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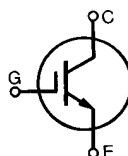


HiPerFAST™ IGBT ISOPLUS247™

IXGR 35N120B
IXGR 35N120C

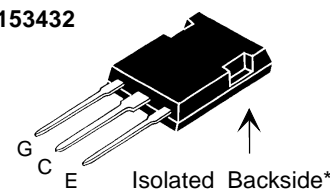
V_{CES}	I_{C25}	$V_{CE(sat)}$	$t_{fi(typ)}$
1200 V	70 A	3.3 V	160 ns
1200 V	70 A	4.0 V	115 ns

(Electrically Isolated Backside)



Symbol	Test Conditions	Maximum Ratings	
V_{CES}	$T_J = 25^\circ\text{C}$ to 150°C	1200	V
V_{CGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GE} = 1\text{ M}\Omega$	1200	V
V_{GES}	Continuous	± 20	V
V_{GEM}	Transient	± 30	V
I_{C25}	$T_C = 25^\circ\text{C}$	70	A
I_{C90}	$T_C = 90^\circ\text{C}$	35	A
I_{CM}	$T_C = 25^\circ\text{C}$, 1 ms	140	A
SSOA (RBSOA)	$V_{GE} = 15\text{ V}$, $T_{VJ} = 125^\circ\text{C}$, $R_G = 10\ \Omega$ Clamped inductive load	$I_{CM} = 90$ @ $0.8 V_{CES}$	A
P_C	$T_C = 25^\circ\text{C}$	200	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	$^\circ\text{C}$
Weight		5	g

ISOPLUS 247



G = Gate, C = Collector
E = Emitter

* Patent pending

Features

- DCB Isolated mounting tab
- Meets TO-247AD package Outline
- High current handling capability
- MOS Gate turn-on - drive simplicity

Applications

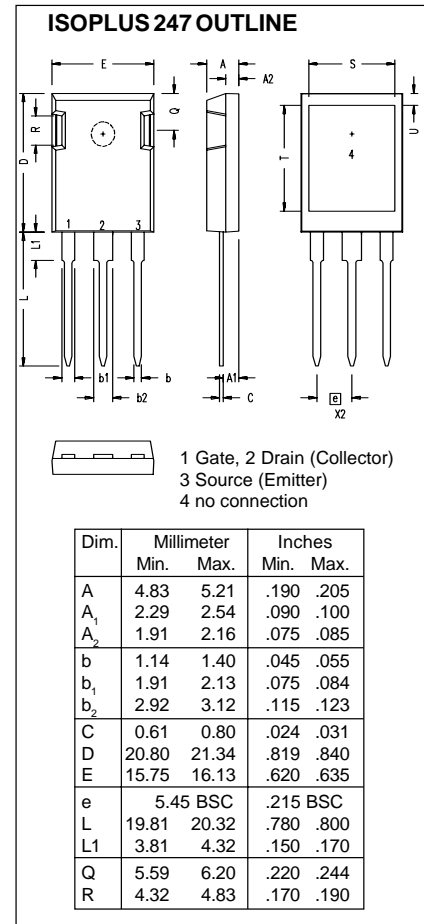
- Uninterruptible power supplies (UPS)
- Switched-mode and resonant-mode power supplies
- AC motor speed control
- DC servo and robot drives
- DC choppers

Advantages

- Easy assembly
- High power density

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		Min.	Typ.	Max.
BV_{CES}	$I_C = 1\text{ mA}$, $V_{GE} = 0\text{ V}$	1200		V
$V_{GE(th)}$	$I_C = 750\ \mu\text{A}$, $V_{CE} = V_{GE}$	2.5		5.0 V
I_{CES}	$V_{CE} = V_{CES}$ $V_{GE} = 0\text{ V}$; note 1 $T_J = 125^\circ\text{C}$			250 μA 5 mA
I_{GES}	$V_{CE} = 0\text{ V}$, $V_{GE} = \pm 20\text{ V}$			$\pm 100\text{ nA}$
$V_{CE(sat)}$	$I_C = I_{C90}$, $V_{GE} = 15\text{ V}$ $T_J = 125^\circ\text{C}$	35N120B	3.3	V
		35N120C	2.7	V
		35N120C	3.4	V

Symbol	Test Conditions	Characteristic Values (T _J = 25°C, unless otherwise specified)			
		min.	typ.	max.	
g_{fs}	I _C = I _{C90} , V _{CE} = 10 V, Note1	30	40	S	
C_{ies} C_{oes} C_{res}	V _{CE} = 25 V, V _{GE} = 0 V, f = 1 MHz		4620	pF	
			260	pF	
			90	pF	
Q_g Q_{ge} Q_{gc}	I _C = I _{C90} , V _{GE} = 15 V, V _{CE} = 0.5 V _{CES}		170	nC	
			28	nC	
			57	nC	
t_{d(on)} t_{ri} t_{d(off)} t_{fi} E_{off}	Inductive load, T_J = 25°C I _C = I _{C90} , V _{GE} = 15 V V _{CE} = 0.8 V _{CES} , R _G = R _{off} = 4.7 Ω Remarks: Switching times may increase for V _{CE} (Clamp) > 0.8 V _{CES} , higher T _J or increased R _G	35N120B	180	280	ns
		35N120C	150	220	ns
		35N120B	160	320	ns
		35N120C	115	190	ns
		35N120B	3.8	7.3	mJ
		35N120C	3.0	4.2	mJ
			55		ns
			31		ns
			2.6		mJ
			35N120B	300	
		35N120C	220		ns
		35N120B	360		ns
		35N120C	260		ns
		35N120B	8.0		mJ
		35N120C	6.2		mJ
R_{thJC} R_{thCK}				0.5	K/W
			0.15		K/W



Note: 1. Pulse test, t_p ≤ 300 ms, duty cycle: d ≤ 2 %

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