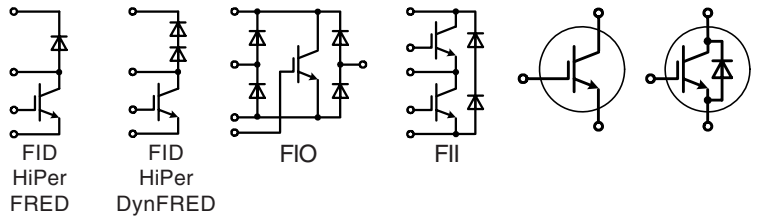


Discrete NPT IGBT

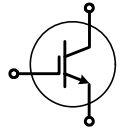
NPT IGBT

NPT IGBT = non-punch through insulated gate bipolar transistor, square RBSOA, short circuit rated

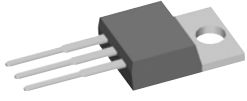

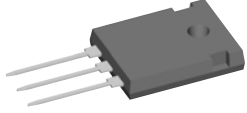
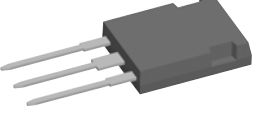

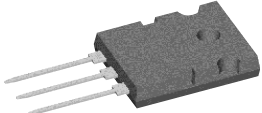


Type	V_{CES} V	I_{C25} A $T_C = 25^\circ\text{C}$ IGBT	I_{C90} A $T_C = 90^\circ\text{C}$ IGBT	V_{CEsat} V $T_J = 25^\circ\text{C}$ IGBT	E_{off} mJ $T_J = 125^\circ\text{C}$ IGBT	R_{thJC} K/W max. IGBT	Diode	I_{F90} A $T_C = 90^\circ\text{C}$ diode	Fig. No.	Package style
<p>► New</p> <p>Outline drawings on pages 188 - 224</p>										
IXDP20N60B	600	32	20	2.2	0.4	0.9	●	14	X005a	X005a TO-220AB Weight = 4 g
IXDP20N60BD1		32	20	2.2	0.4	0.9				
IXDP35N60B		60	35	2.1	0.8	0.5				
IXDH35N60B		60	35	2.1	0.8	0.5				
IXDH35N60BD1		60	35	2.1	0.8	0.5				
IXDR35N60BD1		60	24	2.1	0.8	1.0				
IXDA20N120AS	1200	34	25	2.8	2.4	0.63	●	20	X011b	X011b TO-263AA Weight = 2 g
IXDH20N120		38	25	2.4	2.4	0.63				
IXDH20N120D1		38	25	2.4	2.4	0.63				
IXDH30N120		60	38	2.4	3.4	0.42				
IXDH30N120D1		60	38	2.4	3.4	0.42				
IXDR30N120		50	30	2.4	3.4	0.60				
IXDR30N120D1		50	30	2.4	3.4	0.60				
IXDN55N120D1		100	62	2.3	6.2	0.28				
IXDN75N120		150	95	2.2	10.5	0.19				
<p>3rd generation NPT³ IGBT lower $V_{CE(sat)}$</p>										
IXEH25N120	1200	36	24	2.6	2.5	0.63	●	20	X014a	X014a ISOPLUS247™ Weight = 5 g
IXEH25N120D1		36	24	2.6	2.5	0.63				
IXER35N120D1		50	32	2.2	2.6	0.60				
IXEH40N120		60	40	2.4	3.0	0.42				
IXEH40N120D1		60	40	2.4	3.0	0.42				
IXER60N120		95	60	2.1	4.8	0.33				
IXEN60N120		100	65	2.1	4.8	0.28				
IXEN60N120D1		100	65	2.1	4.8	0.28				
<p>Special configurations with NPT IGBT</p>										
Type	Configuration	V_{CES} V	I_{C25} A $T_C = 25^\circ\text{C}$ IGBT	I_{C90} A $T_C = 90^\circ\text{C}$ IGBT	V_{CEsat} V $T_J = 25^\circ\text{C}$ IGBT	E_{off} mJ $T_J = 125^\circ\text{C}$ IGBT	R_{thJC} K/W max. IGBT	Fig. No.		
FID35-06C	boost, HiPerDynFRED	600	38	24	1.9	0.6	1.0	X024a	X024a ISOPLUS i4-PAC™ Weight = 6 g	
FID36-06D	boost, HiPerDynFRED	600	38	24	1.9	0.6	1.0			
FID60-06D	boost, HiPerDynFRED	600	65	40	1.6	1.4	0.6			
FII30-06D	phaseleg	600	30	18	1.9	0.68	1.25			
FII40-06D	phaseleg	600	40	25	1.8	0.8	1.0			
<p>Special configurations with NPT³ IGBT</p>										
FII30-12E	phaseleg	1200	32	20	2.4	2.0	0.8	X024a		
FII50-12E	phaseleg	1200	50	32	2.0	2.2	0.6			
FIO50-12BD	1~ bridge & IGBT	1200	50	32	2.0	2.2	0.6			

