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IXYS Corporation
IXGA15N100C

For any questions, you can email us directly:
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Distributor of IXYS Corporation: Excellent Integrated System Limited
Datasheet of IXGA15N100C - IGBT 1000V 30A 150W TO263AA
Contact us: sales@integrated-circuit.com Website: www.integrated-circuit.com

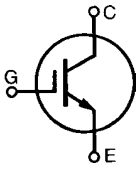
IXYS

IGBT

Lightspeed Series

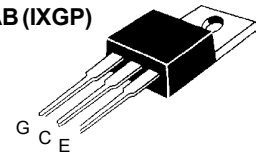
IXGA 15N100C
IXGP 15N100C

V_{CES}	=1000	V
I_{C25}	= 30	A
$V_{CE(sat)}$	= 3.5	V
$t_{fi(typ)}$	= 115	ns

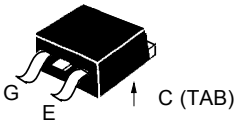


Symbol	Test Conditions	Maximum Ratings	
V_{CES}	T_J = 25°C to 150°C	1000	V
V_{CGR}	T_J = 25°C to 150°C; R_{GE} = 1 MΩ	1000	V
V_{GES}	Continuous	±20	V
V_{GEM}	Transient	±30	V
I_{C25}	T_C = 25°C	30	A
I_{C90}	T_C = 90°C	15	A
I_{CM}	T_C = 25°C, 1 ms	60	A
SSOA (RBSOA)	V_{GE} = 15 V, T_{VJ} = 125°C, R_G = 10 Ω Clamped inductive load	I_{CM} = 40 @ 0.8 V_{CES}	A
P_C	T_C = 25°C	150	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s		300	°C
M_d	Mounting torque with screw M3 Mounting torque with screw M3.5	0.45/4 0.55/5	Nm/lb.in. Nm/lb.in.
Weight	TO-220 TO-263	4 2	g g

TO-220AB (IXGP)



TO-263 AA (IXGA)



Symbol	Test Conditions (T_J = 25°C, unless otherwise specified)		Characteristic Values Min.	Typ.	Max.	
BV_{CES}	I_C = 250 µA, V_{GE} = 0 V		1000			V
$V_{GE(th)}$	I_C = 250 µA, V_{CE} = V_{GE}		2.5		5.0	V
I_{CES}	V_{CE} = V_{CES}	T_J = 25°C			100	µA
	V_{GE} = 0 V	T_J = 125°C			3.0	mA
I_{GES}	V_{CE} = 0 V, V_{GE} = ±20 V				±100	nA
$V_{CE(sat)}$	I_C = I_{CE90}, V_{GE} = 15				3.5	V
		T_J = 125°C		2.6		V

Features

- International standard packages JEDEC TO-220AB and TO-263AA
- Low switching losses
- MOS Gate turn-on
  - drive simplicity

Applications

- AC motor speed control
- DC servo and robot drives
- DC choppers
- Uninterruptible power supplies (UPS)
- Switch-mode and resonant-mode power supplies

Advantages

- Easy to mount with one screw
- Reduces assembly time and cost
- High power density

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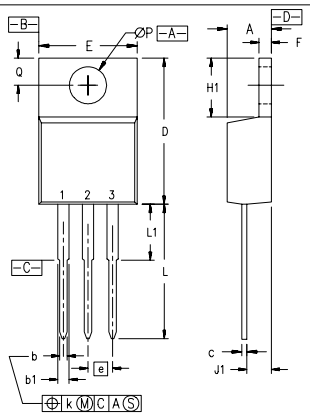
IXGA 15N100C
IXGP 15N100C

