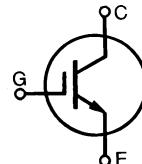
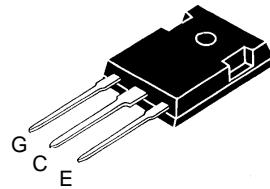


HiPerFAST™ IGBT
IXGH 24N60A

V_{CES} = 600 V
 I_{C25} = 48 A
 $V_{CE(sat)}$ = 2.7 V
 t_{fi} = 275 ns



Symbol	Test Conditions	Maximum Ratings		
V_{CES}	T_J = 25°C to 150°C	600	V	
V_{CGR}	T_J = 25°C to 150°C; R_{GE} = 1 MΩ	600	V	
V_{GES}	Continuous	±20	V	
V_{GEM}	Transient	±30	V	
I_{C25}	T_C = 25°C	48	A	
I_{C90}	T_C = 90°C	24	A	
I_{CM}	T_C = 25°C, 1 ms	96	A	
SSOA (RBSOA)	V_{GE} = 15 V, T_{VJ} = 125°C, R_G = 22 Ω Clamped inductive load, L = 100 μH	I_{CM} = 48 @ 0.8 V_{CES}	A	
P_c	T_C = 25°C	150	W	
T_J		-55 ... +150	°C	
T_{JM}		150	°C	
T_{stg}		-55 ... +150	°C	
M_d	Mounting torque (M3)	1.13/10	Nm/lb.in.	
Weight		6	g	
Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s		300	°C	

TO-247 AD


G = Gate,
 E = Emitter,
 C = Collector,
 TAB = Collector

Features

- International standard package JEDEC TO-247 AD
- High frequency IGBT
- 2nd generation HDMOS™ process
- High current handling capability
- 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

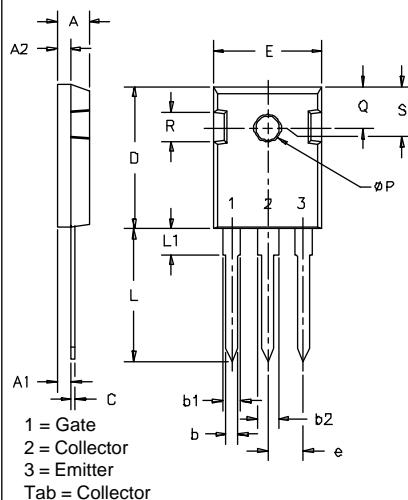
- Easy to mount with 1 screw (isolated mounting screw hole)
- Switching speed for high frequency applications
- High power density

Symbol	Test Conditions	Characteristic Values		
		(T_J = 25°C, unless otherwise specified)	min.	typ.
BV_{CES}	I_C = 250 μA, V_{GE} = 0 V	600		V
$V_{GE(th)}$	I_C = 250 μA, V_{CE} = V_{GE}	2.5		V
I_{CES}	V_{CE} = 0.8 • V_{CES} V_{GE} = 0 V	T_J = 25°C T_J = 125°C	200 1	μA mA
I_{GES}	V_{CE} = 0 V, V_{GE} = ±20 V		±100	nA
$V_{CE(sat)}$	I_C = I_{C90} , V_{GE} = 15 V		2.7	V

Symbol	Test Conditions	Characteristic Values		
		($T_J = 25^\circ\text{C}$, unless otherwise specified)	min.	typ.
g_{fs}	$I_C = I_{C90}$; $V_{CE} = 10 \text{ V}$, Pulse test, $t \leq 300 \mu\text{s}$, duty cycle $\leq 2\%$	9	13	S
C_{ies}	$V_{CE} = 25 \text{ V}$, $V_{GE} = 0 \text{ V}$, $f = 1 \text{ MHz}$	1500	pF	
C_{oes}		135	pF	
C_{res}		40	pF	
Q_g	$I_C = I_{C90}$, $V_{GE} = 15 \text{ V}$, $V_{CE} = 0.5 V_{CES}$	90	120	nC
Q_{ge}		11	15	nC
Q_{gc}		30	40	nC
$t_{d(on)}$	Inductive load, $T_J = 25^\circ\text{C}$ $I_C = I_{C90}$, $V_{GE} = 15 \text{ V}$, $L = 100 \mu\text{H}$, $V_{CE} = 0.8 V_{CES}$, $R_G = R_{off} = 10 \Omega$ Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8 \cdot V_{CES}$, higher T_J or increased R_G	25	ns	
t_{ri}		15	ns	
E_{on}		0.6	mJ	
$t_{d(off)}$		150	200	ns
t_{fi}		110	270	ns
E_{off}		1.5	mJ	
$t_{d(on)}$		25	ns	
t_{ri}	Inductive load, $T_J = 125^\circ\text{C}$ $I_C = I_{C90}$, $V_{GE} = 15 \text{ V}$, $L = 100 \mu\text{H}$, $V_{CE} = 0.8 V_{CES}$, $R_G = R_{off} = 10 \Omega$ Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8 \cdot V_{CES}$, higher T_J or increased R_G	15	ns	
E_{on}		0.8	mJ	
$t_{d(off)}$		250	ns	
t_{fi}		400	ns	
E_{off}		2.3	mJ	
R_{thJC}			0.83	K/W
R_{thCK}		0.25		K/W

IXGH 24N60A characteristic curves are located on the
IXGH 24N60AU1 data sheet.

TO-247 AD Outline



SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.185	.209	4.7	5.3
A ₁	.087	.102	2.2	2.54
A ₂	.059	.098	2.2	2.6
b	.040	.055	1.0	1.4
b ₁	.065	.084	1.65	2.13
b ₂	.113	.123	2.87	3.12
C	.016	.031	.4	.8
D	.819	.845	20.80	21.46
E	.610	.640	15.75	16.26
e	.215	BSC	5.45	BSC
L	.780	.800	19.81	20.32
L ₁			.177	4.50
ØP	.140	.144	3.55	3.65
Q	.212	.244	5.4	6.2
R	.170	.216	4.32	5.49
S	.242	BSC	6.15	BSC