S Series IGBTs with SCSOA Capability

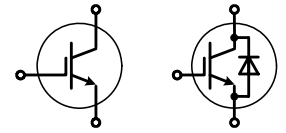


Medium speed (1 kHz to 20 kHz) Single IGBT

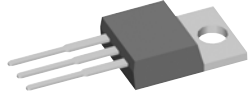

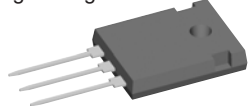
Part Type	V _{CES} max V	I _c max T _c =25°C A	I _c max T _c =90°C A	V _{CE(sat)} max T _c =25°C V	t _{fi} typ T _J =25°C ns	E _{off} typ T _J =125°C mJ	R _{thJC} max IGBT	Fig. No	Package style
IXSP24N60B	600	40	24	2.5	170	-	-	X005a	Outline drawings on pages 188 - 224 X005a TO-220AB Weight = 4 g 
IXSH24N60B		48	24	2.5	170	1.3	0.83	X014a	
IXST24N60B		48	24	2.5	170	1.3	0.83	X019	
IXSH30N60B		55	30	2	140	2.5	0.62	X014a	
IXSH30N60C		55	30	2.5	70	1.2	0.62	X014a	
IXST30N60B		55	30	2	140	2.5	0.62	X019	
IXST30N60C		55	30	2.5	70	1.2	0.62	X019	
IXSH40N60B		75 ①	40	2.2	120	1.8	0.45	X014a	
IXSH50N60B		75 ①	50	2.5	150	3.3	0.5	X014a	
IXST40N60B		75 ①	40	2.2	120	1.8	0.45	X019	
IXSK80N60B	160 ①	80	2.5	180	4.2	0.26	X020	X011b TO-263AA Weight = 2 g 	
IXSX80N60B		80	2.5	180	4.2	0.26	X015		
IXSA15N120B	1200	30	15	3.4	160	3.1	0.83	X011b	X014a TO-247AD Weight = 6 g 
IXSP15N120B		30	15	3.4	160	3.1	0.83	X005a	
IXSH15N120B		30	15	3.4	126	3.1	0.83	X014a	
IXST15N120B		30	15	3.4	126	3.1	0.83	X019	
IXSH35N120B		70	35	3.6	180	9	0.42	X014a	
IXST35N120B		70	35	3.6	180	9	0.42	X019	
IXSH45N120B		75 ①	45	3	380	13	0.42	X014a	
IXST45N120B		75 ①	45	3	380	13	0.42	X019	
IXSH35N140A	1400	70	35	4	400	12	0.42	X014a	X015 PLUS247 Weight = 5 g 
									X019 TO-268AA Weight = 5 g 
									X020 TO-264 Weight = 10 g 

① Currents may be limited by external package leads.

Discrete IGBT S series with SCSOA capability



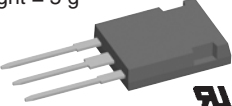

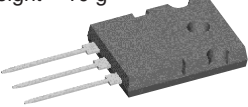

Medium Speed (1 kHz to 20 kHz), IGBT with freewheeling diode

Part Type	V _{CES} max	I _C max T _C =25°C	I _C max T _C =110°C	V _{CE(sat)} max T _C =25°C	t _{fi} typ T _J =25°C	E _{off} typ T _J =125°C	R _{thJC} max IGBT	I _F 110°C Diode A	R _{thJC} Diode K/W	Fig. No	Package style
► New	V	A	A	V	ns	mJ					Outline drawings on pages 188 - 224
► IXSA10N60B2D1	600	20	10	2.5	165	0.79	1.25	11	2.5	X011b	TO-220AB X005a Weight = 4 g 
► IXSP10N60B2D1		20	10	2.5	165	0.79	1.25	11	2.5	X005a	
► IXSQ10N60B2D1		20	10	2.5	165	0.79	1.25	11	2.5	X017a	
► IXSH10N60B2D1		20	10	2.5	165	0.79	1.25	11	2.5	X014a	
► IXSA20N60B2D1		35	20	2.5	126	0.97	0.66	11	2.5	X011b	
► IXSP20N60B2D1		35	20	2.5	126	0.97	0.66	11	2.5	X005a	
► IXSQ20N60B2D1		35	20	2.5	126	0.97	0.66	21	1.6	X019	
► IXSH20N60B2D1		35	20	2.5	126	0.97	0.66	21	1.6	X014a	
► IXSH30N60B2D1		48	30	2.5	140	1.18	0.5	28	0.9	X014a	
► IXST30N60B2D1		48	30	2.5	140	1.18	0.5	28	0.9	X019	
► IXSH40N60B2D1	600	75 ①	40	1.7	82	0.4	0.42	30	0.9	X014a	TO-263AA X011b Weight = 2 g 
► IXST40N60B2D1		75 ①	40	1.7	82	0.4	0.42	30	0.9	X019	
IXSH15N120BD1	1200	30	15	3.4	150	1.5	0.83	15	0.9	X014a	TO-247AD X014a Weight = 6 g 
IXST15N120BD1		30	15	3.4	150	1.5	0.83	15	0.9	X019	
IXSK35N120BD1		70	35	3.6	180	5	0.42	35	0.65	X020	
IXSR35N120BD1		70	30	3.6	180	5	0.5	30	0.83	X016a	
IXSX35N120BD1		70	35	3.6	180	5	0.42	35	0.65	X015	

