IXYS

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°C to 150°C	1000	V
V_{CGR}	T_J = 25°C to 150°C; R_{GE} = 1 MΩ	1000	V
V_{GES}	Continuous	±20	V
V_{GEM}	Transient	±30	V
I_{C25}	T_C = 25°C	4	A
I_{C90}	T_C = 90°C	2	A
I_{CM}	T_C = 25°C, 1 ms	8	A
SSOA (RBSOA)	V_{GE} = 15 V, T_J = 125°C, R_G = 150Ω Clamped inductive load	I_{CM} = 6 @ 0.8 V_{CES}	A
P_C	T_C = 25°C	25	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{STG}		-55 ... +150	°C
Weight		4	g
Max. Lead Temperature for Soldering (1.6mm from case for 10s)		300	°C

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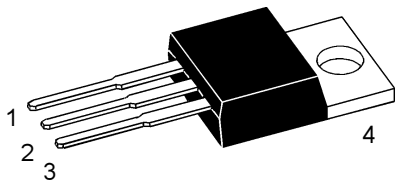

1 = Gate 2 = Collector
3 = Emitter 4 = Collector

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

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.

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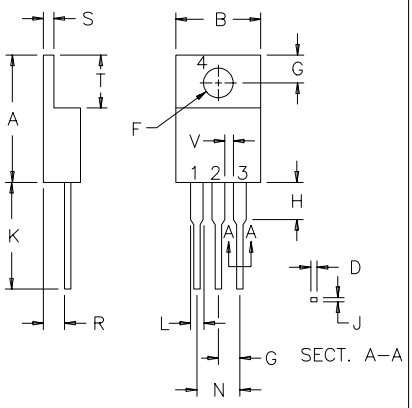
Symbol	Test Conditions (T_J = 25°C unless otherwise specified)		Characteristic Values Min.	Typ.	Max.	
g_{fs}	$I_C = I_{C90}$, V_{CE} = 10 V, Pulse test, t ≤ 300 µs, duty cycle ≤ 2 %		0.7	1.5		S
C_{ies}	V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz			101		pF
C_{oes}				12		pF
C_{res}				1.8		pF
Q_g	$I_C = I_{c90}$, V_{GE} = 15 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°C			15		ns
t_{ri}	$I_C = I_{C90}$, V_{GE} = 15 V			20		ns
$t_{d(off)}$	R_G = 150 Ω			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°C			15		ns
t_{ri}	$I_C = I_{C90}$, V_{GE} = 15 V			25		ns
$E_{(on)}$	$R_G = R_{(off)}$ = 150 Ω			0.3		mJ
$t_{d(off)}$	V_{CLAMP} = 0.8 V_{CES}			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	K/W
R_{thJA}					110	K/W

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

TO-220 Outline



Dim.	Millimeter Min.	Max.	Inches 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

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