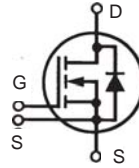


HiPerFET™ Power MOSFETs Single Die MOSFET

IXFN 36N100

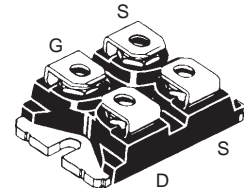
$V_{DSS} = 1000V$
 $I_{D25} = 36A$
 $R_{DS(on)} = 0.24\Omega$

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



Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ C$ to $150^\circ C$	1000	V
V_{DGR}	$T_J = 25^\circ C$ to $150^\circ C$; $R_{GS} = 1 M\Omega$	1000	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ C$, Chip capability	36	A
I_{DM}	$T_C = 25^\circ C$, pulse width limited by T_{JM}	144	A
I_{AR}	$T_C = 25^\circ C$	36	A
E_{AR}	$T_C = 25^\circ C$	64	mJ
E_{AS}	$T_C = 25^\circ C$	4	J
dv/dt	$I_S \leq I_{DM}$, di/dt $\leq 100 A/\mu s$, $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ C$, $R_G = 2 \Omega$	5	V/ns
P_D	$T_C = 25^\circ C$	700	W
T_J		-55 ... +150	$^\circ C$
T_{JM}		150	$^\circ C$
T_{stg}		-55 ... +150	$^\circ C$
V_{ISOL}	50/60 Hz, RMS $t = 1$ min $I_{ISOL} \leq 1$ mA $t = 1$ s	2500 3000	V~ V~
M_d	Mounting torque Terminal connection torque	1.5/13 1.5/13	Nm/lb.in. Nm/lb.in.
Weight		30	g

miniBLOC, SOT-227 B (IXFN)
E153432



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

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

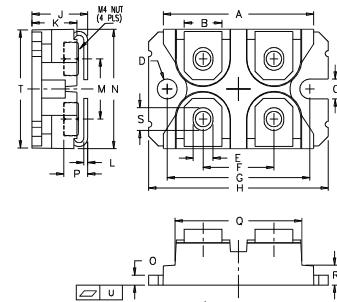
- DC-DC converters
- Battery chargers
- Switched-mode and resonant-mode power supplies
- DC choppers
- Temperature and lighting controls

Advantages

- Easy to mount
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ C$, unless otherwise specified)		
		min.	typ.	max.
V_{DSS}	$V_{GS} = 0 V$, $I_D = 3$ mA	1000		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 8$ mA	3.0		5.5 V
I_{GSS}	$V_{GS} = \pm 20 V_{DC}$, $V_{DS} = 0$			± 200 nA
I_{DSS}	$V_{DS} = V_{DSS}$, $T_J = 25^\circ C$ $V_{GS} = 0 V$, $T_J = 125^\circ C$			100 μA 2 mA
$R_{DS(on)}$	$V_{GS} = 10 V$, $I_D = 0.5 \cdot I_{D25}$ Pulse test, $t \leq 300 \mu s$, duty cycle $d \leq 2\%$			0.24 Ω

Symbol	Test Conditions	Characteristic Values		
		(T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
g_{fs}	V _{DS} = 15 V; I _D = 0.5 • I _{D25} , pulse test	18	40	S
C_{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		9200	pF
C_{oss}			1200	pF
C_{rss}			300	pF
t_{d(on)}	V _{GS} = 10 V, V _{DS} = 0.5 • V _{DSS} , I _D = 0.5 • I _{D25} R _G = 1 Ω (External),		41	ns
t_r			55	ns
t_{d(off)}			110	ns
t_f			30	ns
Q_{g(on)}	V _{GS} = 10 V, V _{DS} = 0.5 • V _{DSS} , I _D = 0.5 • I _{D25}		380	nC
Q_{gs}			65	nC
Q_{gd}			185	nC
R_{thJC}			0.18	K/W
R_{thCK}			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