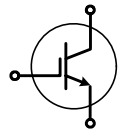
① Currents may be limited by external package leads.

Discrete IGBT G Series

Low Saturation Voltage Types, single IGBT

Part Type	V _{CES} max	I _C max T _C =25°C	I _C max T _C =90°C	V _{CE(sat)} max T _C =25°C	t _{fi} typ T _J =25°C	E _{off} typ T _J =125°C	R _{thJC} max	Fig. No	Package style
► New	V	A	A	V	ns	mJ	K/W		
IXGH60N60	600	75 ①	60	1.7	360	17	0.42	X014a	ISOPLUS247™ X016a Weight = 5 g 
IXGK60N60		75	60	1.7	360	17	0.42	X020	
IXGT60N60		75 ①	60	1.7	360	17	0.42	X019	
IXGN60N60		100	60	1.7	360	17	0.5	X027a	
► IXGN80N60A2		160 ①	80 ②	1.35	250	10	0.2	X027a	
IXGN200N60A2		200 ①	100 ②	1.35	250	12	0.17	X027a	
IXGA8N100	1000	16	8	2.7	390	3.7	2.3	X011b	TO-268AA X019 Weight = 5 g 
IXGP8N100		16	8	2.7	390	3.7	2.3	X005a	
IXGA20N100		40	20	3	280	3.5	0.83	X011b	
IXGP20N100		40	20	3	280	3.5	0.83	X005a	
IXGH20N100		40	20	3	280	3.5	0.83	X014a	
IXGT20N100		40	20	3	280	3.5	0.83	X019	
IXGA20N120	1200	40	20	2.5	380	9.5	0.83	X011b	
IXGP20N120		40	20	2.5	380	9.5	0.83	X005a	
IXGH20N120		40	20	2.5	380	9.5	0.83	X014a	
IXGT20N120		40	20	2.5	380	9.5	0.83	X019	
► IXGH40N120A2		75 ①	50	2	800	35	0.35	X014a	TO-264 X020 Weight = 10 g 
► IXGT40N120A2		75 ①	50	2	800	35	0.35	X019	
① Currents may be limited by external package leads. ② @ T _C =110°C									SOT-227B miniBLOC X027a Weight = 30 g 

