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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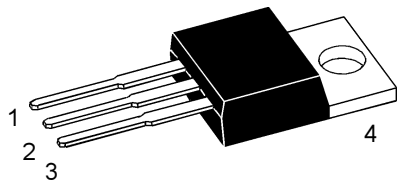


1 = Gate 2 = Collector
3 = Emitter 4 = Collector

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

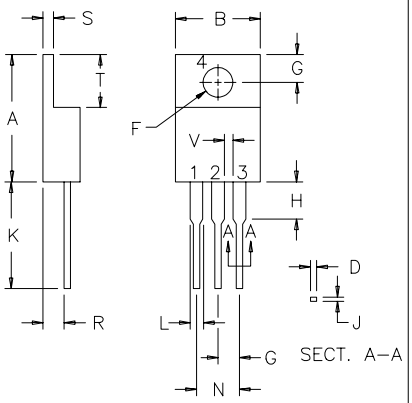
Applications

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

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.