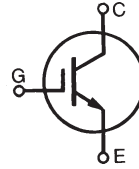


GenX3™ 1000V IGBT

IXGH32N100A3 IXGT32N100A3

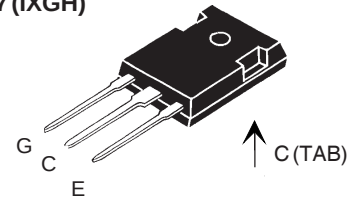
Ultra-low V_{sat} PT IGBTs
for up to 4 kHz switching



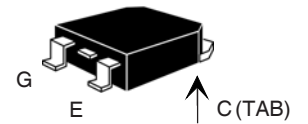
$$\begin{aligned} V_{CES} &= 1000V \\ I_{C25} &= 75A \\ V_{CE(sat)} &\leq 2.2V \end{aligned}$$

Symbol	Test Conditions	Maximum Ratings	
V_{CES}	$T_C = 25^\circ\text{C}$ to 150°C	1000	V
V_{CGR}	$T_J = 25^\circ\text{C}$ to 150°C , $R_{GE} = 1\text{M}\Omega$	1000	V
V_{GES}	Continuous	± 20	V
V_{GEM}	Transient	± 30	V
I_{C25}	$T_C = 25^\circ\text{C}$, IGBT chip capability	75	A
I_{C110}	$T_C = 110^\circ\text{C}$	32	A
I_{CM}	$T_J \leq 150^\circ\text{C}$, $t_p < 300\mu\text{s}$	200	A
I_{AS}	$T_C = 25^\circ\text{C}$	20	A
E_{AS}	$T_C = 25^\circ\text{C}$	120	mJ
SSOA (RBSOA)	$V_{GE} = 15\text{V}$, $T_{VJ} = 125^\circ\text{C}$, $R_G = 10\Omega$ Clamped inductive load @ $\leq 0.8 \cdot V_{CES}$	$I_{CM} = 150$	A
P_C	$T_C = 25^\circ\text{C}$	300	W
T_J		-55 ... +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		-55 ... +150	$^\circ\text{C}$
T_L	1.6mm (0.062 in.) from case for 10s	300	$^\circ\text{C}$
T_{SOLD}	Plastic body for 10 seconds	260	$^\circ\text{C}$
M_d	Mounting torque (TO-247)	1.13 / 10	Nm/lb.in.
Weight	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 ($T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{CES}	$I_C = 250\mu\text{A}$, $V_{GE} = 0\text{V}$	1000		V
$V_{GE(th)}$	$I_C = 250\mu\text{A}$, $V_{CE} = V_{GE}$	3.0		5.0 V
I_{CES}	$V_{CE} = V_{CES}$			50 μA
	$V_{GE} = 0\text{V}$ $T_J = 125^\circ\text{C}$			1 mA
I_{GES}	$V_{CE} = 0\text{V}$, $V_{GE} = \pm 20\text{V}$			± 100 nA
$V_{CE(sat)}$	$I_C = 32\text{A}$, $V_{GE} = 15\text{V}$, Note 1 $T_J = 125^\circ\text{C}$	1.90	2.2	V
		2.05		V

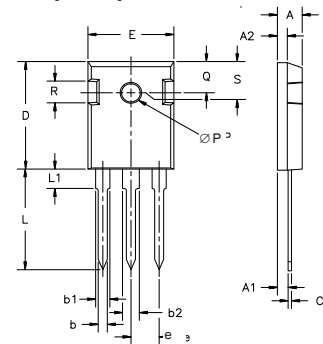
Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$I_C = 32\text{A}$, $V_{CE} = 10\text{V}$, Note 1	14	20	S
C_{ies}	$V_{CE} = 25\text{V}$, $V_{GE} = 0\text{V}$, $f = 1\text{MHz}$		2250	pF
C_{oes}			130	pF
C_{res}			48	pF
$Q_{g(on)}$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

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

ADVANCE TECHNICAL INFORMATION

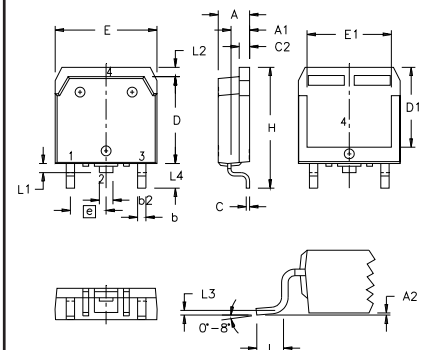
The product presented herein is under development. The Technical Specifications offered are derived from a subjective evaluation of the design, based upon prior knowledge and experience, and constitute a "considered reflection" of the anticipated result. IXYS reserves the right to change limits, test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

TO-247 (IXGH) Outline



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.7	5.3	.185	.209
A 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

TO-268 Outline



Terminals: 1 - Gate 2 - Collector
3 - Emitter

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.193	.201	4.90	5.10
A ₁	.106	.114	2.70	2.90
A ₂	.001	.010	0.02	0.25
b	.045	.057	1.15	1.45
b ₂	.075	.083	1.90	2.10
C	.016	.026	0.40	0.65
C ₂	.057	.063	1.45	1.60
D	.543	.551	13.80	14.00
D ₁	.488	.500	12.40	12.70
E	.624	.632	15.85	16.05
E ₁	.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
L ₁	.047	.055	1.20	1.40
L ₂	.039	.045	1.00	1.15
L ₃	.010	BSC	0.25	BSC
L ₄	.150	.161	3.80	4.10

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	4,931,844	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
	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	