Discrete IGBT G Series



Mid-Frequency Range (15 kHz - 40 kHz) single IGBT

Part Type	V _{CES} max	I _c max T _C =25°C	I _c max T _C =110°C	V _{CE(sat)} max T _C =25°C	t _{fi} typ T _J =25°C	E _{off} typ T _J =125°C	R _{thJC} max	Fig. No	Package style
► New	V	A	A	V	ns	mJ	K/W		Outline drawings on pages 188 - 224
IXGA7N60B	600	14	7 ③	2	150	0.6	2.3	X011b	X005a Weight = 4 g
IXGP7N60B		14	7 ③	2	150	0.6	2.3	X005a	
IXGA7N60C		14	7 ③	2.7	45	0.22	2.3	X011b	
IXGP7N60C		14	7 ③	2.7	45	0.22	2.3	X005a	
IXGC16N60B2		28	13	2.3	80	0.35	0.83	X010a	X010a Weight = 3 g
IXGA16N60B2		40	16	2.3	80	0.35	0.83	X011b	
IXGP16N60B2		40	16	2.3	80	0.35	0.43	X005a	
IXGP30N60B2		45 ①	30	1.8	82	0.9	0.65	X005a	
IXGH30N60B2		70	30	1.8	82	0.9	0.65	X014a	X014a
IXGT30N60B2		70	30	1.8	82	0.9	0.42	X019	
IXGR40N60B2		60	33	1.9	82	1.1	0.74	X016a	X016a
IXGR50N60B2		68	36	2.2	65	1.55	0.6	X016a	
IXGH40N60B2		75 ①	40	1.7	82	1.1	0.42	X014a	X014a
IXGT40N60B2		75 ①	40	1.7	82	1.1	0.42	X019	
IXGR60N60B2		75 ①	47	2	100	2.8	0.5	X016a	X011b Weight = 2 g
IXGH50N60B2		75 ①	50	2	82	1.55	0.31	X014a	
IXGT50N60B2		75 ①	50	2	82	1.55	0.31	X019	X019
IXGH60N60B2		75 ①	60	1.8	100	2.8	0.25	X014a	
IXGT60N60B2		75 ①	60	1.8	100	2.8	0.25	X019	X014a
IXGR120N60B		156 ①	102 ③	2.1	160	8.7	0.3	X016a	
IXGK120N60B		200 ①	120 ③	2.1	160	8.7	0.21	X020	X014a Weight = 6 g
IXGX120N60B		200 ①	120 ③	2.1	160	8.7	0.21	X015	
IXGN200N60B		200 ①	120 ③	2.1	160	8.7	0.21	X027a	
IXGH32N90B2	900	64	32	2.7	165	5.25	0.42	X014a	
IXGT32N90B2		64	32	2.7	165	5.25	0.42	X019	X015 Weight = 5 g
IXGH50N90B2		75 ①	50	2.7	200	8.7	0.31	X014a	
IXGT50N90B2		75 ①	50	2.7	200	8.7	0.31	X019	
IXGA14N120B	1200	28	14	3.3	330	4.85	0.83	X011b	
IXGP14N120B		28	14	3.3	330	4.85	0.83	X005a	X016a
IXGA15N120B2		30	15 ③	3.5	137	2.8	0.75	X011b	
IXGP15N120B2		30	15 ③	3.5	137	2.8	0.75	X005a	
IXGA15N120B		30	15 ③	3.2	160	3.5	0.83	X011b	
IXGP15N120B		30	15 ③	3.2	160	3.5	0.83	X005a	X016a
IXGH15N120B		30	15 ③	3.2	160	3.5	0.65	X014a	
IXGT15N120B		30	15 ③	3.2	160	3.5	0.65	X019	Weight = 5 g
IXGQ20N120B		40	20	3.4	160	3.5	0.65	X017a	
IXGH20N120B		40	20 ③	3.4	160	3.5	0.65	X014a	X014a
IXGT20N120B		40	20 ③	3.4	160	3.5	0.65	X019	
IXGR35N120B		70	23 ③	3.3	160	8	0.5	X016a	X016a
IXGH28N120B		50	28 ③	3.5	160	5	0.5	X014a	
IXGT28N120B		50	28 ③	3.5	160	5	0.5	X019	X019
IXGH35N120B		70	35 ③	3.3	160	8	0.42	X014a	
IXGT35N120B		70	35 ③	3.3	160	8	0.42	X019	X019 Weight = 5 g
IXGK35N120B		70	35 ③	3.3	160	8	0.35	X020	
IXGX35N120B		70	35 ③	3.3	160	8	0.35	X015	X015

① Currents may be limited by external package leads.

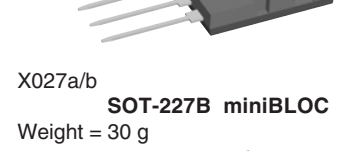
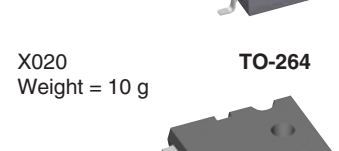
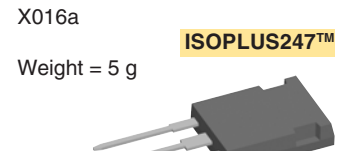
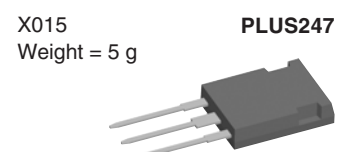
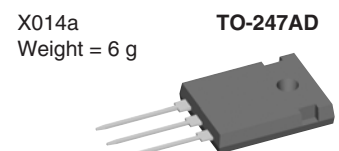
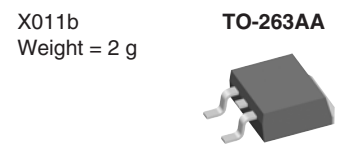
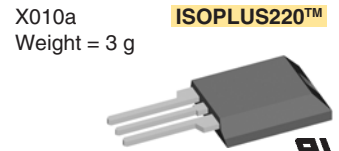
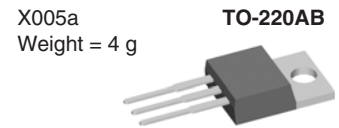
③ @ T_C=90°C

Polar IGBTs

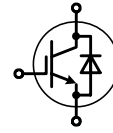
Mid-Frequency Range (15KHz-40KHz) IGBT/Diode Types

