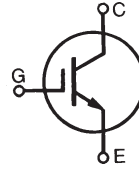


### GenX3™ 1000V IGBT

### IXGH32N100A3 IXGT32N100A3

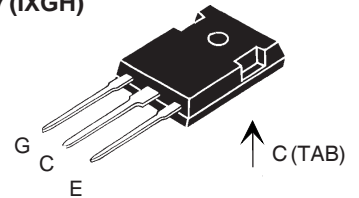
$V_{CES} = 1000V$   
 $I_{C25} = 75A$   
 $V_{CE(sat)} \leq 2.2V$

Ultra-low  $V_{sat}$  PT IGBTs  
for up to 4 kHz switching

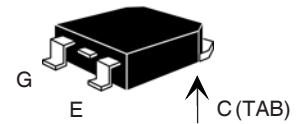


Symbol	Test Conditions	Maximum Ratings	
$V_{CES}$	$T_C = 25^\circ C$ to $150^\circ C$	1000	V
$V_{CGR}$	$T_J = 25^\circ C$ to $150^\circ C$ , $R_{GE} = 1M\Omega$	1000	V
$V_{GES}$	Continuous	$\pm 20$	V
$V_{GEM}$	Transient	$\pm 30$	V
$I_{C25}$	$T_C = 25^\circ C$ , IGBT chip capability	75	A
$I_{C110}$	$T_C = 110^\circ C$	32	A
$I_{CM}$	$T_J \leq 150^\circ C$ , $tp < 300\mu s$	200	A
$I_{AS}$	$T_C = 25^\circ C$	20	A
$E_{AS}$	$T_C = 25^\circ C$	120	mJ
<b>SSOA</b> <b>(RBSOA)</b>	$V_{GE} = 15V$ , $T_{VJ} = 125^\circ C$ , $R_G = 10\Omega$ Clamped inductive load @ $\leq 0.8 \cdot V_{CES}$	$I_{CM} = 150$	A
$P_C$	$T_C = 25^\circ C$	300	W
$T_J$		-55 ... +150	$^\circ C$
$T_{JM}$		150	$^\circ C$
$T_{stg}$		-55 ... +150	$^\circ C$
$T_L$	1.6mm (0.062 in.) from case for 10s	300	$^\circ C$
$T_{SOLD}$	Plastic body for 10 seconds	260	$^\circ C$
$M_d$	Mounting torque (TO-247)	1.13 / 10	Nm/lb.in.
<b>Weight</b>	TO-247	6	g
	TO-268	5	g

TO-247 (IXGH)



TO-268 (IXGT)



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

#### Features

- International standard packages
- Low saturation voltage
- Avalanche Rated
- MOS gate turn-on - drive simplicity
- Epoxy molding meets UL 94V-O

#### Applications

- Pulser circuits
- Capacitor discharge

Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
$BV_{CES}$	$I_C = 250\mu A$ , $V_{GE} = 0V$	1000		V
$V_{GE(th)}$	$I_C = 250\mu A$ , $V_{CE} = V_{GE}$	3.0		5.0 V
$I_{CES}$	$V_{CE} = V_{CES}$			50 $\mu A$
	$V_{GE} = 0V$ $T_J = 125^\circ C$			1 mA
$I_{GES}$	$V_{CE} = 0V$ , $V_{GE} = \pm 20V$			$\pm 100$ nA
$V_{CE(sat)}$	$I_C = 32A$ , $V_{GE} = 15V$ , Note 1 $T_J = 125^\circ C$	1.90		2.2 V
		2.05		V

