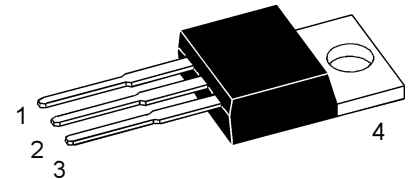


High Voltage IGBT

	V_{CES}	I_{C90}	$V_{CE(SAT)}$
IXGP 2N100	1000 V	2.0 A	2.7 V
IXGP 2N100A	1000 V	2.0 A	3.5 V

Symbol	Test Conditions	Maximum Ratings	
V_{CES}	$T_J = 25^\circ\text{C}$ 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}	$T_C = 25^\circ\text{C}$	4	A
I_{C90}	$T_C = 90^\circ\text{C}$	2	A
I_{CM}	$T_C = 25^\circ\text{C}$, 1 ms	8	A
SSOA (RBSOA)	$V_{GE} = 15\text{ V}$, $T_J = 125^\circ\text{C}$, $R_G = 150\Omega$ Clamped inductive load	$I_{CM} = 6$ @ $0.8 V_{CES}$	A
P_c	$T_C = 25^\circ\text{C}$	25	W
T_J		-55 ... +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{STG}		-55 ... +150	$^\circ\text{C}$
Weight		4	g
Max. Lead Temperature for Soldering (1.6mm from case for 10s)		300	$^\circ\text{C}$

TO-220



1 = Gate
2 = Collector
3 = Emitter
4 = Collector

Features

- International standard package
- Low $V_{CE(sat)}$
 - for low on-state conduction losses
- High current handling capability
- MOS Gate turn-on
 - drive simplicity

Applications

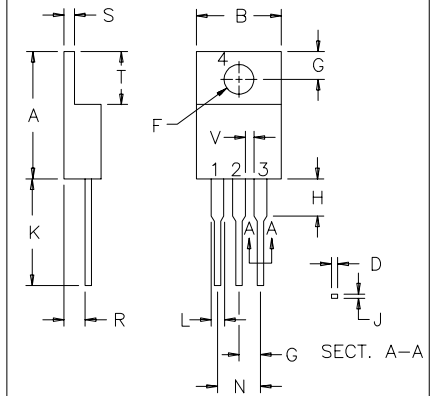
- Capacitor discharge
- Anode triggering of thyristors
- DC choppers
- Switched-mode and resonant-mode power supplies.

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{CES}	$I_C = 25\mu\text{A}$, $V_{GE} = 0\text{ V}$	1000		V
$V_{GE(th)}$	$I_C = 25\mu\text{A}$, $V_{CE} = V_{GE}$	2.5		5.0 V
I_{CES}	$V_{CE} = 0.8 V_{CES}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$		10 μA
	$V_{GE} = 0\text{ V}$			200 μA
I_{GES}	$V_{CE} = 0\text{ V}$, $V_{GE} = \pm 20\text{ V}$			$\pm 50\text{ nA}$
$V_{CE(sat)}$	$I_C = I_{C90}$, $V_{GE} = 15\text{ V}$	IXGP2N100 IXGP2N100A		2.7 V
				3.5 V

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$I_C = I_{C90}, V_{CE} = 10\text{ V}$, Pulse test, $t \leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$	0.7	1.5	S
C_{ies}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$		101	pF
C_{oes}			12	pF
C_{res}			1.8	pF
Q_g	$I_C = I_{C90}, V_{GE} = 15\text{ V}$, $V_{CE} = 0.5 V_{CES}$		7.8	nC
Q_{ge}			1.5	nC
Q_{gc}			4.2	nC
$t_{d(on)}$	Inductive load, $T_J = 25^\circ\text{C}$		15	ns
t_{ri}	$I_C = I_{C90}, V_{GE} = 15\text{ V}$		20	ns
$t_{d(off)}$	$R_G = 150\text{ }\Omega$		300	600 ns
t_{fi}	$V_{CLAMP} = 0.8 V_{CES}$	IXGP2N100	560	1000 ns
		IXGP2N100A	180	360 ns
E_{off}	Note 1	IXGP2N100	0.56	1.2 mJ
		IXGP2N100A	0.26	0.6 mJ
$t_{d(on)}$	Inductive load, $T_J = 125^\circ\text{C}$		15	ns
t_{ri}	$I_C = I_{C90}, V_{GE} = 15\text{ V}$		25	ns
$E_{(on)}$	$R_G = R_{(off)} = 150\text{ }\Omega$		0.3	mJ
$t_{d(off)}$	$V_{CLAMP} = 0.8 V_{CES}$		400	ns
t_{fi}	Note 1	IXGP2N100	800	ns
		IXGP2N100A	360	ns
		IXGP2N100	1.0	mJ
E_{off}		IXGP2N100A	0.5	mJ
R_{thJC}			5	KW
R_{thJA}			110	KW

Notes: 1. Switching times may increase for $V_{CE} \text{ (Clamp)} > 0.8 V_{CES}$,
higher T_J or increased R_G .

TO-220 Outline



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	14.23	16.51	.560	.650
B	9.66	10.66	.380	.420
C	3.56	4.82	.140	.190
D	0.64	0.89	.025	.035
F	3.54	4.06	.139	.161
G	2.29	2.79	.090	.110
H	—	6.35	—	.250
J	0.51	0.76	.020	.030
K	12.70	14.73	.500	.580
L	1.15	1.77	.045	.070
N	4.83	5.33	.190	.210
Q	2.54	3.42	.100	.135
R	2.04	2.49	.080	.115
S	0.64	1.39	.025	.055
T	5.85	6.85	2.30	2.70
V	1.15	—	.045	—

The data herein reflects the advanced objective technical specification and characterization data from engineering lots.

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 4,881,106 5,017,508 5,049,961 5,187,117 5,486,715
4,850,072 4,931,844 5,034,796 5,063,307 5,237,481 5,381,025