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 %	12	16		S
C_{ies}	V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		1720		pF
C_{oes}			95		pF
C_{res}			35		pF
Q_g	$I_C = I_{C90}$, V_{GE} = 15 V, V_{CE} = 0.5 V_{CES}		73		nC
Q_{ge}			13		nC
Q_{gc}			26		nC
$t_{d(on)}$	**Inductive load, T_J = 25°C**		25		ns
t_{ri}	$I_C = I_{C90}$, V_{GE} = 15 V		15		ns
$t_{d(off)}$	V_{CE} = 960 V, $R_G = R_{off}$ = 10 Ω		150	200	ns
t_{fi}	Remarks: Switching times may		101	160	ns
E_{off}	increase for V_{CE} (Clamp) > 0.8 V_{CES}, higher T_J or increased R_G		0.85	1.40	mJ
$t_{d(on)}$	**Inductive load, T_J = 125°C**		25		ns
t_{ri}	$I_C = I_{C90}$, V_{GE} = 15 V		18		ns
E_{on}	V_{CE} = 960 V, $R_G = R_{off}$ = 10 Ω		0.60		mJ
$t_{d(off)}$	Remarks: Switching times may		220		ns
t_{fi}	increase for V_{CE} (Clamp) > 0.8 V_{CES},		210		ns
E_{off}	higher T_J or increased R_G		1.85		mJ
R_{thJC}				0.83	K/W
R_{thCK}	TO-220		0.5		K/W

TO-220 AB Dimensions

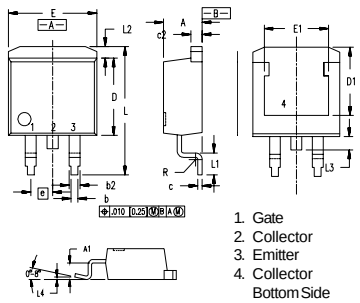


Pins: 1 - Gate 2 - Collector
3 - Emitter 4 - Collector
Bottom Side

SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	.170	.190	4.32	4.83
b	.025	.040	0.64	1.02
b1	.045	.065	1.15	1.65
c	.014	.022	0.35	0.56
D	.580	.630	14.73	16.00
E	.390	.420	9.91	10.66
e	.100 BSC		2.54 BSC	
F	.045	.055	1.14	1.40
H1	.230	.270	5.85	6.85
J1	.090	.110	2.29	2.79
k	0	.015	0	0.38
L	.500	.550	12.70	13.97
L1	.110	.230	2.79	5.84
ØP	.139	.161	3.53	4.08
Q	.100	.125	2.54	3.18

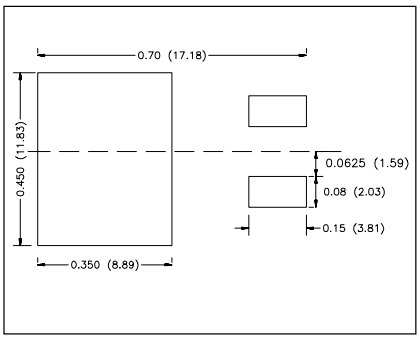
NOTE: This drawing will meet all dimensions requirement of JEDEC outline TO-220 AB.

TO-263 AA Outline



1. Gate
2. Collector
3. Emitter
4. Collector
Bottom Side

Dim.	Millimeter Min.	Millimeter Max.	Inches Min.	Inches Max.
A	4.06	4.83	.160	.190
A1	2.03	2.79	.080	.110
b	0.51	0.99	.020	.039
b2	1.14	1.40	.045	.055
c	0.46	0.74	.018	.029
c2	1.14	1.40	.045	.055
D	8.64	9.65	.340	.380
D1	7.11	8.13	.280	.320
E	9.65	10.29	.380	.405
E1	6.86	8.13	.270	.320
e	2.54	BSC	.100	BSC
L	14.61	15.88	.575	.625
L1	2.29	2.79	.090	.110
L2	1.02	1.40	.040	.055
L3	1.27	1.78	.050	.070
L4	0	0.38	0	.015
R	0.46	0.74	.018	.029



Min. Recommended Footprint
(Dimensions in inches and mm)

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 6,306,728B1 4,850,072 4,931,844 5,034,796 5,063,307 5,237,481 5,381,025