Source-Drain Diode

Symbol	Test Conditions	Characteristic Values		
		(T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
I_S	V _{GS} = 0 V			36 A
I_{SM}	Repetitive; pulse width limited by T _{JM}			144 A
V_{SD}	I _F = I _S , V _{GS} = 0 V, Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 %			1.3 V
t_{rr}	I _F = I _S , -di/dt = 100 A/μs, V _R = 100 V T _J = 25°C T _J = 125°C T _J = 25°C		180	ns
			330	ns
			2	μC
Q_{RM}			8	A
I_{RM}				

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

IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents:

 4,835,592 4,881,106 5,017,508 5,049,961 5,187,117 5,486,715 6,306,728B1 6,259,123B1 6,306,728B1
 4,850,072 4,931,844 5,034,796 5,063,307 5,237,481 5,381,025 6,404,065B1 6,162,665 6,534,343

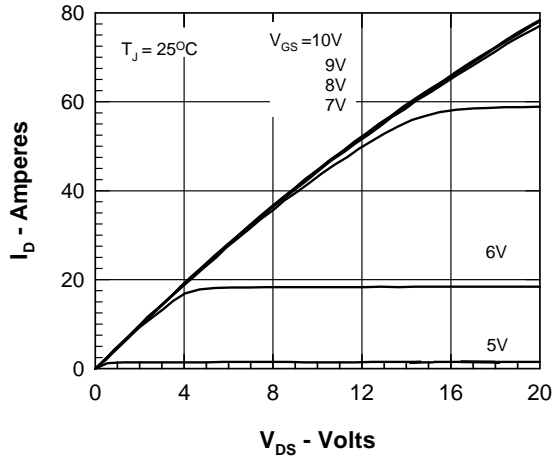


Figure 1. Output Characteristics at 25°C

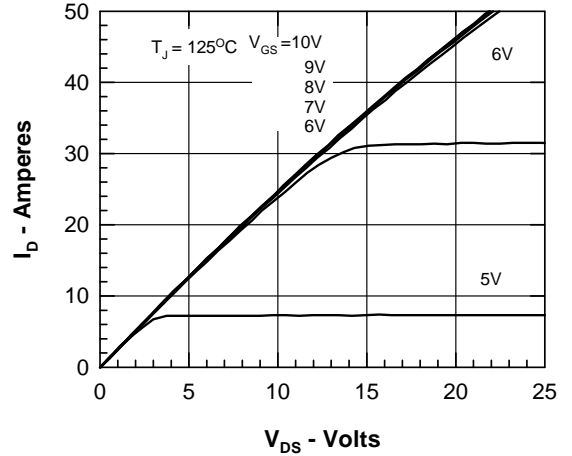


Figure 2. Output Characteristics at 125°C

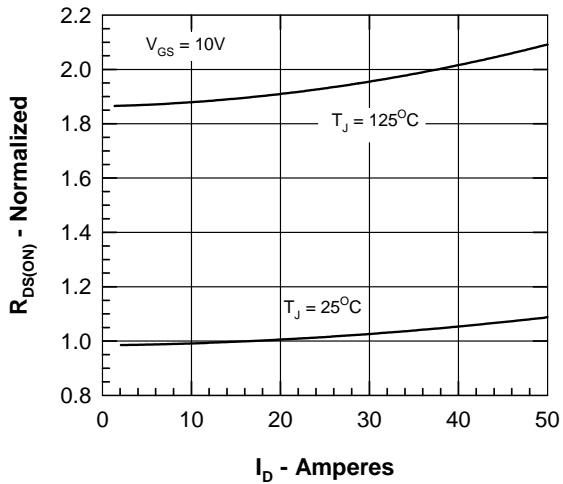


Figure 3. $R_{DS(on)}$ normalized to $0.5 I_{D25}$ value vs. I_D

