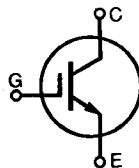


IGBT

Lightspeed Series

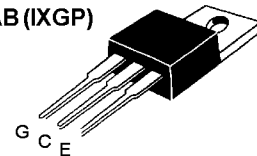
IXGA 15N120C
IXGP 15N120C

$V_{CES} = 1200 \text{ V}$
 $I_{C25} = 30 \text{ A}$
 $V_{CE(sat)} = 3.8 \text{ V}$
 $t_{fi(typ)} = 115 \text{ ns}$

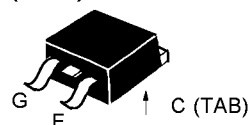


Symbol	Test Conditions	Maximum Ratings	
V_{CES}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	1200	V
V_{CGR}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GE} = 1 \text{ M}\Omega$	1200	V
V_{GES}	Continuous	± 20	V
V_{GEM}	Transient	± 30	V
I_{C25}	$T_C = 25^\circ\text{C}$	30	A
I_{C90}	$T_C = 90^\circ\text{C}$	15	A
I_{CM}	$T_C = 25^\circ\text{C}, 1 \text{ ms}$	60	A
SSOA (RBSOA)	$V_{GE} = 15 \text{ V}, T_{VJ} = 125^\circ\text{C}, R_G = 10 \Omega$ Clamped inductive load	$I_{CM} = 40$ @ $0.8 V_{CES}$	A
P_C	$T_C = 25^\circ\text{C}$	150	W
T_J		-55 ... +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		-55 ... +150	$^\circ\text{C}$
Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s		300	$^\circ\text{C}$
M_d	Mounting torque with screw M3 Mounting torque with screw M3.5	0.45/4 Nm/lb.in. 0.55/5 Nm/lb.in.	
Weight	TO-220 TO-263	4 2	g g

TO-220AB (IXGP)



TO-263 AA (IXGA)



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

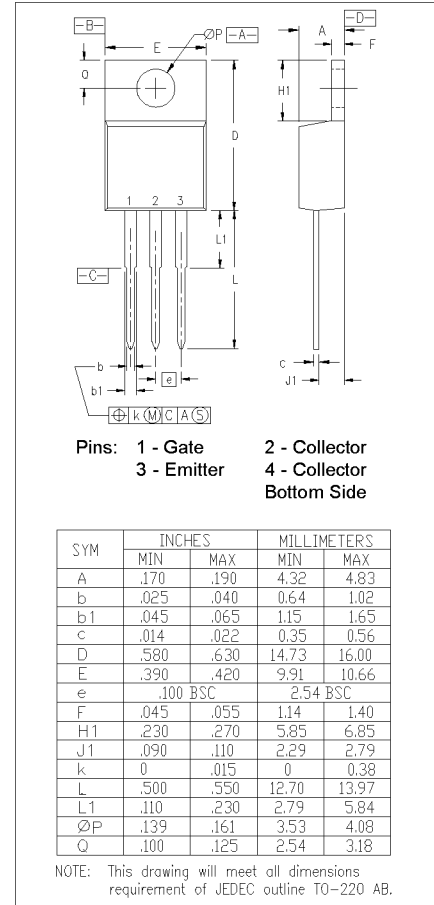
Advantages

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

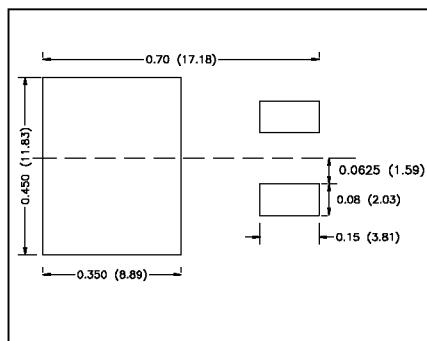
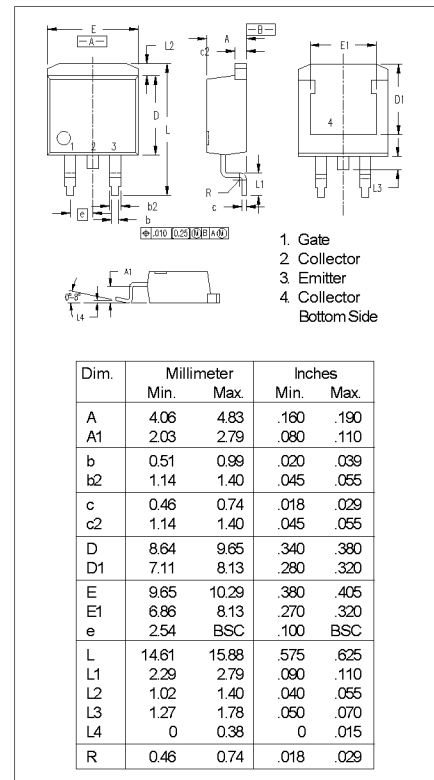
Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{CES}	$I_C = 250 \mu\text{A}, V_{GE} = 0 \text{ V}$	1200		V
$V_{GE(th)}$	$I_C = 250 \mu\text{A}, V_{CE} = V_{GE}$	2.5		5.0 V
I_{CES}	$V_{CE} = V_{CES}$ $V_{GE} = 0 \text{ V}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$		100 μA 3.5 mA
I_{GES}	$V_{CE} = 0 \text{ V}, V_{GE} = \pm 20 \text{ V}$			$\pm 100 \text{ nA}$
$V_{CE(sat)}$	$I_C = I_{CE90}, V_{GE} = 15$ $T_J = 125^\circ\text{C}$	3.0		3.8 V

Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$I_C = I_{C90}, V_{CE} = 10 V$, Pulse test, $t \leq 300 \mu s$, duty cycle $\leq 2 \%$	12	15	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	$I_C = I_{C90}, V_{GE} = 15 V, V_{CE} = 0.5 V_{CES}$		69	nC
Q_{ge}			13	nC
Q_{gc}			26	nC
$t_{d(on)}$	Inductive load, $T_J = 25^\circ C$ $I_C = I_{C90}, V_{GE} = 15 V$ $V_{CE} = 960 V, R_G = R_{off} = 10 \Omega$ Remarks: Switching times may increase for $V_{CE} (Clamp) > 0.8 V_{CES}$, higher T_J or increased R_G		25	ns
t_{ri}			15	ns
$t_{d(off)}$			150	200 ns
t_{fi}			115	190 ns
E_{off}			1.05	1.6 mJ
$t_{d(on)}$	Inductive load, $T_J = 125^\circ C$ $I_C = I_{C90}, V_{GE} = 15 V$ $V_{CE} = 960 V, R_G = R_{off} = 10 \Omega$ Remarks: Switching times may increase for $V_{CE} (Clamp) > 0.8 V_{CES}$, higher T_J or increased R_G		25	ns
t_{ri}			18	ns
E_{on}			0.60	mJ
$t_{d(off)}$			220	ns
t_{fi}			250	ns
E_{off}			2.1	mJ
R_{thJC}	TO-220			0.83 KW
R_{thCK}			0.5	KW

TO-220 AB Dimensions



TO-263AA Outline



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
4,850,072 4,931,844 5,034,796 5,063,307 5,237,481 5,381,025