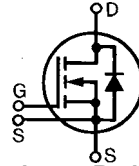


# HiPerFET™ Power MOSFETs

IXFN 200 N06  
IXFN 200 N07

N-Channel Enhancement Mode  
Avalanche Rated, High dv/dt, Low  $t_{rr}$

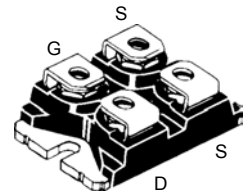


$V_{DSS}$	$I_{D25}$	$R_{DS(on)}$
60 V	200 A	6 mΩ
70 V	200 A	6 mΩ

$t_{rr} \leq 250$  ns

Symbol	Test Conditions	Maximum Ratings	
$V_{DSS}$	$T_J = 25^\circ\text{C}$ to $150^\circ\text{C}$	N07	70 V
$V_{DGR}$	$T_J = 25^\circ\text{C}$ to $150^\circ\text{C}$ ; $R_{GS} = 1\text{ M}\Omega$	N06	60 V
$V_{GS}$	Continuous		$\pm 20$ V
$V_{GSM}$	Transient		$\pm 30$ V
$I_{D25}$	$T_C = 25^\circ\text{C}$ ; Chip capability	200N06	200 A
$I_{L(RMS)}$	Terminal current limit	N07	100 A
$I_{DM}$	$T_C = 25^\circ\text{C}$ , pulse width limited by $T_{JM}$		600 A
$I_{AR}$	$T_C = 25^\circ\text{C}$		100 A
$E_{AR}$	$T_C = 25^\circ\text{C}$		30 mJ
$E_{AS}$	$T_C = 25^\circ\text{C}$		2 J
dv/dt	$I_S \leq I_{DM}$ , di/dt $\leq 100$ A/ns, $V_{DD} \leq V_{DSS}$ , $T_J \leq 150^\circ\text{C}$ , $R_{\theta JC} \leq 2\ \Omega$		5 V/ns
$P_D$	$T_C = 25^\circ\text{C}$		520 W
$T_J$			-55 ... +150 $^\circ\text{C}$
$T_{JM}$			150 $^\circ\text{C}$
$T_{stg}$			-55 ... +150 $^\circ\text{C}$
$V_{ISOL}$	10/50 Hz, RMS $t = 1$ min $I_{ISOL} \leq 1$ mA $t = 1$ s		- 2500 V~ - 3000 V~
$M_d$	Mounting torque Terminal connection torque		1.5/13 Nm/lb.in. - 1.5/13 Nm/lb.in.
Weight			30 g

miniBLOC, SOT-227 B (IXFN)  
E153432



G = Gate                      D = Drain  
S = Source

Either Source terminal at miniBLOC can be used as Main or Kelvin Source

### Features

- International standard packages
- miniBLOC with Aluminium nitride isolation
- Low  $R_{DS(on)}$  HDMOS™ process
- Rugged polysilicon gate cell structure
- Unclamped Inductive Switching (UIS) rated
- Low package inductance
- Fast intrinsic Rectifier

### Applications

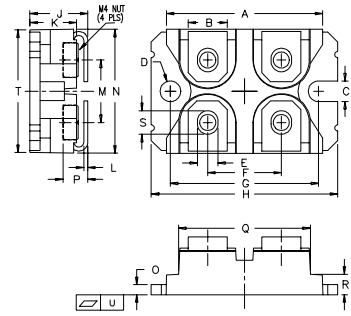
- DC-DC converters
- Synchronous rectification
- Battery chargers
- Switched-mode and resonant-mode power supplies
- DC choppers
- Temperature and lighting controls
- Low voltage relays

### Advantages

- Easy to mount
- Space savings
- High power density

Symbol	Test Conditions		Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
			min.	typ.	max.
$V_{DSS}$	$V_{GS} = 0\text{ V}$ , $I_D = 1\text{ mA}$	N06 N07	60 70		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$ , $I_D = 8\text{ mA}$		2		4 V
$I_{GSS}$	$V_{GS} = \pm 20\text{ V}_{DC}$ , $V_{DS} = 0$				$\pm 200$ nA
$I_{DSS}$	$V_{DS} = 0.8 \cdot V_{DSS}$ , $T_J = 125^\circ\text{C}$ $V_{GS} = 0\text{ V}$		2		400 $\mu\text{A}$ mA
$R_{DS(on)}$	$V_{GS} = 10\text{ V}$ , $I_D = 0.5 \cdot I_{D25}$ Pulse test, $t \leq 300\ \mu\text{s}$ , duty cycle $d \leq 2\%$				6 mΩ

Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$g_{fs}$	$V_{DS} = 10\text{ V}; I_D = 0.5 \cdot I_{D25}$ , pulse test	60	80	S
$C_{iss}$	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$		9000	pF
$C_{oss}$			4000	pF
$C_{rss}$			2400	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$ $R_G = 1\ \Omega$ (External),		30	ns
$t_r$			60	ns
$t_{d(off)}$			100	ns
$t_f$			60	ns
$Q_{g(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$		480	nC
$Q_{gs}$			60	nC
$Q_{gd}$			240	nC
$R_{thJC}$	miniBLOC, SOT-227 B		0.24	K/W
$R_{thCK}$	miniBLOC, SOT-227 B	0.05		K/W

**miniBLOC, SOT-227 B**


M4 screws (4x) supplied

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	31.50	31.88	1.240	1.255
B	7.80	8.20	0.307	0.323
C	4.09	4.29	0.161	0.169
D	4.09	4.29	0.161	0.169
E	4.09	4.29	0.161	0.169
F	14.91	15.11	0.587	0.595
G	30.12	30.30	1.186	1.193
H	38.00	38.23	1.496	1.505
J	11.68	12.22	0.460	0.481
K	8.92	9.60	0.351	0.378
L	0.76	0.84	0.030	0.033
M	12.60	12.85	0.496	0.506
N	25.15	25.42	0.990	1.001
O	1.98	2.13	0.078	0.084
P	4.95	5.97	0.195	0.235
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	0.155	0.174
S	4.72	4.85	0.186	0.191
T	24.59	25.07	0.968	0.987
U	-0.05	0.1	-0.002	0.004

Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$I_s$	$V_{GS} = 0\text{ V}$			200 A
$I_{SM}$	Repetitive; pulse width limited by $T_{JM}$			600 A
$V_{SD}$	$I_F = 100\text{ A}, V_{GS} = 0\text{ V}$ , Pulse test, $t \leq 300\ \mu\text{s}$ , duty cycle $d \leq 2\%$			1.7 V
$t_{rr}$	$I_F = 25\text{ A}$ $-di/dt = 100\text{ A}/\mu\text{s}$ , $V_R = 50\text{ V}$		150	250 ns
$Q_{RM}$			0.7	$\mu\text{C}$
$I_{RM}$			9	A

IXYS reserves the right to change limits, test conditions, and dimensions.



---

Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at [www.littelfuse.com/disclaimer-electronics](http://www.littelfuse.com/disclaimer-electronics).