HDT4			14	1.7	7	Y	
STGB19NC60HDT4			19	1.6	12	Y	
STGB20NC60VT4		30	1.7	20			
STGF6NC60HD		TO-220FP	3	1.7	3	Y	
STGF10NC60HD			6	1.7	5	Y	
STGF7NC60HD			8	1.7	7	Y	
STGF19NC60HD			10	1.6	12	Y	
STGP6NC60HD		TO-220	7	1.7	3	Y	
STGP10NC60H			10	1.7	5		
STGP10NC60HD			10	1.7	5	Y	
STGP7NC60H			14	1.7	7		
STGP7NC60HD			14	1.7	7	Y	
STGP19NC60H			19	1.6	12		
STGP19NC60HD			19	1.6	12	Y	
STGP20NC60V			30	1.7	20		
STGW19NC60HD		TO-247	21	1.6	12	Y	
STGW20NC60V			30	1.7	20		
STGW20NC60VD			30	1.7	20	Y	
STGW30NC60VD ²			40	1.7	20	Y	
STGW39NC60VD			40	1.7	30	Y	
STGW45NC60VD ²			50	1.7	30	Y	
STGW40NC60V			50	1.7	40		
STGY40NC60VD			Max247	50	1.7	40	Y
STGE50NC60VD		ISOTOP	50	1.7	40	Y	
STGW30N90D		900	TO-247	30	2	20	Y
STGF3NC120HD		1200	TO-220FP	3	2.2	3	Y
STGW30NC120HD	TO-247		30	2	20	Y	
STGW35NC120HD ²			34	2	20	Y	
STGWS38IH130D			1300	25	2	20	Y
STGW38IH130D ²				33	2	20	Y

2. TO-247 long leads

Short-circuit rugged IGBTs (switching frequency up to 50 kHz)

Advanced planar PT technology (new generation)							
Part number	Voltage V_{CES} (V)	Package	Current I_C at $T_C = 100\text{ }^\circ\text{C}$ (A)	On voltage at $T_C = 150\text{ }^\circ\text{C}$, $V_{GE} = 15\text{ V}$		Anti-parallel diode	
				$V_{CE(sat)}$ (V)	I_C (A)		
STGF10HF60KD ³	600	TO-220FP	6	1.6	5	Y	
STGF14HF60KD ³			7	1.8	7	Y	
STGD10HF60KDT4 ³		DPAK	10	1.6	5	Y	
STGB10HF60KDT4 ³		D ² PAK	10	1.6	5	Y	
STGP10HF60KD ³		TO-220	10	1.6	5	Y	
STGP14HF60KD ³			14	1.8	7	Y	
Planar PT technology							
Part number	Voltage V_{CES} (V)	Package	Current I_C at $T_C = 100\text{ }^\circ\text{C}$ (A)	On voltage at $T_C = 125\text{ }^\circ\text{C}$, $V_{GE} = 15\text{ V}$		Anti-parallel diode	
				$V_{CE(sat)}$ (V)	I_C (A)		
STGD8NC60KT4	600	DPAK	8	1.8	3		
STGD8NC60KDT4			8	1.8	3	Y	
STGD10NC60KT4			10	1.8	5		
STGD10NC60KDT4			10	1.8	5	Y	
STGD14NC60KT4			14	1.8	7		
STGB8NC60KT4		D ² PAK	8	1.8	3		
STGB8NC60KDT4			8	1.8	3	Y	
STGB10NC60KT4			10	1.8	5		
STGB10NC60KDT4			10	1.8	5	Y	
STGB14NC60KT4			14	1.8	7		
STGB14NC60KDT4			14	1.8	7	Y	
STGB19NC60KDT4			20	1.8	12	Y	
STGB30NC60KT4			26	1.9	20		
STGF8NC60KD			TO-220FP	4	1.8	3	Y
STGF10NC60KD				6	1.8	5	Y
STGF14NC60KD		7		1.8	7	Y	
STGF19NC60KD		10		1.8	12	Y	
STGP8NC60K		TO-220		8	1.8	3	
STGP8NC60KD				8	1.8	3	Y
STGP10NC60K				10	1.8	5	
STGP10NC60KD			10	1.8	5	Y	
STGP14NC60KD			14	1.8	7	Y	
STGP19NC60KD			20	1.8	12	Y	
STGP30NC60K			26	1.9	20		
STGW30NC60KD			TO-247	28	1.9	20	Y
STGW40NC60KD		38		1.9	30	Y	
STGW30N120KD		1200	TO-247	30	2.7	20	Y
STGW40N120KD				40	2.7	30	Y

3. Samples available from Q4 2009

Ultra and hyper fast IGBTs (switching frequency up to 100 kHz)

Advanced planar PT technology (new generation)