Part Type	V _{CES} max	I _{CP} / I _{CM} max T _J ≤ 150°C tp < 10 μs	I _c max T _C =110°C	V _{CE(sat)} max T _C =25°C	t _{fi} typ T _J =25°C	R _{thJC} max IGBT	Fig. No
► New	V	A	A	V	ns		
IXGK400N30A3	300	400	200 ①	1.15	250	0.125	X020
IXGX400N30A3		400	200 ①	1.15	250	0.125	X015
IXGN400N30A3		400	200 ①	1.15	250	0.125	X027a
IXGN320N60A3	600	320	120 ①	1.25	300	0.17	X027a

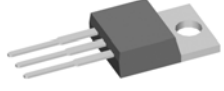
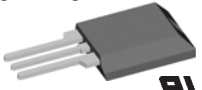
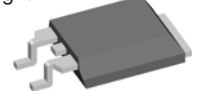

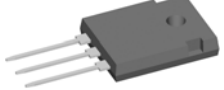
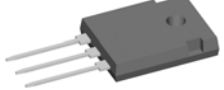
① Currents may be limited by external package leads.



Discrete IGBT G Series

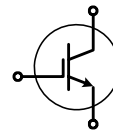


Mid-Frequency Range (15 kHz - 40 kHz) , IGBT with freewheeling diode

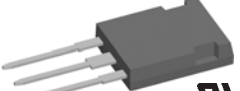

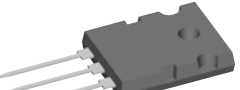
Part Type	V _{CES} max	I _c max T _C =25°C	I _c max T _C =110°C	V _{CE(sat)} max T _C =25°C	t _{fi} typ T _J =25°C	E _{off} typ T _J =125°C	R _{thJC} max IGBT	I _F 110°C	R _{thJC} Diode K/W	Fig. No	Package style
► New	V	A	A	V	ns	mJ	IGBT	A			Outline drawings on pages 188 - 224
IXGC16N60B2D1	600	28	13	2.3	80	0.35	0.83	10	2.5	X010a	TO-220AB Weight = 4 g 
IXGA16N60B2D1		40	16	2.3	80	0.35	0.83	11	2.5	X011b	
IXGP16N60B2D1		40	16	2.3	80	0.35	0.83	11	2.5	X005a	
IXGH16N60B2D1		40	16	2.3	80	0.35	0.83	11	2.5	X014a	
IXGH30N60B2D1		70	30	1.8	82	0.9	0.42	30	0.9	X014a	
IXGT30N60B2D1		70	30	1.8	82	0.9	0.42	30	0.9	X019	
IXGR40N60B2D1		60	33	1.9	82	1.1	0.75	25	1.1	X016a	
IXGR50N60B2D1		60	36	2.2	65	1.55	0.6	39	0.85	X016a	
IXGH40N60B2D1		75 ①	40	1.7	82	1.1	0.31	30	0.9	X014a	
IXGT40N60B2D1		75 ①	40	1.7	82	1.1	0.31	30	0.9	X019	
IXGR60N60B2D1		75 ①	47	2	100	2.8	0.5	39	0.85	X016a	X010a ISOPLUS220™ Weight = 3 g 
IXGK50N60B2D1		75 ①	50	2	65	1.55	0.25	48	0.65	X020	
IXGX50N60B2D1		75 ①	50	2	65	1.55	0.25	48	0.65	X015	
IXGK60N60B2D1		75 ①	60	1.8	100	2.8	0.25	48	0.65	X020	
IXGX60N60B2D1		75 ①	60	1.8	100	2.8	0.25	48	0.65	X015	X013 PLUS220 SMD Weight = 4 g 
► IXGR32N90B2D1	900	47	22	2.9	165	5.25	0.8	22	1.1	X016a	
► IXGR50N90B2D1		40	19	2.9	200	8.7	1.25	22	1.1	X016a	
► IXGH32N90B2D1		64	32	2.7	165	5.25	0.42	27	0.9	X014a	
► IXGT32N90B2D1		64	32	2.7	165	5.25	0.42	27	0.9	X019	
► IXGH50N90B2D1		75 ①	50	2.7	200	8.7	0.31	26	0.9	X014a	
► IXGT50N90B2D1		75 ①	50	2.7	200	8.7	0.31	26	0.9	X019	
► IXGH30N120B3D1	1200	50	30	3.5	160	4.6	0.5	28	0.9	X014a	X014a TO-247AD Weight = 6 g 
► IXGT30N120B3D1		50	30	3.5	160	4.6	0.5	28	0.9	X019	
► IXGH40N120B2D1		75 ①	40	3.5	140	8.3	0.35	30	0.9	X014a	
► IXGT40N120B2D1		75 ①	40	3.5	140	8.3	0.35	30	0.9	X019	

① Currents may be limited by external package leads.

