

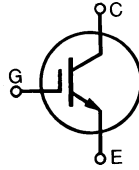
# IGBT

**IXGA 4N100**  
**IXGP 4N100**

$$V_{CES} = 1000 \text{ V}$$

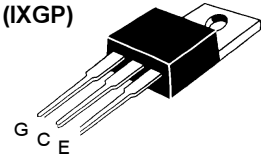
$$I_{C25} = 8 \text{ A}$$

$$V_{CE(sat)} = 2.7 \text{ V}$$

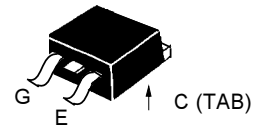


Symbol	Test Conditions	Maximum Ratings	
$V_{CES}$	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	1000	V
$V_{CGR}$	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GE} = 1 \text{ M}\Omega$	1000	V
$V_{GES}$	Continuous	$\pm 20$	V
$V_{GEM}$	Transient	$\pm 30$	V
$I_{C25}$	$T_C = 25^\circ\text{C}$	8	A
$I_{C90}$	$T_C = 90^\circ\text{C}$	4	A
$I_{CM}$	$T_C = 25^\circ\text{C}, 1 \text{ ms}$	16	A
<b>SSOA</b> <b>(RBSOA)</b>	$V_{GE} = 15 \text{ V}, T_{VJ} = 125^\circ\text{C}, R_G = 120 \Omega$ Clamped inductive load	$I_{CM} = 8$ @ $0.8 V_{CES}$	A
$P_C$	$T_C = 25^\circ\text{C}$	40	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	0.45/4	Nm/lb.in.
	Mounting torque with screw M3.5	0.55/5	Nm/lb.in.
<b>Weight</b>	TO-220	4	g
	TO-263	2	g

TO-220AB (IXGP)



TO-263 AA (IXGA)



## Features

- International standard packages  
JEDEC TO-220AB and TO-263AA
- High current handling capability
- 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
- Capacitor discharge

