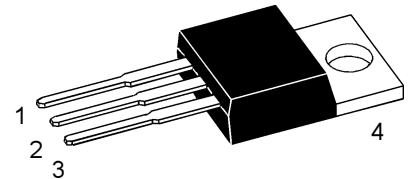


# High Voltage IGBT

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

Symbol	Test Conditions	Maximum Ratings	
$V_{CES}$	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	1000	V
$V_{CGR}$	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GE} = 1 \text{ M}\Omega$	1000	V
$V_{GES}$	Continuous	$\pm 20$	V
$V_{GEM}$	Transient	$\pm 30$	V
$I_{C25}$	$T_C = 25^\circ\text{C}$	4	A
$I_{C90}$	$T_C = 90^\circ\text{C}$	2	A
$I_{CM}$	$T_C = 25^\circ\text{C}, 1 \text{ ms}$	8	A
<b>SSOA</b> <b>(RBSOA)</b>	$V_{GE} = 15 \text{ V}, T_J = 125^\circ\text{C}, R_G = 150 \Omega$ 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	$^\circ\text{C}$
<b>Weight</b>		4	g
<b>Max. Lead Temperature for Soldering</b> (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

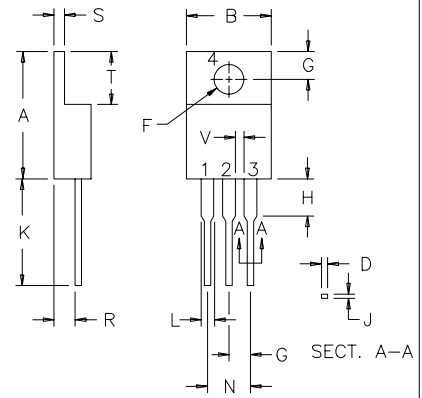
## Applications

- 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		V
$I_{CES}$	$V_{CE} = 0.8 V_{CES}$ $T_J = 25^\circ\text{C}$ $V_{GE} = 0 \text{ V}$ $T_J = 125^\circ\text{C}$			10 $\mu\text{A}$ 200 $\mu\text{A}$
$I_{GES}$	$V_{CE} = 0 \text{ V}, V_{GE} = \pm 20 \text{ V}$			$\pm 50 \text{ nA}$
$V_{CE(sat)}$	$I_C = I_{C90}, V_{GE} = 15 \text{ V}$			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, $t \leq 300\ \mu\text{s}$ , 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	
$t_{d(off)}$	$V_{CLAMP} = 0.8 V_{CES}$	$R_G = 150\ \Omega$	300	600	ns
$t_{fi}$		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	
$E_{(on)}$	$V_{CLAMP} = 0.8 V_{CES}$	$R_G = R_{(off)} = 150\ \Omega$	0.3	mJ	
$t_{d(off)}$			400	ns	
$t_{fi}$		Note 1	IXGP2N100	800	ns
		IXGP2N100A	360	ns	
$E_{off}$		IXGP2N100	1.0	mJ	
		IXGP2N100A	0.5	mJ	
$R_{thJC}$			5	KW	
$R_{thJA}$			110	KW	

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	—

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

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