Discrete IGBT G Series for High Speed



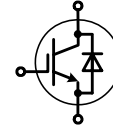
High Frequency Range (> 40 kHz), single IGBT

Part Type	V _{CES} max	I _c max T _C =25°C	I _c max T _C =110°C	V _{CE(sat)} max T _C =25°C	t _{fi} typ T _J =25°C	E _{off} typ T _J =125°C	R _{thJC} max IGBT	Fig. No	Package style
► New	V	A	A	V	ns	mJ	IGBT		
IXGC16N60C2	600	20	8	3	35	0.15	2.00	X010a	X016a ISOPLUS247™ Weight = 5 g 
IXGA16N60C2		40	16	3	35	0.15	0.83	X011b	
IXGP16N60C2		40	16	3	35	0.15	0.83	X005a	
IXGR40N60C2		56	26	2.7	32	0.5	0.74	X016a	
IXGH30N60C2		70	30	2.5	32	0.4	0.65	X014a	
IXGP30N60C2		70	30	2.5	32	0.4	0.65	X005a	
IXGT30N60C2		70	30	2.5	32	0.4	0.65	X019	
IXGH40N60C2		75 ①	40	2.5	32	0.5	0.42	X014a	
IXGR50N60C2		75 ①	40	2.7	48	0.74	0.62	X016a	
IXGT40N60C2		75 ①	40	2.5	32	0.5	0.42	X019	
IXGR60N60C2		75 ①	48	2.7	35	0.5	0.32	X016a	X019 TO-268AA Weight = 5 g 
IXGH50N60C2		75 ①	50	2.5	48	0.74	0.31	X014a	
IXGT50N60C2		75 ①	50	2.5	48	0.74	0.31	X019	X020 TO-264 Weight = 10 g 
IXGR120N60C2		75 ①	60	2.7	45	1.5	0.42	X016a	
IXGH60N60C2		75 ①	60	2.5	35	1.2	0.26	X014a	
IXGT60N60C2		75 ①	60	2.5	35	1.2	0.26	X019	
IXGN60N60C2		75 ①	60	2.5	35	1.2	0.26	X027a	
► IXGK120N60C2		75 ①	75 ③	2.5	45	1.5	0.15	X020	
► IXGX120N60C2		75 ①	75 ③	2.5	45	1.5	0.15	X015	

① Currents may be limited by external package leads.

③ @ T_C=90°C

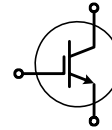
Discrete IGBT G Series for High Speed



High Frequency Range (> 40 kHz), IGBT with freewheeling diode

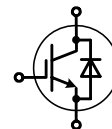
Part Type	V _{CES} max	I _c max T _c =25°C	I _c max T _c =110°C	V _{CE(sat)} max T _c =25°C	t _{fi} typ T _J =25°C	E _{off} typ T _J =125°C	R _{thJC} max IGBT	I _F 110°C	R _{thJC} Diode	Fig. No	Package style
> New	V	A	A	V	ns	mJ	IGBT	A	K/W		Outline drawings on pages 188 - 224
> IXGC16N60C2D1	600	20	8	3	35	0.15	2	42	2.5	X010a	X005a TO-220AB
> IXGA16N60C2D1		40	16	3	35	0.15	0.83	12	2.5	X011b	Weight = 4 g
> IXGP16N60C2D1		40	16	3	35	0.15	0.83	16	2.5	X005b	
> IXGH16N60C2D1		40	16	3	35	0.15	0.83	11	2.5	X010a	
> IXGR40N60C2D1		56	26	2.7	32	0.2	0.74	50	1.5	X016a	
> IXGH30N60C2D1		70	30	2.5	32	0.4	0.65	30	0.9	X014a	
> IXGT30N60C2D1		70	30	2.5	32	0.4	0.65	30	0.9	X019	
> IXGH40N60C2D1		75	40	2.5	32	0.2	0.42	40	0.9	X014a	X010a ISOPLUS220™
> IXGJ40N60C2D1		75 ①	40	2.5	32	0.2	0.42	40	0.9	X018	Weight = 3 g
> IXGR50N60C2D1		75 ①	40	2.7	48	0.74	0.75	42	0.85	X016a	
> IXGT40N60C2D1		75 ①	40	2.5	32	0.2	0.42	40	0.9	X019	
> IXGR60N60C2D1		75 ①	48	2.7	35	1.2	0.65	60	0.85	X016a	
> IXGK50N60C2D1		75	50	2.5	48	0.74	0.31	50	0.85	X020	
> IXGX50N60C2D1		75 ①	50	2.5	48	0.74	0.31	50	0.85	X015	
> IXGK60N60C2D1		75	60	2.5	35	1.2	0.26	60	0.85	X020	X011b TO-263AA
> IXGN60N60C2D1		75	60	2.5	35	1.2	0.26	39	0.85	X027a	Weight = 2 g
> IXGT60N60C2D1		75 ①	60	2.5	35	1.2	0.26	60	0.85	X019	
> IXGX60N60C2D1		75 ①	60	2.5	35	1.2	0.26	60	0.85	X015	

