

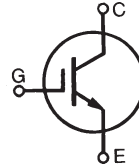
**GenX3™ 1000V IGBT**
**IXGH32N100A3  
IXGT32N100A3**

$$V_{CES} = 1000V$$

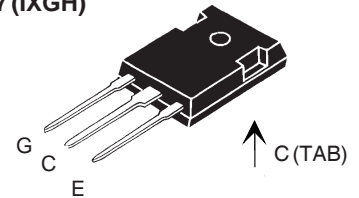
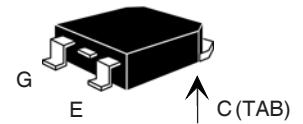
$$I_{C25} = 75A$$

$$V_{CE(sat)} \leq 2.2V$$

**Ultra-low V<sub>sat</sub> 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

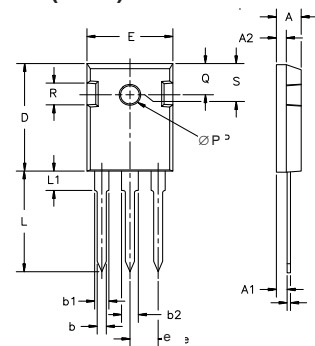
Symbol	Test Conditions ( $T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
$g_{fs}$	$I_C = 32\text{A}, V_{CE} = 10\text{V}$ , Note 1	14	20	S
$C_{ies}$	$V_{CE} = 25\text{V}, V_{GE} = 0\text{V}, f = 1\text{MHz}$		2250	pF
$C_{oes}$			130	pF
$C_{res}$			48	pF
$Q_{g(on)}$	$I_C = 32\text{A}, V_{GE} = 15\text{V}, V_{CE} = 0.5 \cdot V_{CES}$		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

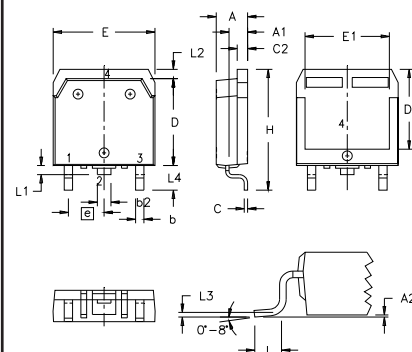
The product presented herein is under development. The Technical Specifications offered are derived from a subjective evaluation of the design, based upon prior knowledge and experience, and constitute a "considered reflection" of the anticipated result. IXYS reserves the right to change limits, test 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

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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  
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