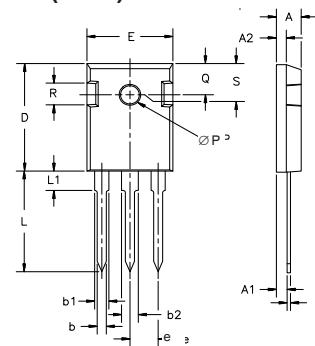
Symbol	Test Conditions ( $T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
$g_{fs}$	$I_C = 32\text{A}, V_{CE} = 10\text{V}$ , Note 1	14	20	S
$C_{ies}$	$V_{CE} = 25\text{V}, V_{GE} = 0\text{V}, f = 1\text{MHz}$		2250	pF
$C_{oes}$			130	pF
$C_{res}$			48	pF
$Q_{g(on)}$	$I_C = 32\text{A}, V_{GE} = 15\text{V}, V_{CE} = 0.5 \cdot V_{CES}$		87	nC
$Q_{ge}$			16	nC
$Q_{gc}$			35	nC
$t_{d(on)}$	<b>Inductive Load, <math>T_J = 25^\circ\text{C}</math></b> $I_C = 32\text{A}, V_{GE} = 15\text{V}$ $V_{CE} = 800\text{V}, R_G = 10\Omega$		24	ns
$t_{ri}$			51	ns
$E_{on}$			2.6	mJ
$t_{d(off)}$			385	700 ns
$t_{fi}$			540	800 ns
$E_{off}$			9.5	14 mJ
$t_{d(on)}$	<b>Inductive Load, <math>T_J = 125^\circ\text{C}</math></b> $I_C = 32\text{A}, V_{GE} = 15\text{V}$ $V_{CE} = 800\text{V}, R_G = 10\Omega$		52	ns
$t_{ri}$			23	ns
$E_{on}$			4.2	mJ
$t_{d(off)}$			400	ns
$t_{fi}$			770	ns
$E_{off}$			13	mJ
$R_{thJC}$			0.42	$^\circ\text{C}/\text{W}$
$R_{thCS}$	TO-247	0.21		$^\circ\text{C}/\text{W}$

Note 1: Pulse test,  $t \leq 300\mu\text{s}$ ; duty cycle,  $d \leq 2\%$ .

### ADVANCE TECHNICAL INFORMATION

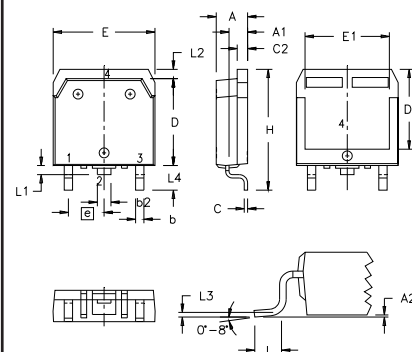
The product presented herein is under development. The Technical Specifications offered are derived from a subjective evaluation of the design, based upon prior knowledge and experience, and constitute a "considered reflection" of the anticipated result. IXYS reserves the right to change limits, test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

### TO-247 (IXGH) Outline



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.7	5.3	.185	.209
A <sub>1</sub>	2.2	2.54	.087	.102
A <sub>2</sub>	2.2	2.6	.059	.098
b	1.0	1.4	.040	.055
b <sub>1</sub>	1.65	2.13	.065	.084
b <sub>2</sub>	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

### TO-268 Outline



Terminals: 1 - Gate 2 - Collector  
3 - Emitter

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.193	.201	4.90	5.10
A1	.106	.114	2.70	2.90
A2	.001	.010	0.02	0.25
b	.045	.057	1.15	1.45
b2	.075	.083	1.90	2.10
C	.016	.026	0.40	0.65
C2	.057	.063	1.45	1.60
D	.543	.551	13.80	14.00
D1	.488	.500	12.40	12.70
E	.624	.632	15.85	16.05
E1	.524	.535	13.30	13.60
e		.215 BSC		5.45 BSC
H	.736	.752	18.70	19.10
L	.094	.106	2.40	2.70
L1	.047	.055	1.20	1.40
L2	.039	.045	1.00	1.15
L3		.010 BSC		0.25 BSC
L4	.150	.161	3.80	4.10

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

IXYS MOSFETs and IGBTs are covered 4,835,592 4,931,844 5,049,961 5,237,481 6,162,665 6,404,065 B1 6,683,344 6,727,585 7,005,734 B2 7,157,338 B2  
by one or more of the following U.S. patents: 4,850,072 5,017,508 5,063,307 5,381,025 6,259,123 B1 6,534,343 6,710,405 B2 6,759,692 7,063,975 B2  
4,881,106 5,034,796 5,187,117 5,486,715 6,306,728 B1 6,583,505 6,710,463 6,771,478 B2 7,071,537