IXYS

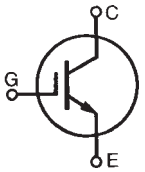
Advance Technical Data

HiPerFAST™ IGBT

IXGH 34N60B2

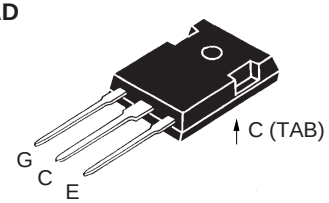
V_{CES} = 600 V
I_{C25} = 70 A
$V_{CE(sat)}$ < 1.55 V
$t_{fi\,typ}$ = 150 ns

Optimized for 10-25 KHz hard switching and up to 150 KHz resonant switching



Symbol	Test Conditions	Maximum Ratings	
V_{CES}	T_J = 25°C to 150°C	600	V
V_{CGR}	T_J = 25°C to 150°C; R_{GE} = 1 MΩ	600	V
V_{GES}	Continuous	±20	V
V_{GEM}	Transient	±30	V
I_{C25}	T_C = 25°C (limited by leads)	70	A
I_{C110}	T_C = 110°C	34	A
I_{CM}	T_C = 25°C, 1 ms	150	A
SSOA (RBSOA)	V_{GE} = 15 V, T_{VJ} = 125°C, R_G = 10 Ω Clamped inductive load @ ≤ 600 V	I_{CM} = 60	A
P_C	T_C = 25°C	190	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s		300	°C
M_d	Mounting torque (M3)	1.13/10	Nm/lb.in.
Weight	TO-247 AD	6	g
	TO-268 SMD	4	g

TO-247 AD (IXGH)



G = Gate, C = Collector,
E = Emitter, TAB = Collector

Features

- Medium frequency IGBT
- Square RBSOA
- High current handling capability
- MOS Gate turn-on
  - drive simplicity

Applications

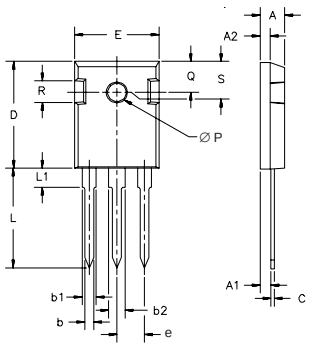
- PFC circuits
- Uninterruptible power supplies (UPS)
- Switched-mode and resonant-mode power supplies
- AC motor speed control
- DC servo and robot drives
- DC choppers

Symbol	Test Conditions		Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
$V_{GE(th)}$	I_C = 250 μA, V_{CE} = V_{GE}		2.5		5.0	V
I_{CES}	V_{CE} = V_{CES} V_{GE} = 0 V	T_J = 25°C T_J = 150°C			50 1	μA mA
I_{GES}	V_{CE} = 0 V, V_{GE} = ±20 V				±100	nA
$V_{CE(sat)}$	I_C = 24 A, V_{GE} = 15 V	T_J = 25°C			1.55	V

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Symbol	Test Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
g_{fs}	I_C = 24 A; V_{CE} = 10 V, Pulse test, t ≤ 300 µs, duty cycle ≤ 2 %	18	26		S
C_{ies}	V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		1500		pF
C_{oes}			115		pF
C_{res}			40		pF
Q_g	I_C = 24 A, V_{GE} = 15 V, V_{CE} = 300 V		66		nC
Q_{ge}			9		nC
Q_{gc}			22		nC
$t_{d(on)}$	**Inductive load, T_J = 25°C**		13		ns
t_{ri}	I_C = 24 A, V_{GE} = 15 V		15		ns
$t_{d(off)}$	V_{CE} = 400 V, R_G = 5 Ω		150	300	ns
t_{fi}			150	250	ns
E_{off}			0.64	1.2	mJ
$t_{d(on)}$	**Inductive load, T_J = 125°C**		13		ns
t_{ri}	I_C = 24 A, V_{GE} = 15 V		17		ns
E_{on}	V_{CE} = 400 V, R_G = 5 Ω		0.22		mJ
$t_{d(off)}$			300		ns
t_{fi}			250		ns
E_{off}			1.2		mJ
R_{thJC}				0.65	K/W
R_{thCK}	(TO-247)		0.25		K/W

TO-247 AD Outline



Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	4.7	5.3	.185	.209
A_1	2.2	2.54	.087	.102
A_2	2.2	2.6	.059	.098
b	1.0	1.4	.040	.055
b_1	1.65	2.13	.065	.084
b_2	2.87	3.12	.113	.123
C	.4	.8	.016	.031
D	20.80	21.46	.819	.845
E	15.75	16.26	.610	.640
e	5.20	5.72	0.205	0.225
L	19.81	20.32	.780	.800
L1		4.50		.177
∅P	3.55	3.65	.140	.144
Q	5.89	6.40	0.232	0.252
R	4.32	5.49	.170	.216
S	6.15 BSC		242 BSC	

IXYS reserves the right to change limits, test conditions, and dimensions.

IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents: 4,835,592 4,850,072 4,881,106 4,931,844 5,017,508 5,034,796 5,049,961 5,063,307 5,187,117 5,237,481 5,381,025 5,486,715 6,162,665 6,259,123 B1 6,306,728 B1 6,404,065 B1 6,534,343 6,583,505 6,683,344 6,710,405 B2 6,710,463 6,727,585 6,759,692 6771478 B2