



Advance Technical Information

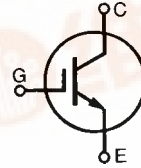
HIGH Voltage IGBT

IXSA 15N120B

IXSP 15N120B

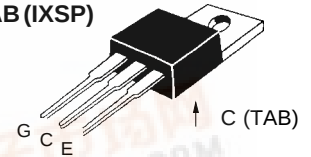
$$\begin{aligned} V_{CES} &= 1200 \text{ V} \\ I_{C25} &= 30 \text{ A} \\ V_{CE(sat)} &= 3.4 \text{ V} \end{aligned}$$

"S" Series - Improved SCSOA Capability

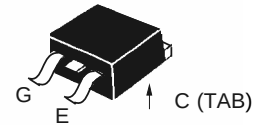


Symbol	Test Conditions	Maximum Ratings	
V_{CES}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	1200	V
V_{CGR}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GE} = 1 \text{ M}\Omega$	1200	V
V_{GES}	Continuous	± 20	V
V_{GEM}	Transient	± 30	V
I_{C25}	$T_C = 25^\circ\text{C}$	30	A
I_{C90}	$T_C = 90^\circ\text{C}$	15	A
I_{CM}	$T_C = 25^\circ\text{C}, 1 \text{ ms}$	60	A
SSOA (RBSOA)	$V_{GE} = 15 \text{ V}, T_J = 125^\circ\text{C}, R_G = 10 \Omega$ Clamped inductive load	$I_{CM} = 40$ @ $0.8 V_{CES}$	A
t_{SC}	$T_J = 125^\circ\text{C}, V_{GE} = 720 \text{ V}; V_{GE} = 15 \text{ V}, R_G = 10 \Omega$ Non repetitive	10	μs
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	$^\circ\text{C}$
M_d	Mounting torque (TO-247)	1.13/10	Nm/lb.in.
Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s		300	$^\circ\text{C}$
Maximum tab temperature for soldering (TO-263)		260	$^\circ\text{C}$
Weight	TO-220	4	g
	TO-263	2	g

TO-220AB (IXSP)



TO-263 AA (IXSA)



Features

- International standard packages JEDEC TO-220AB and TO-263AA
- Low switching losses, low V_{sat}
- 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

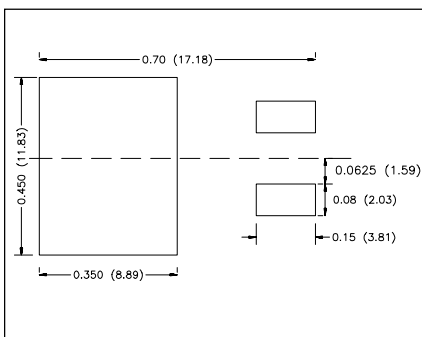
Advantages

- 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
$V_{GE(th)}$	$I_C = 250 \mu\text{A}, V_{CE} = V_{GE}$	3		V
I_{CES}	$V_{CE} = V_{CES}$	$T_J = 25^\circ\text{C}$		50 μA
	$V_{GE} = 0 \text{ V}$	$T_J = 125^\circ\text{C}$		2.5 mA
I_{GES}	$V_{CE} = 0 \text{ V}, V_{GE} = \pm 20 \text{ V}$			$\pm 100 \text{ nA}$
$V_{CE(sat)}$	$I_C = I_{CE90}, V_{GE} = 15$	3.0	3.4	V
	$T_J = 125^\circ\text{C}$	2.8		V

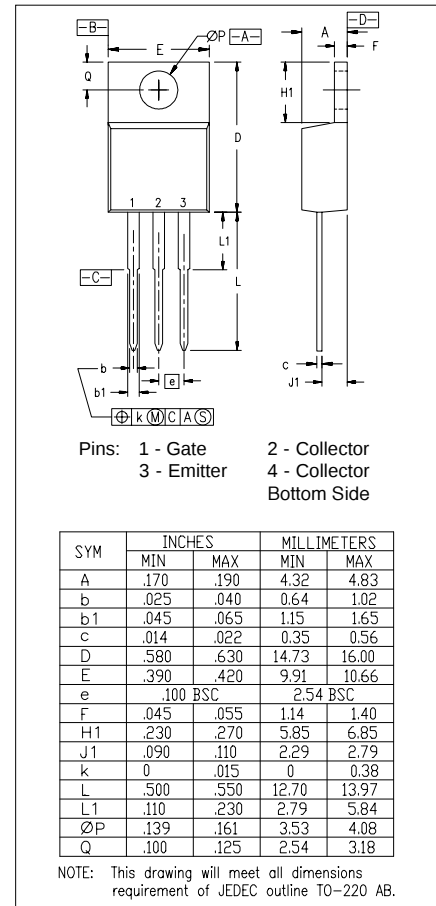
Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$I_C = I_{C90}, V_{CE} = 10\text{ V}$, Note2	7	9.5	S
C_{ies}	$V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$		1400	pF
C_{oes}			98	pF
C_{res}			37	pF
Q_g	$I_C = I_{C90}, V_{GE} = 15\text{ V}, V_{CE} = 0.5 V_{CES}$		57	nC
Q_{ge}			14	nC
Q_{gc}			25	nC
$t_{d(on)}$	Inductive load, $T_J = 25^\circ\text{C}$ $I_C = I_{C90}, V_{GE} = 15\text{ V}$ $V_{CE} = 960\text{ V}, R_G = R_{off} = 10\ \Omega$ Note3		30	ns
t_{ri}			25	ns
$t_{d(off)}$			148	ns
t_{fi}			160	ns
E_{off}			1.75	mJ
$t_{d(on)}$	Inductive load, $T_J = 125^\circ\text{C}$ $I_C = I_{C90}, V_{GE} = 15\text{ V}$ $V_{CE} = 960\text{ V}, R_G = R_{off} = 10\ \Omega$ Note3		30	ns
t_{ri}			25	ns
E_{on}			1.1	mJ
$t_{d(off)}$			265	ns
t_{fi}			298	ns
E_{off}			3.1	mJ
R_{thJC}	TO-220		0.5	0.83 KW
R_{thCK}				KW

- Notes: 1. Device must be heatsunk for high temperature leakage current measurements to avoid thermal runaway.
2. Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$
3. Switching times may increase for $V_{CE}(\text{Clamp}) > 0.8 V_{CES}$, higher T_J or increased R_G .



Min. Recommended Footprint
(Dimensions in inches and mm)

TO-220 AB Dimensions



TO-263 AA Outline