1700 V IGBT



Low saturation voltage Types

Part Type	V _{CES} max	I _c max T _c =25°C	I _c max T _c =110°C	V _{CE(sat)} max T _c =25°C	E _{off} typ T _J =125°C	R _{thJC} max IGBT	Fig. No
> New	V	A	A	V	mJ	IGBT	
IXGH25N160	1600	75	35	2.5	20	0.42	X014a
IXGT25N160		75	35	2.5	20	0.42	X019
IXGH6N170	1700	12	6	4	2	1.65	X014a
IXGT6N170		12	6	4	2	1.65	X019
IXGH10N170		20	10	4	4.7	1.1	X014a
IXGT10N170		20	10	4	4.7	1.1	X019
IXGH16N170		32	16	3.5	8	0.65	X014a
IXGT16N170		32	16	3.5	8	0.65	X019
> IXGF32N170		26	12	3.5	13.5	0.65	X024c
IXGH24N170		50	24	3.3	12	0.5	X014a
IXGT24N170		50	24	3.3	12	0.5	X019
IXGH32N170		75 ①	32	3.3	14	0.35	X014a
IXGT32N170		75 ①	32	3.3	14	0.35	X019



Low Saturation Voltage IGBT with SONIC-FRD Fast Recovery Diodes

Part Type	V _{CES} max	I _c max T _c =25°C	I _c max T _c =90°C	V _{CE(sat)} max T _c =25°C	t _{fi} typ T _J =25°C	E _{off} typ T _J =125°C	R _{thJC} max IGBT	I _F 90°C	R _{thJC} Diode	Fig. No
> New	V	A	A	V	ns	mJ	IGBT	A	K/W	
> IXGR32N170H1	1700	38	20	3.5	250	13.6	0.65	14	1.5	X016a
IXGX32N170H1		75 ①	32	3.3	250	22	0.35	60	0.3	X015

X016a **ISOPLUS247™**
Weight = 5 g

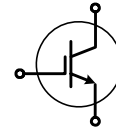
X019 **TO-268AA**
Weight = 5 g

X024c **ISOPLUS i4-PAC™**
Weight = 6 g

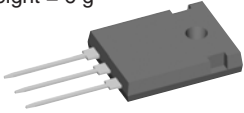
X027a **SOT-227B miniBLOC**
Weight = 30 g

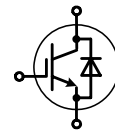
① Currents may be limited by external package leads.

1700 V IGBT



High speed Types

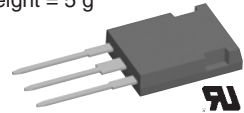
Part Type	V _{CES} max	I _c max T _c =25°C	I _c max T _c =110°C	V _{CE(sat)} max T _c =25°C	E _{off} typ T _J =125°C	R _{thJC} max IGBT	Fig. No	Package style
► New	V	A	A	V	mJ			Outline drawings on pages 188 - 224
IXGH6N170A	1700	6	3	7	0.26	1.65	X014a	X014a TO-247AD Weight = 6 g 
IXGT6N170A		6	3	7	0.26	1.65	X019	
IXGH10N170A		10	5	6	0.6	1.1	X014a	
IXGT10N170A		10	5	6	0.6	1.1	X019	
IXGH16N170A		16	8	5	1.1	0.65	X014a	
IXGT16N170A		16	8	5	1.1	0.65	X019	
IXGH24N170A		24	16	6	1.7	0.5	X014a	
IXGT24N170A		24	16	6	1.7	0.5	X019	
IXGH32N170A		32	21	5	3	0.35	X014a	
IXGT32N170A		32	21	5	3	0.35	X019	



High Speed IGBT with SONIC-FRD Fast Recovery Diodes

Part Type	V _{CES} max	I _c max T _c =25°C	I _c max T _c =90°C	V _{CE(sat)} max T _c =25°C	t _{fi} typ T _J =25°C	E _{off} typ T _J =125°C	R _{thJC} max IGBT	I _F 90°C	R _{thJC} Diode K/W	Fig. No
► New	V	A	A	V	ns	mJ		A		
IXGR16N170AH1	1700	16	8	5	40	1.1	1.04	14	1.5	X016a
IXGH16N170AH1		16	8	5	40	1.1	0.65	20	0.9	X014a
IXGT16N170AH1		16	8	5	40	1.1	0.65	20	0.9	X019
IXGH24N170AH1		24	16	6	45	1.7	0.5	17	0.9	X014a
IXGT24N170AH1		24	16	6	45	1.7	0.5	17	0.9	X019
IXGR32N170AH1		26	17	5.2	50	2.4	0.65	14	1.5	X016a
IXGX32N170AH1		32	21	5	50	3	0.35	60	0.3	X015

