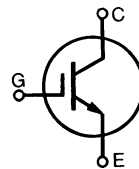


IGBT

Improved SCSOA Capability

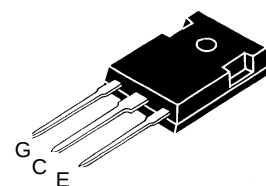
IXSH25N120A

$$\begin{aligned} I_{C25} &= 50 \text{ A} \\ V_{CES} &= 1200 \text{ V} \\ V_{CE(sat)} &= 4.0 \text{ V} \end{aligned}$$



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}	$T_C = 25^\circ\text{C}$	50	A
I_{C90}	$T_C = 90^\circ\text{C}$	25	A
I_{CM}	$T_C = 25^\circ\text{C}, 1 \text{ ms}$	80	A
SSOA (RBSOA)	$V_{GE} = 15 \text{ V}, T_J = 125^\circ\text{C}, R_G = 33 \Omega$ Clamped inductive load, $L = 100 \mu\text{H}$	$I_{CM} = 50$ @ $0.8 V_{CES}$	A
t_{sc}	$T_J = 125^\circ\text{C}, V_{CE} = 720 \text{ V}; V_{GE} = 15 \text{ V}, R_G = 33 \Omega$	10	μs
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	$^\circ\text{C}$
M_d	Mounting torque	1.15/10	Nm/lb-in.
Weight		6	g
Max. Lead Temperature for Soldering (1.6mm from case for 10s)		300	$^\circ\text{C}$

TO-247AD



Features

- Second generation HDMOS™ process
Low $V_{CE(sat)}$
- for minimum on-state conduction losses
- MOS Gate turn-on
- drive simplicity

Applications

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

Advantages

- Easy to mount (isolated mounting hole)
- Reduces assembly time and cost

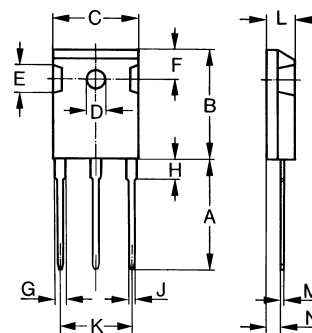
Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$ unless otherwise specified)		
		Min.	Typ.	Max.
BV_{CES}	$I_C = 3 \text{ mA}, V_{GE} = 0 \text{ V}$	1200		V
$V_{GE(th)}$	$I_C = 2.5 \text{ mA}, V_{CE} = V_{GE}$	4		8 V
I_{CES}	$V_{CE} = 0.8 V_{CES}, V_{GE} = 0 \text{ V}$ Note 2			200 μA 1 mA
I_{GES}	$V_{CE} = 0 \text{ V}, V_{GE} = \pm 20 \text{ V}$			$\pm 100 \text{ nA}$
$V_{CE(sat)}$	$I_C = I_{C90}, V_{GE} = 15 \text{ V}$			4.0 V

Symbol	Test Conditions ($T_j = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$I_C = I_{C90^\circ}$, $V_{CE} = 10\text{ V}$, Pulse test, $t \leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$	10	17	S
$I_{C(on)}$	$V_{GE} = 15\text{ V}$, $V_{CE} = 10\text{ V}$		140	A
C_{ies}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$		2850	pF
C_{oes}			210	pF
C_{res}			50	pF
Q_g	$I_C = I_{C90^\circ}$, $V_{GE} = 15\text{ V}$, $V_{CE} = 0.5 V_{CES}$		120	nC
Q_{ge}			30	nC
Q_{gc}			50	nC
$t_{d(on)}$	Inductive load, $T_j = 25^\circ\text{C}$		100	ns
t_{ri}	$I_C = I_{C90^\circ}$, $V_{GE} = 15\text{ V}$, $L = 100\text{ }\mu\text{H}$		200	ns
$t_{d(off)}$	$R_G = 18\text{ }\Omega$, $V_{CLAMP} = 0.8 V_{CES}$		450	ns
t_{fi}	Note 1		650	ns
E_{off}			9.6	mJ
$t_{d(on)}$	Inductive load, $T_j = 125^\circ\text{C}$		100	ns
t_{ri}	$I_C = I_{C90^\circ}$, $V_{GE} = 15\text{ V}$, $L = 100\text{ }\mu\text{H}$		200	ns
$E_{(on)}$	$R_G = 18\text{ }\Omega$		1.8	mJ
$t_{d(off)}$	$V_{CLAMP} = 0.8 V_{CES}$		450	ns
t_{fi}	Note 1		900	ns
E_{off}			17	mJ
R_{thJC}				0.63 K/W
R_{thCK}		0.25		K/W

Notes:

- 1) Switching times may increase for V_{CE} (Clamp) $> 0.8 V_{CES}$, higher T_j or R_g values.
- 2) Device must be heatsunk for high temperature measurements to avoid thermal runaway.

TO-247 AD (IXSH) Outline



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

This datasheet has been downloaded from:

www.DatasheetCatalog.com

Datasheets for electronic components.



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.