Part number	Voltage V_{CES} (V)	Package	Current I_C at $T_C = 100\text{ °C}$ (A)	On voltage at $T_C = 125\text{ °C}$, $V_{GE} = 15\text{ V}$		Anti-parallel diode
				$V_{CE(sat)}$ (V)	I_C (A)	
STGW35HF60WD	600	TO-247	35	1.65	20	Y
STGW35HF60WDI			35	1.65	20	Y
STGWA35HF60WDI ²			40	1.65	20	Y
STGW45HF60WD			45	1.7	30	Y
STGW45HF60WDI			45	1.7	30	Y
STGWA45HF60WDI ²			50	1.7	30	Y

Planar PT technology

Part number	Voltage V_{CES} (V)	Package	Current I_C at $T_C = 100\text{ °C}$ (A)	On voltage at $T_C = 125\text{ °C}$, $V_{GE} = 15\text{ V}$		Anti-parallel diode		
				$V_{CE(sat)}$ (V)	I_C (A)			
STGDL6NC60DT4	600	DPAK	5	2	3	Y		
STGDL6NC60DIT4			5	2	3	Y		
STGBL6NC60DT4		D ² PAK	6	2	3	Y		
STGBL6NC60DIT4			6	2	3	Y		
STGB19NC60WT4		TO-220FP	22	1.8	12			
STGFL6NC60D			3	2	3	Y		
STGFL6NC60DI			3	2	3	Y		
STGF19NC60WD		TO-220	7	1.8	12	Y		
STGPL6NC60D			6	2	3	Y		
STGPL6NC60DI			6	2	3	Y		
STGP19NC60W			22	1.8	12			
STGP19NC60WD			22	1.8	12	Y		
STGW19NC60W			TO-247	23	1.8	12		
STGW19NC60WD				23	1.8	12	Y	
STGW40NC60W				40	1.9	30		
STGW40NC60WD				40	1.9	30	Y	
STGW45NC60WD ²				45	1.9	30	Y	
STGW50NC60W				50	1.9	40		
STGY50NC60WD				Max247	50	1.9	40	Y
STGE50NC60WD				ISOTOP	50	1.9	40	Y

2. TO-247 long leads

Internally clamped IGBTs for electronic ignition

Part number	Clamped voltage V_{CES} (V)	Package	Current I_C at $T_C = 100\text{ }^\circ\text{C}$ (A)	On voltage at $T_C = 125\text{ }^\circ\text{C}$, $V_{GE} = 4.5\text{ V}$	
				$V_{CE(sat)}$ (V)	I_C (A)
STGB35N35LZT4	350	D ² PAK	30	1.35	15
STGB35N35LZ-1		I ² PAK	30	1.35	15
STGD18N40LZT4	390	DPAK	25	1.3	10
STGD18N40LZ-1		IPAK	25	1.3	10
STGB18N40LZT4		D ² PAK	30	1.3	10
STGB18N40LZ-1		I ² PAK	30	1.3	10
STGP18N40LZ		TO-220	30	1.3	10
STGB20NB37LZT4		400	D ² PAK	20	1.3
STGB10NB37LZT4	410	D ² PAK	10	1.3	20
STGB10NB40LZT4			10	1.3	20
STGB20NB41LZT4			20	1.3	20
STGP10NB37LZ		TO-220	10	1.3	20

IGBT intelligent power modules (IPM)

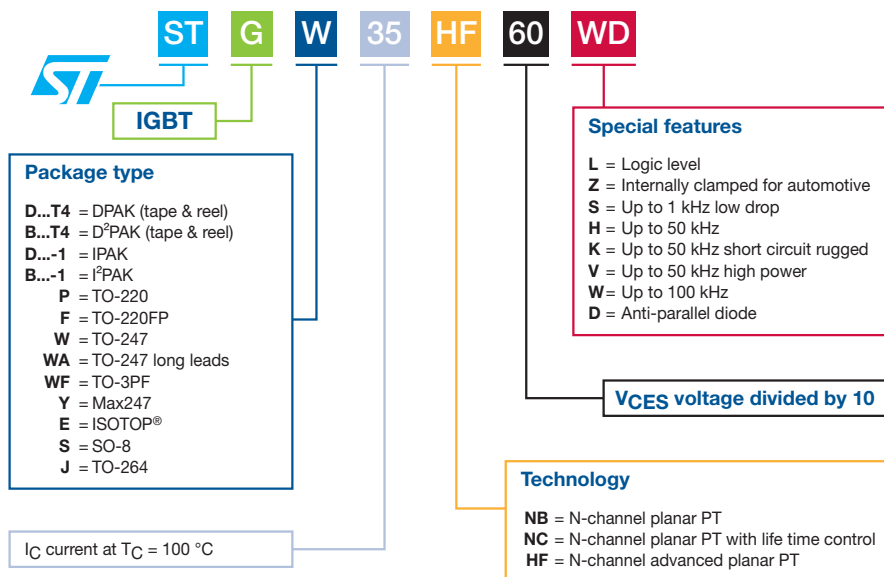
Part number	Voltage V_{CES} (V)	Package	Current I_C at $T_C = 25\text{ }^\circ\text{C}$ (A)	On voltage at $T_C = 125\text{ }^\circ\text{C}$, $V_{GE} = 15\text{ V}$	
				$V_{CE(sat)}$ (V)	I_C (A)
STGIPS10K60A	600	SDIP-25L Molded	10	1.8	5
STGIPS14K60			12	1.8	7
STGIPS20K60			17	1.8	12
STGIPL14K60		SDIP-38L Molded	14	1.8	7
STGIP3M25N60		SEMITOP 3	25 ⁴		20