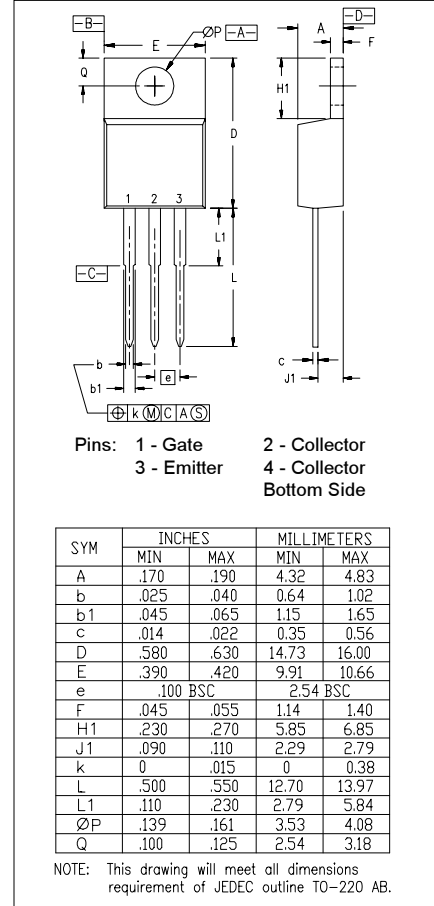
## Advantages

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

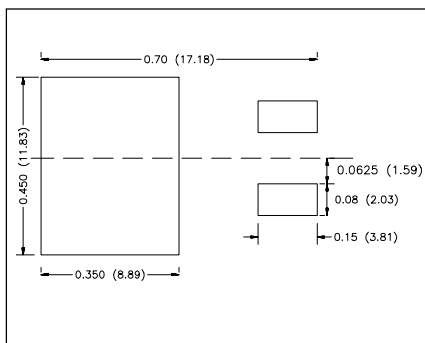
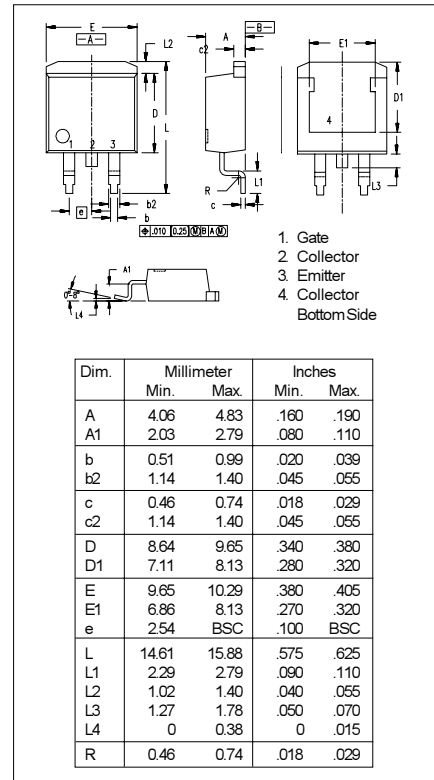
Symbol	Test Conditions ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
$BV_{CES}$	$I_C = 250 \mu\text{A}, V_{GE} = 0 \text{ V}$	1000		V
$V_{GE(th)}$	$I_C = 100 \mu\text{A}, V_{CE} = V_{GE}$	2.5		V
$I_{CES}$	$V_{CE} = 0.8 \cdot V_{CES}$	$T_J = 25^\circ\text{C}$		25 $\mu\text{A}$
	$V_{GE} = 0 \text{ V}$	$T_J = 125^\circ\text{C}$		250 $\mu\text{A}$
$I_{GES}$	$V_{CE} = 0 \text{ V}, V_{GE} = \pm 20 \text{ V}$			$\pm 100 \text{ nA}$
$V_{CE(sat)}$	$I_C = I_{CE90}, V_{GE} = 15 \text{ V}$		2.2	2.7 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 $\leq 2\%$	2.5	4	S	
$C_{ies}$	$V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$		343	pF	
$C_{oes}$			21	pF	
$C_{res}$			5	pF	
$I_{C(ON)}$	$V_{GE} = 10\text{ V}, V_{CE} = 10\text{ V}$		21	A	
$Q_g$	$I_C = I_{C90}, V_{GE} = 15\text{ V}, V_{CE} = 0.5 V_{CES}$		13.6	nC	
$Q_{ge}$			2.5	nC	
$Q_{gc}$			6.5	nC	
$t_{d(on)}$	<b>Inductive load, <math>T_J = 25^\circ\text{C}</math></b> $I_C = I_{C90}, V_{GE} = 15\text{ V}$ $V_{CE} = 800\text{ V}, R_G = R_{off} = 120\ \Omega$ Remarks: Switching times may increase for $V_{CE}(\text{Clamp}) > 0.8 V_{CES}$ , higher $T_J$ or increased $R_G$		20	ns	
$t_{ri}$			25	ns	
$t_{d(off)}$			390	800	ns
$t_{fi}$			340	700	ns
$E_{off}$			0.9	2.0	mJ
$t_{d(on)}$	<b>Inductive load, <math>T_J = 125^\circ\text{C}</math></b> $I_C = I_{C90}, V_{GE} = 15\text{ V}$ $V_{CE} = 800\text{ V}, R_G = R_{off} = 120\ \Omega$ Remarks: Switching times may increase for $V_{CE}(\text{Clamp}) > 0.8 V_{CES}$ , higher $T_J$ or increased $R_G$		20	ns	
$t_{ri}$			25	ns	
$E_{on}$			0.16	mJ	
$t_{d(off)}$			700	ns	
$t_{fi}$			520	ns	
$E_{off}$		2.0	mJ		
$R_{thJC}$			3.1	KW	
$R_{thCK}$	TO-220	0.5		KW	

### TO-220 AB Dimensions



### TO-263 AA 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