

Preliminary Data

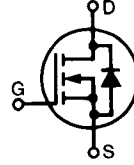
HiPerFET™

Power MOSFETs

N-Channel Enhancement Mode
High dv/dt, Low t_{rr} , HDMOS™ Family

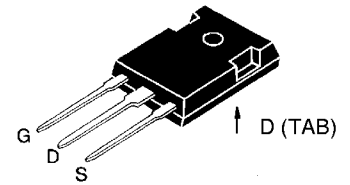
IXFH 76N06
IXFH 76N07-11
IXFH 76N07-12

V_{DSS}	I_{D25}	$R_{DS(on)}$	t_{rr}
60 V	76 A	11 mΩ	150 ns
70 V	76 A	11 mΩ	150 ns
70 V	76 A	12 mΩ	150 ns



Symbol	Test Conditions	Maximum Ratings		
V_{DSS}	$T_J = 25^\circ\text{C}$ to 175°C	N07	70	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 175°C ; $R_{GS} = 10\text{ k}\Omega$	N06	60	V
		N07	70	V
		N06	60	V
V_{GS}	Continuous		± 20	V
V_{GSM}	Transient		± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$ (Chip capability = 125 A)		76	A
I_{D119}	$T_C = 119^\circ\text{C}$, limited by external leads		76	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}		304	A
I_{AR}	$T_C = 25^\circ\text{C}$		100	A
E_{AR}	$T_C = 25^\circ\text{C}$		30	mJ
E_{AS}			2	J
dv/dt	$I_S \leq I_{DM}$, $di/dt \leq 100\text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ\text{C}$, $R_G = 2\ \Omega$		5	V/ns
P_D	$T_C = 25^\circ\text{C}$		360	W
T_J		-55 ...	+175	$^\circ\text{C}$
T_{JM}			175	$^\circ\text{C}$
T_{stg}		-55 ...	+150	$^\circ\text{C}$
Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s			300	$^\circ\text{C}$
M_d	Mounting torque		1.15/10	Nm/lb.in.
Weight			6	g

TO-247 AD



G = Gate D = Drain
S = Source TAB = Drain

Features

- International standard package JEDEC TO-247 AD
- Low $R_{DS(on)}$ HDMOS™ process
- Rugged polysilicon gate cell structure
- Unclamped Inductive Switching (UIS) rated
- Low package inductance (<5 nH)
 - easy to drive and to protect
- Fast intrinsic Rectifier

Applications

- DC-DC converters
- Synchronous rectification
- Battery chargers
- Switched-mode and resonant-mode power supplies
- DC choppers
- Temperature and lighting controls
- Low voltage relays

Advantages

- Easy to mount with 1 screw (isolated mounting screw hole)
- Space savings
- High power density

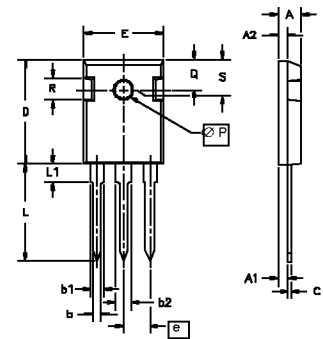
Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
V_{DSS}	$V_{GS} = 0\text{ V}$, $I_D = 250\ \mu\text{A}$	N07 70 N06 60		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$	2.0		3.4 V
I_{GSS}	$V_{GS} = \pm 20\text{ V}_{DC}$, $V_{DS} = 0$			$\pm 100\text{ nA}$
I_{DSS}	$V_{DS} = 0.8\text{ V}_{DSS}$, $V_{GS} = 0\text{ V}$			100 μA 500 μA
$R_{DS(on)}$	$V_{GS} = 10\text{ V}$, $I_D = 40\text{ A}$	76N06, 76N07-11 76N07-12		11 mΩ 12 mΩ
Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $\delta \leq 2\%$				

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		Min.	Typ.	Max.
g_{fs}	$V_{DS} = 10\text{ V}; I_D = 40\text{ A}$, pulse test	30	40	S
C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$		4400	pF
C_{oss}			2000	pF
C_{rss}			1200	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 50\text{ V}, I_D = 30\text{ A}$ $R_G = 1\ \Omega$ (External)		40	ns
t_r			70	ns
$t_{d(off)}$			130	ns
t_f			55	ns
$Q_{g(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 V_{DSS}, I_D = 40\text{ A}$		240	nC
Q_{gs}			30	nC
Q_{gd}			120	nC
R_{thJC}			0.42	K/W
R_{thCK}		0.25		K/W

Source-Drain Diode

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		Min.	Typ.	Max.
I_S	$V_{GS} = 0$			76 A
I_{SM}	Repetitive; pulse width limited by T_{JM}			304 A
V_{SD}	$I_F = I_S, V_{GS} = 0\text{ V}$, Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $\delta \leq 2\%$			1.5 V
t_{rr}	$I_F = 25\text{ A}, -di/dt = 100\text{ A}/\mu\text{s}, T_J = 25^\circ\text{C}$ $V_R = 25\text{ V}$ $T_J = 125^\circ\text{C}$		150	ns 250 ns

TO-247 AD Outline



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.7	5.3	.185	.209
A ₁	2.2	2.54	.087	.102
A ₂	2.2	2.6	.059	.098
b	1.0	1.4	.040	.055
b ₁	1.65	2.13	.065	.084
b ₂	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
L ₁		4.50		.177
ØP	3.55	3.65	.140	.144
Q	5.89	6.40	0.232	0.252
R	4.32	5.49	.170	.216
S	6.15	BSC	.242	BSC