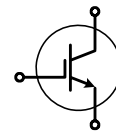
X016a **ISOPLUS247™**
Weight = 5 g



X019 **TO-268AA**
Weight = 5 g

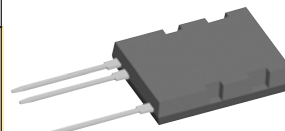


Very High Voltage IGBTs

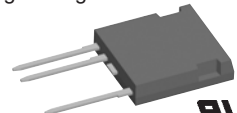


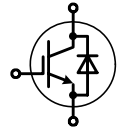
Part Type	V _{CES} max	I _c max T _c =25°C	I _c max T _c =90°C	V _{CE(sat)} max T _c =25°C	t _{fi} typ T _J =25°C	E _{off} typ T _J =125°C	R _{thJC} max IGBT	Fig. No
► New	V	A	A	V	ns	mJ		
IXLF19N250A	2500	32	19	3.9	250	30	0.5	X024c
IXEL40N400	4000	62	40	4	450	220	0.33	X022c

X022s **ISOPLUS264™**
Weight = 10 g

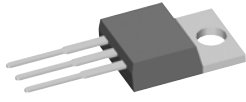


X024c **ISOPLUS i4-PAC™**
Weight = 6 g

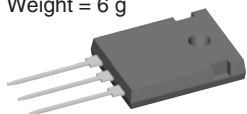
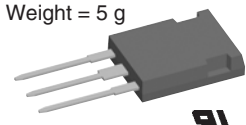




High Speed Types in 1600 V

Type	V _{CES} V	I _{C25} T _C = 25°C A	I _{C90} T _C = 90°C A	V _{CE(sat)} typ T _C = 25°C V	Gate drive V	t _f typ T _C = 125°C ns	R _{thJC} K/W	Fig. No.	Package style Outline drawings on page 188 - 224
IXBP5N160G	1600	5.7	3.5	4.9	10	70	1.75	X005a	X005a TO-220AB Weight = 4 g 
IXBH5N160G		5.7	3.5	4.9	10	70	1.75	X014a	
IXBF9N160G		7	5	4.9	10	70	1.75	X024c	
IXBH9N160G		9	5	4.9	10	70	1.25	X014a	
IXBF40N160		28	16	6.2	15	40	0.50	X024c	
IXBH40N160		33	20	6.2	15	40	0.35	X014a	

1700 V Types

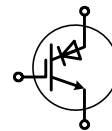
High speed									
IXBH16N170A	1700	16	10	4.7	15	50	0.83	X014a	X014a TO-247AD Weight = 6 g 
IXBT16N170A		16	10	4.7	15	50	0.83	X019	
IXBT42N170A		42	25	5.0	15	50	0.35	X019	
Low V _{CE(sat)}									
IXBH6N170	1700	10	6	2.3	15	1200	1.8	X014a	X016a ISOPLUS247™ Weight = 5 g 
IXBT6N170		10	6	2.3	15	1200	1.8	X019	
IXBH10N170		16	10	2.3	15	1200	1.25	X014a	
IXBT10N170		16	10	2.3	15	1200	1.25	X019	
IXBH16N170		25	16	2.3	15	1200	0.83	X014a	
IXBT16N170		25	16	2.3	15	1200	0.83	X019	
IXBH42N170		70	42	2.3	15	1200	0.35	X014a	
IXBT 42N170		70	42	2.3	15	1200	0.35	X019	

BiMOSFET™ includes a body diode, which can carry rated current
 High voltage, high speed, pulse current applications

RIGBT

IGBT with Reverse Blocking Capability

- Applications: lighting control, AC motor control, matrix converters
- No extra on state losses for reverse blocking feature



Type	Configuration	V _{CES} max V	I _{C25} T _C = 25°C A	I _{C90} T _C = 90°C A	V _{CE(sat)} typ T _C = 25°C V	t _{rr} typ T _C = 125°C µs	t _f typ T _C = 125°C ns	Fig. No.
▶ New								
▶ IXRP15N120	single RIGBT	1200	25	15	2.5	0.3	46	X005a
▶ IXRH40N120	single RIGBT	1200	55	35	2.2	1.6	46	X014a
▶ IXRR40N120	single RIGBT	1200	45	28	2.2	1.6	46	X016a

preliminary data, typical values

X019 **TO-268**
 Weight = 5 g


X024c **ISOPLUS i4-PAC™**
 Weight = 6 g
