Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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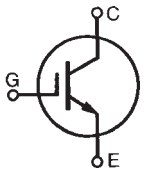
IXYS

Advance Technical Information

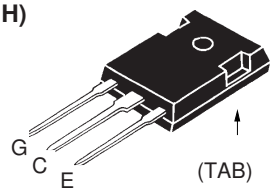
GenX3™ 300V IGBT IXGH60N30C3

V_{CES} = 300V
I_{C110} = 60A
$V_{CE(sat)}$ ≤ 1.8V
$t_{fi\ typ}$ = 70ns

High Speed IGBTs for 50-150kHz switching



TO-247 AD (IXGH)



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

Symbol	Test Conditions	Maximum Ratings	
V_{CES}	T_J = 25°C to 150°C	300	V
V_{CGR}	T_J = 25°C to 150°C, R_{GE} = 1MΩ	300	V
V_{GES}	Continuous	±20	V
V_{GEM}	Transient	±30	V
I_{C25}	T_C = 25°C (Limited by leads)	75	A
I_{C110}	T_C = 110°C (chip capability)	60	A
I_{CM}	T_C = 25°C, 1ms	420	A
I_A	T_C = 25°C	60	A
E_{AS}	T_C = 25°C	400	mJ
SSOA (RBSOA)	V_{GE} = 15V, T_{VJ} = 125°C, R_G = 5Ω Clamped inductive load @ ≤ 300V	I_{CM} = 170	A
P_C	T_C = 25°C	300	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
T_L	Maximum lead temperature for soldering	300	°C
T_{SOLD}	1.6 mm (0.062 in.) from case for 10s	260	°C
M_d	Mounting torque (TO-247)	1.13/10	Nm/lb.in.
Weight		6	g

Symbol	Test Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) Min.	Typ.	Max.	
BV_{CES}	I_C = 250μA, V_{GE} = 0V	300			V
$V_{GE(th)}$	I_C = 250μA, V_{CE} = V_{GE}	2.5		5.0	V
I_{CES}	V_{CE} = V_{CES}			30	μA
	V_{GE} = 0V, T_J = 125°C			750	μA
I_{GES}	V_{CE} = 0V, V_{GE} = ± 20V			±100	nA
$V_{CE(sat)}$	I_C = 60A, V_{GE} = 15V		1.55	1.8	V
	T_J = 125°C		1.60		V

Features

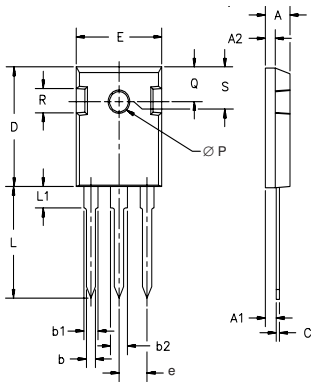
- High Frequency IGBT
- Square RBSOA
- High avalanche capability
- Drive simplicity with MOS Gate Turn-On
- High current handling capability

Applications

- PFC Circuits
- PDP Systems
- Switched-mode and resonant-mode converters and inverters
- SMPS
- AC motor speed control
- DC servo and robot drives
- DC choppers

Symbol	Test Conditions (T_J = 25°C, unless otherwise specified)	Characteristic Values Min.	Typ.	Max.	
g_{fs}	I_C = 0.5 • I_{C110}, V_{CE} = 10V Pulse test, t ≤ 300µs; duty cycle, d ≤ 2%.	28	46		S
C_{ies}	V_{CE} = 25V, V_{GE} = 0V, f = 1MHz		3800		pF
C_{oes}			240		pF
C_{res}			63		pF
Q_g	I_C = I_{C110}, V_{GE} = 15V, V_{CE} = 0.5 • V_{CES}		101		nC
Q_{ge}			21		nC
Q_{gc}			37		nC
$t_{d(on)}$	**Inductive Load, T_J = 25°C** I_C = 0.5 • I_{C110}, V_{GE} = 15V V_{CE} = 200V, R_G = 5Ω		23		ns
t_{ri}			28		ns
E_{on}			0.15		mJ
$t_{d(off)}$			108	160	ns
t_{fi}			68		ns
E_{off}			0.30	0.55	mJ
$t_{d(on)}$	**Inductive Load, T_J = 125°C** I_C = 0.5 • I_{C110}, V_{GE} = 15V V_{CE} = 200V, R_G = 5Ω		22		ns
t_{ri}			28		ns
E_{on}			0.26		mJ
$t_{d(off)}$			120		ns
t_{fi}			101		ns
E_{off}			0.40		mJ
R_{thJC}				0.42	°C/W
R_{thCK}			0.21		°C/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
ØP	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	

ADVANCE TECHNICAL INFORMATION

The product presented herein is under development. The Technical Specifications offered are derived from a subjective evaluation of the design, based upon prior knowledge and experience, and constitute a "considered reflection" of the anticipated result. IXYS reserves the right to change limits, test conditions, and dimensions without notice.