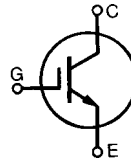


HiPerFAST™ IGBT ISOPLUS247™

		V_{CES}	I_{C25}	$V_{CE(sat)}$	$t_{fi(typ)}$
IXGR	35N120B	1200 V	70 A	3.3 V	160 ns
IXGR	35N120C	1200 V	70 A	4.0 V	115 ns

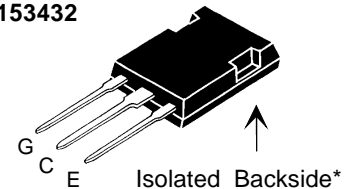
(Electrically Isolated Backside)



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

E153432



G = Gate,
E = Emitter

C = Collector

* Patent pending

Features

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

Applications

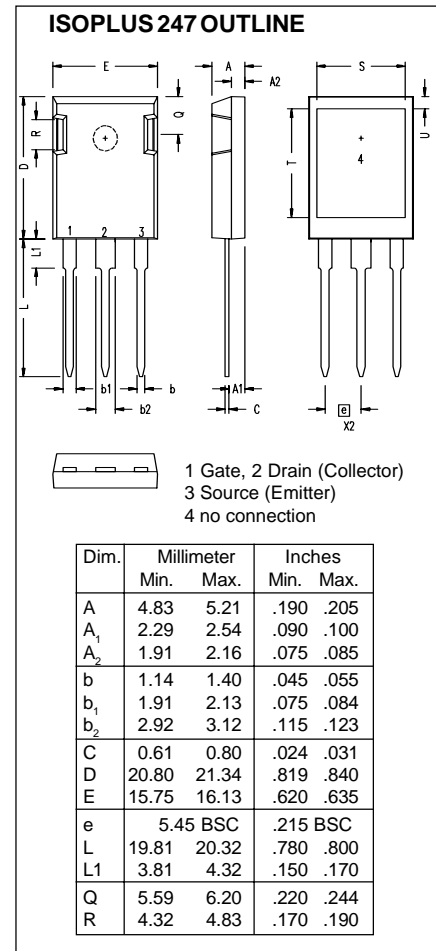
- Uninterruptible power supplies (UPS)
- Switched-mode and resonant-mode power supplies
- AC motor speed control
- DC servo and robot drives
- DC choppers

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	2.7	3.3 V
	$T_J = 125^\circ\text{C}$	35N120C		4.0 V
			3.4	V

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)			
		min.	typ.	max.	
g_{fs}	$I_C = I_{C90}, V_{CE} = 10\text{ V}$, Note1	30	40	S	
C_{ies}	$V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1\text{ MHz}$		4620	pF	
C_{oes}			260	pF	
C_{res}			90	pF	
Q_g	$I_C = I_{C90}, V_{GE} = 15\text{ V}, V_{CE} = 0.5 V_{CES}$		170	nC	
Q_{ge}			28	nC	
Q_{gc}			57	nC	
$t_{d(on)}$	Inductive load, $T_J = 25^\circ\text{C}$ $I_C = I_{C90}, V_{GE} = 15\text{ V}$ $V_{CE} = 0.8 V_{CES}, R_G = R_{off} = 4.7\ \Omega$ Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8 V_{CES}$, higher T_J or increased R_G		50	ns	
t_{ri}			27	ns	
$t_{d(off)}$		35N120B	180	280	ns
		35N120C	150	220	ns
t_{fi}		35N120B	160	320	ns
		35N120C	115	190	ns
E_{off}		35N120B	3.8	7.3	mJ
		35N120C	3.0	4.2	mJ
$t_{d(on)}$	Inductive load, $T_J = 125^\circ\text{C}$ $I_C = I_{C90}, V_{GE} = 15\text{ V}$ $V_{CE} = 0.8 V_{CES}, R_G = R_{off} = 4.7\ \Omega$ Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8 V_{CES}$, higher T_J or increased R_G		55	ns	
t_{ri}			31	ns	
E_{on}			2.6	mJ	
$t_{d(off)}$		35N120B	300	ns	
		35N120C	220	ns	
t_{fi}		35N120B	360	ns	
	35N120C	260	ns		
E_{off}		35N120B	8.0	mJ	
		35N120C	6.2	mJ	
R_{thJC}			0.5	K/W	
R_{thCK}		0.15		K/W	



Note: 1. Pulse test, $t_p \leq 300\text{ ms}$, duty cycle: $d \leq 2\%$



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