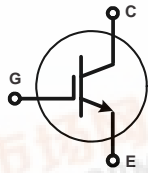


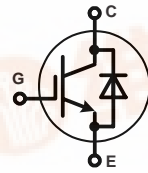


# NPT<sup>3</sup> IGBT

**I<sub>C25</sub> = 36 A**  
**V<sub>CES</sub> = 1200 V**  
**V<sub>CE(sat)</sub> typ. = 2.6 V**

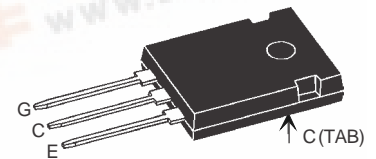


IXEH25N120



IXEH25N120D1

TO-247 AD



## IGBT

Symbol	Conditions	Maximum Ratings	
V <sub>CES</sub>	T <sub>VJ</sub> = 25°C to 150°C	1200	V
V <sub>GES</sub>		± 20	V
I <sub>C25</sub>	T <sub>C</sub> = 25°C	36	A
I <sub>C90</sub>	T <sub>C</sub> = 90°C	24	A
I <sub>CM</sub> V <sub>CEK</sub>	V <sub>GE</sub> = ±15 V; R <sub>G</sub> = 56 Ω; T <sub>VJ</sub> = 125°C RBSOA, Clamped inductive load; L = 100 μH	40	A
t <sub>SC</sub> (SCSOA)	V <sub>CE</sub> = 900V; V <sub>GE</sub> = ±15 V; R <sub>G</sub> = 56 Ω; T <sub>VJ</sub> = 125°C non-repetitive	10	μs
P <sub>tot</sub>	T <sub>C</sub> = 25°C	200	W

## Features

- NPT<sup>3</sup> IGBT
  - positive temperature coefficient of saturation voltage for easy paralleling
  - fast switching
  - short tail current for optimized performance in resonant circuits
- optional HiPerFRED™ diode
  - fast reverse recovery
  - low operating forward voltage
  - low leakage current
- TO-247 package
  - industry standard outline
  - epoxy meets UL 94V-0

## Applications

- AC drives
- DC drives and choppers
- Uninterruptible power supplies (UPS)
- switched-mode and resonant-mode power supplies
- inductive heating, cookers

Symbol	Conditions	Characteristic Values (T <sub>VJ</sub> = 25°C, unless otherwise specified)			
		min.	typ.	max.	
V <sub>CE(sat)</sub>	I <sub>C</sub> = 25 A; V <sub>GE</sub> = 15 V; T <sub>VJ</sub> = 25°C T <sub>VJ</sub> = 125°C		2.6 3.2	V V	
V <sub>GE(th)</sub>	I <sub>C</sub> = 0.6 mA; V <sub>GE</sub> = V <sub>CE</sub>	4.5		6.5 V	
I <sub>CES</sub>	V <sub>CE</sub> = V <sub>CES</sub> ; V <sub>GE</sub> = 0 V; T <sub>VJ</sub> = 25°C T <sub>VJ</sub> = 125°C		0.2	0.2 mA mA	
I <sub>GES</sub>	V <sub>CE</sub> = 0 V; V <sub>GE</sub> = ± 20 V			200 nA	
t <sub>d(on)</sub> t <sub>r</sub> t <sub>d(off)</sub> t <sub>f</sub> E <sub>on</sub> E <sub>off</sub>	Inductive load, T <sub>VJ</sub> = 125°C V <sub>CE</sub> = 600 V; I <sub>C</sub> = 25 A V <sub>GE</sub> = ±15 V; R <sub>G</sub> = 56 Ω		150 60 700 50 3.4 2.5	ns ns ns ns mJ mJ	
C <sub>ies</sub>		V <sub>CE</sub> = 25 V; V <sub>GE</sub> = 0 V; f = 1 MHz		1.2	nF
Q <sub>Gon</sub>		V <sub>CE</sub> = 600 V; V <sub>GE</sub> = 15 V; I <sub>C</sub> = 20 A		150	nC
R <sub>thJC</sub>				0.63	KW



**Diode [D1 version only]**

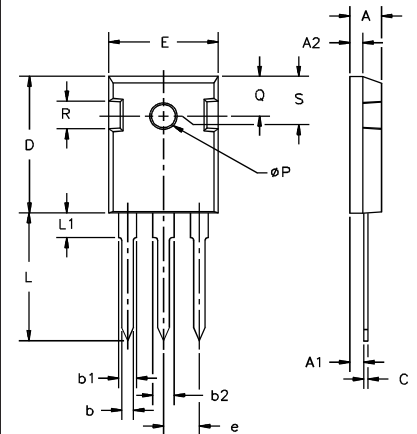
Symbol	Conditions	Maximum Ratings	
$I_{F25}$	$T_C = 25^\circ\text{C}$	33	A
$I_{F90}$	$T_C = 90^\circ\text{C}$	20	A

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$V_F$	$I_F = 25\text{ A}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$	2.7	3.2	V
$I_{RM}$ $t_{rr}$	} $I_F = 25\text{ A}; di/dt = -400\text{ A}/\mu\text{s}; T_{VJ} = 125^\circ\text{C}$ $V_R = 600\text{ V}; V_{GE} = 0\text{ V}$	16		A
			130	
$R_{thJC}$				1.6 K/W

**Component**

Symbol	Conditions	Maximum Ratings	
$T_{VJ}$		-55...+150	$^\circ\text{C}$
$T_{stg}$		-55...+150	$^\circ\text{C}$
$M_d$	mounting torque	0.8...1.2	Nm

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$R_{thCH}$	with heatsink compound	0.25		K/W
<b>Weight</b>		6		g

**TO-247 AD Outline**


Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.7	5.3	.185	.209
A <sub>1</sub>	2.2	2.54	.087	.102
A <sub>2</sub>	2.2	2.6	.059	.098
b	1.0	1.4	.040	.055
b <sub>1</sub>	1.65	2.13	.065	.084
b <sub>2</sub>	2.87	3.12	.113	.123
C	.4	.8	.016	.031
D	20.80	21.46	.819	.845
E	15.75	16.26	.610	.640
e	5.20	5.72	0.205	0.225
L	19.81	20.32	.780	.800
L1		4.50		.177
∅P	3.55	3.65	.140	.144
	5.89	6.40	0.232	0.252
R	4.32	5.49	.170	.216
S	6.15	BSC	242	BSC