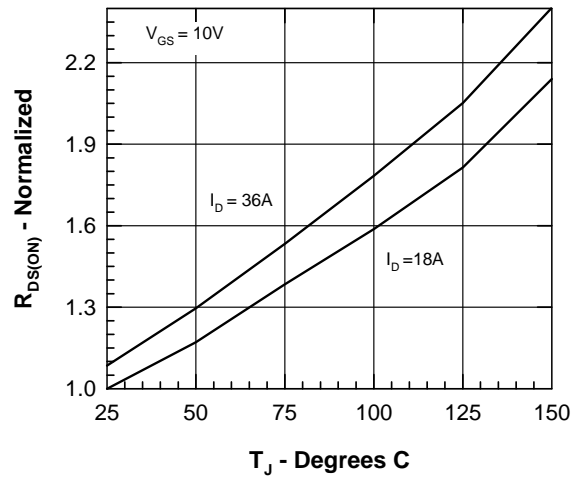


Figure 4. $R_{DS(on)}$ normalized to $0.5 I_{D25}$ value vs. T_J

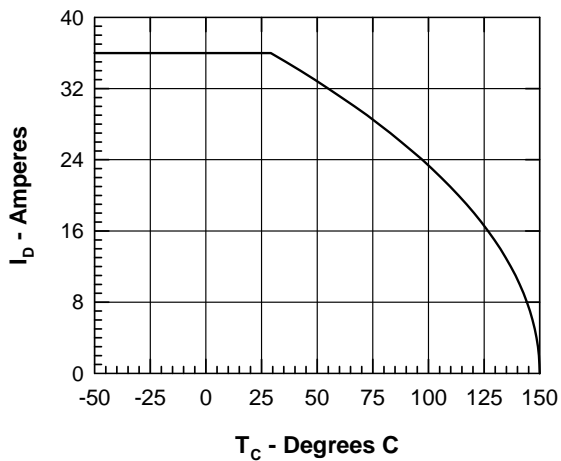


Figure 5. Drain Current vs. Case Temperature

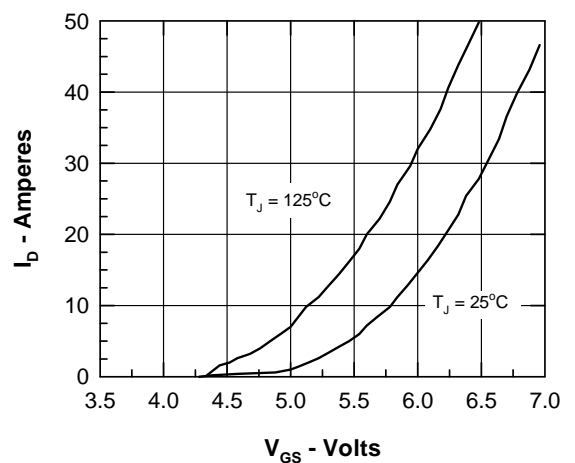
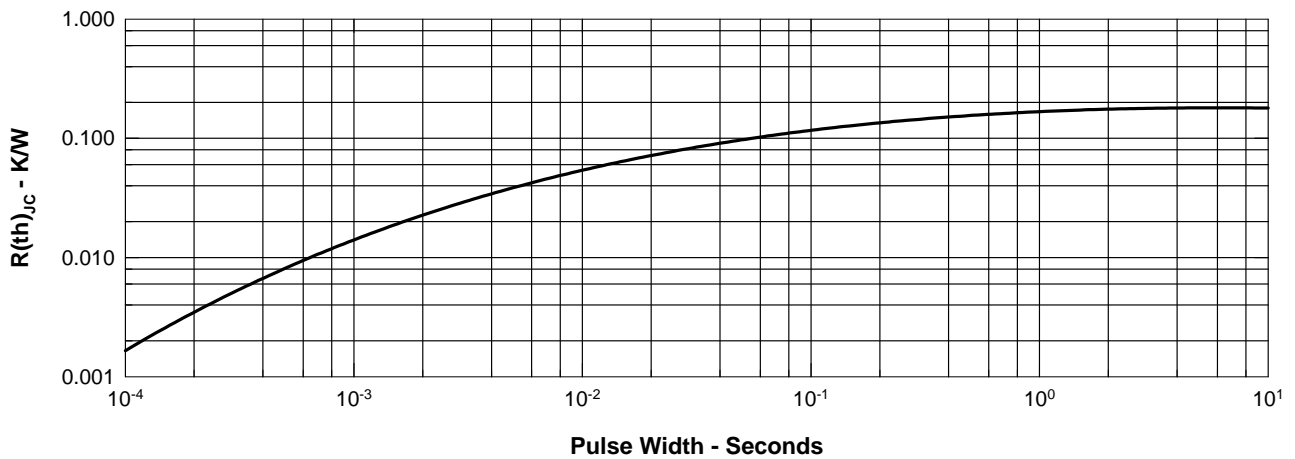
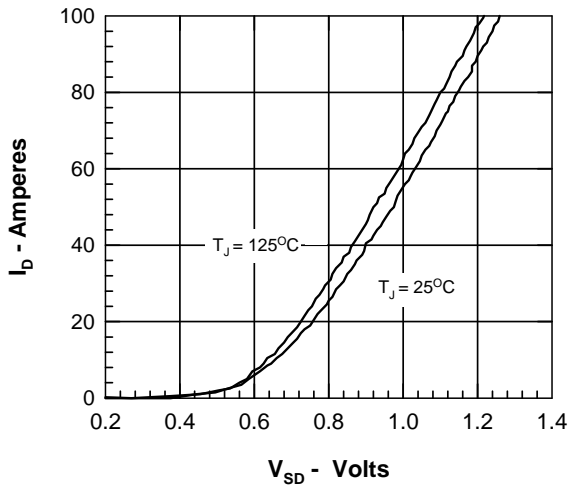
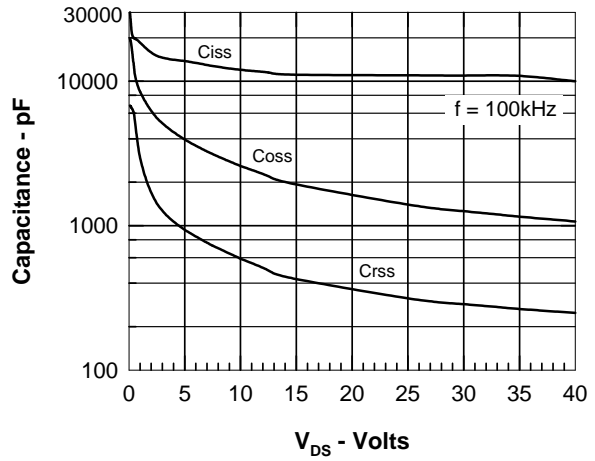
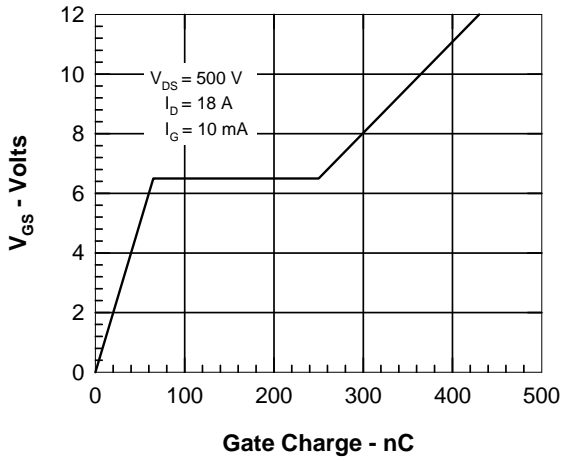


Figure 6. Admittance Curves



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