4. $T_C = 80\text{ }^\circ\text{C}$

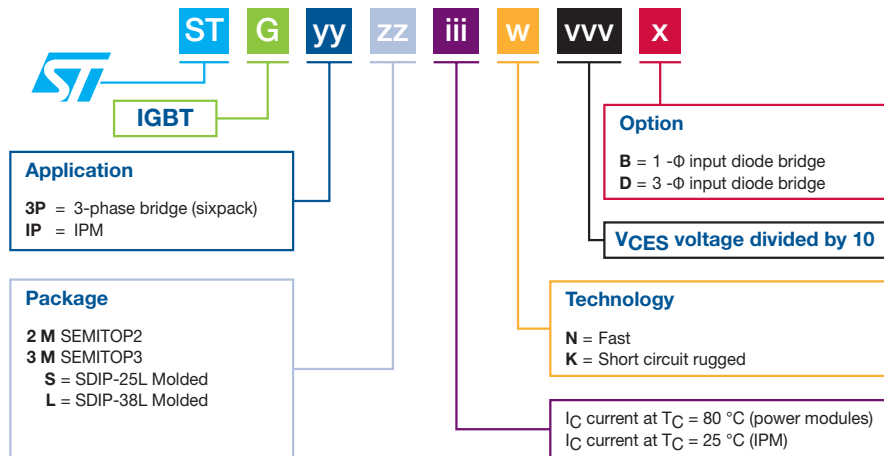
IGBT power modules for 3-phase inverters

Part number	Voltage V_{CES} (V)	Package	Current I_C at $T_C = 80\text{ }^\circ\text{C}$ (A)	On voltage at $T_C = 125\text{ }^\circ\text{C}$, $V_{GE} = 15\text{ V}$		Power dissipation (W)
				$V_{CE(sat)}$ (V)	I_C (A)	
STG3P2M10N60B	600	SEMITOP 2	10	1.7	7	56
STG3P3M25N60		SEMITOP 3	25	1.7	20	96

IGBT ordering information

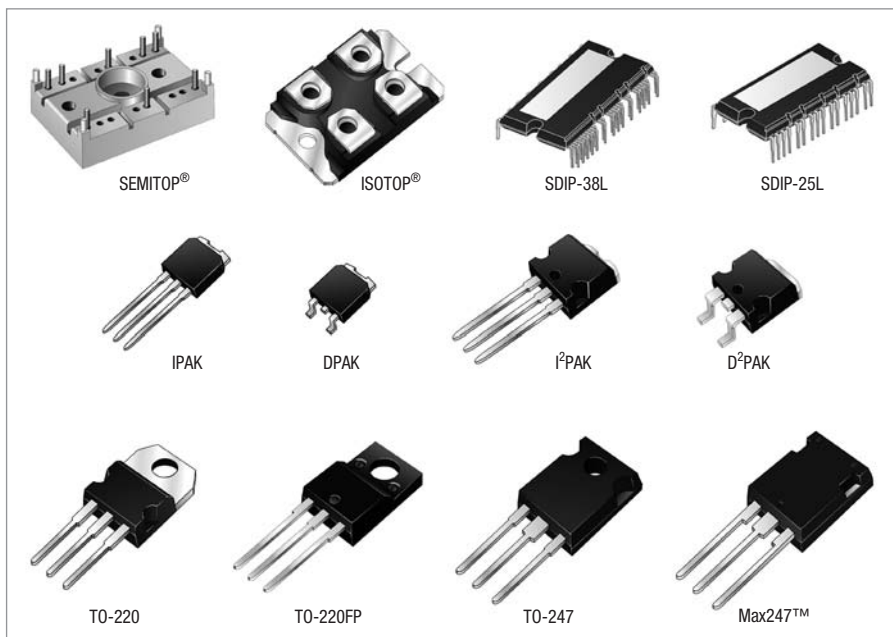


IGBT module ordering information



The option digit is present only for IGBT power modules, not IGBT intelligent power modules (IPM)

Package options



Package images are not to scale



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