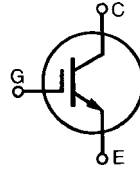


IGBT

IXGA 20N100
IXGP 20N100

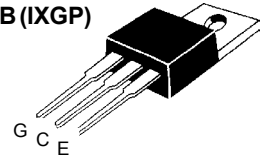
$V_{CES} = 1000 \text{ V}$
 $I_{C25} = 40 \text{ A}$
 $V_{CE(sat)} = 3.0 \text{ V}$

Preliminary Data Sheet

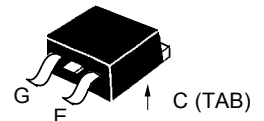


Symbol	Test Conditions	Maximum Ratings	
V_{CES}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	1000	V
V_{CGR}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GE} = 1 \text{ M}\Omega$	1000	V
V_{GES}	Continuous	± 20	V
V_{GEM}	Transient	± 30	V
I_{C25}	$T_C = 25^\circ\text{C}$	40	A
I_{C90}	$T_C = 90^\circ\text{C}$	20	A
I_{CM}	$T_C = 25^\circ\text{C}, 1 \text{ ms}$	80	A
SSOA (RBSOA)	$V_{GE} = 15 \text{ V}, T_{VJ} = 125^\circ\text{C}, R_G = 47 \Omega$ Clamped inductive load, $L = 300 \mu\text{H}$	$I_{CM} = 40$ @ $0.8 V_{CES}$	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
- 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

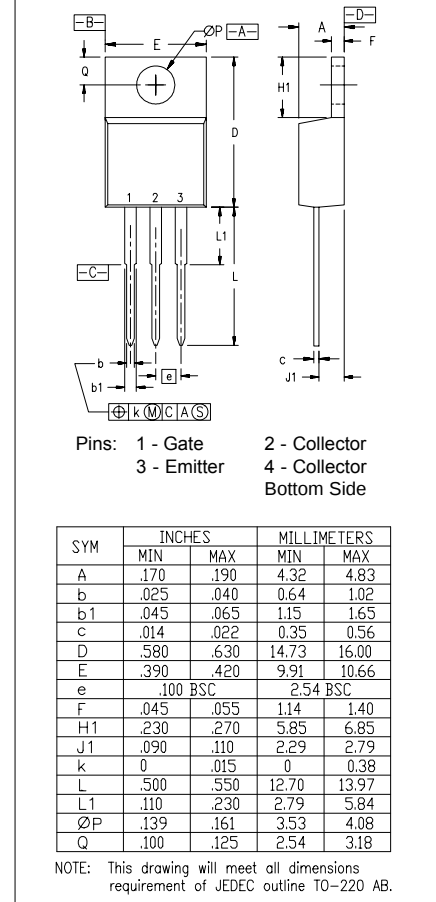
Advantages

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

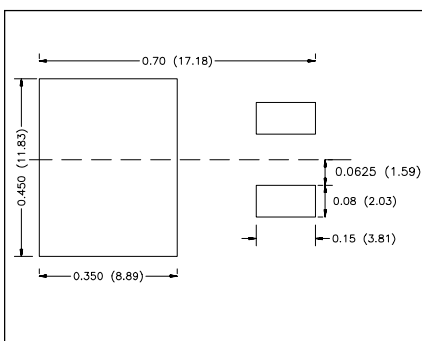
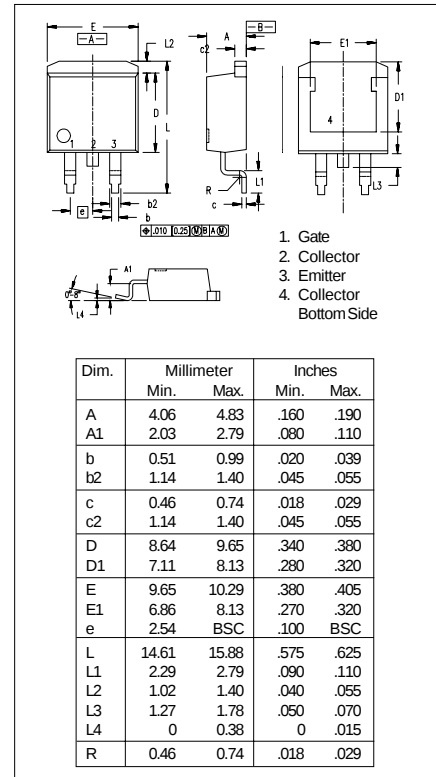
Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{CES}	$I_C = 1 \text{ mA}, V_{GE} = 0 \text{ V}$	1000		V
$V_{GE(th)}$	$I_C = 250 \mu\text{A}, V_{CE} = V_{GE}$	2.5		5.0 V
I_{CES}	$V_{CE} = V_{CES}$ $V_{GE} = 0 \text{ V}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$		250 μA 1 mA
I_{GES}	$V_{CE} = 0 \text{ V}, V_{GE} = \pm 20 \text{ V}$			$\pm 100 \text{ nA}$
$V_{CE(sat)}$	$I_C = I_{CE90}, V_{GE} = 15$		2.2	3.0 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, $t \leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$	12	16	S
C_{ies}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$		1750	pF
C_{oes}			100	pF
C_{res}			38	pF
$I_{C(ON)}$	$V_{GE} = 10\text{ V}$, $V_{CE} = 10\text{ V}$		90	A
Q_g	$I_C = I_{C90}$, $V_{GE} = 15\text{ V}$, $V_{CE} = 0.5\text{ V}_{CES}$		73	nC
Q_{ge}			13	nC
Q_{gc}			26	nC
$t_{d(on)}$	Inductive load, $T_J = 25^\circ\text{C}$		30	ns
t_{ri}	$I_C = I_{C90}$, $V_{GE} = 15\text{ V}$		30	ns
$t_{d(off)}$	$V_{CE} = 800\text{ V}$, $R_G = R_{off} = 47\text{ }\Omega$	350	700	ns
t_{fi}	Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8\text{ V}_{CES}$, higher T_J or increased R_G	280	700	ns
E_{off}		3.5	8.0	mJ
$t_{d(on)}$	Inductive load, $T_J = 125^\circ\text{C}$		30	ns
t_{ri}	$I_C = I_{C90}$, $V_{GE} = 15\text{ V}$		30	ns
E_{on}	$V_{CE} = 800\text{ V}$, $R_G = R_{off} = 47\text{ }\Omega$	0.65		mJ
$t_{d(off)}$	Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8\text{ V}_{CES}$, higher T_J or increased R_G	700		ns
t_{fi}		520		ns
E_{off}		6.5		mJ
R_{thJC}			0.83	K/W
R_{thCK}	TO-220	0.5		K/W

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

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