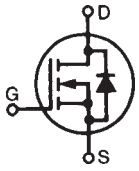
IXYS

HiPerFET™ Power MOSFETs
Single Die MOSFET



IXFN25N90
IXFN26N90

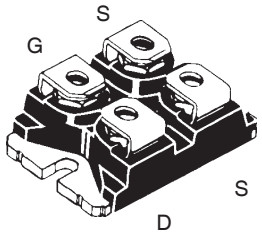
V_{DSS}	I_{D25}	$R_{DS(on)}$
900V	25A	330mΩ
900V	26A	300mΩ

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

Symbol	Test Conditions		Maximum Ratings	
V_{DSS}	T_J = 25°C to 150°C		900	V
V_{DGR}	T_J = 25°C to 150°C, R_{GS} = 1MΩ		900	V
V_{GSS}	Continuous		± 20	V
V_{GSM}	Transient		± 30	V
I_{D25}	T_C = 25°C	25N90	25	A
I_{DM}	T_C = 25°C, pulse width limited by T_{JM}	25N90	100	A
I_{D25}	T_C = 25°C	26N90	26	A
I_{DM}	T_C = 25°C, pulse width limited by T_{JM}	26N90	104	A
I_{AR}	T_C = 25°C	25N90	25	A
I_{AR}	T_C = 25°C	26N90	26	A
E_{AR}	T_C = 25°C		64	mJ
E_{AS}	T_C = 25°C		3	J
dV/dt	$I_S \le I_{DM}$, $V_{DD} \le V_{DSS}$, $T_J \le 150°C$		5	V/ns
P_D	T_C = 25°C		600	W
T_J			-55 ... +150	°C
T_{JM}			150	°C
T_{stg}			-55 ... +150	°C
T_L	1.6mm (0.062 in.) from case for 10s		300	°C
V_{ISOL}	50/60 Hz, RMS	t = 1min	2500	V~
	$I_{ISOL} \le$ 1mA	t = 1s	3000	V~
M_d	Mounting torque		1.5/13	Nm/lb.in.
	Terminal connection torque		1.3/11.5	Nm/lb.in.
Weight			30	g

Symbol	Test Conditions		Characteristic Values (T_J = 25°C unless otherwise specified) Min.	Typ.	Max.	
BV_{DSS}	V_{GS} = 0V, I_D = 3mA		900			V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, I_D = 8mA		3.0		5.0	V
I_{GSS}	V_{GS} = ± 20V, V_{DS} = 0V				± 200	nA
I_{DSS}	V_{DS} = 0.8 • V_{DSS}				100	μA
	V_{GS} = 0V	T_J = 125°C			2	mA
$R_{DS(on)}$	V_{GS} = 10V, I_D = 0.5 • I_{D25}, Note 1	25N90			330	mΩ
		26N90			300	mΩ

miniBLOC, SOT-227
E153432



G = Gate D = Drain
S = Source

Either Source terminal S can be used as the Source terminal or the Kelvin Source (gate return) terminal.

Features

- International standard package
- miniBLOC, with Aluminium nitride isolation
- Low $R_{DS(ON)}$ HDMOS™ process
- Avalanche Rated
- Low package inductance
- Fast intrinsic diode

Advantages

- Low gate drive requirement
- High power density

Applications:

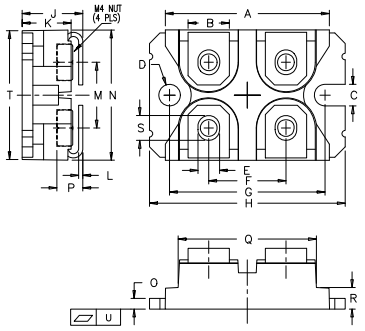
- Switched-mode and resonant-mode power supplies
- DC-DC Converters
- Battery chargers
- DC choppers
- Temperature & lighting controls

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Symbol	Test Conditions (T_J = 25°C unless otherwise specified)	Characteristic Values Min.	Typ.	Max.	
g_{fs}	V_{DS} = 10V, I_D = 0.5 • I_{DSS}, Note 1	18	28		S
C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		8.7	10.8	nF
C_{oss}			800	1000	pF
C_{rss}			300	375	pF
$t_{d(on)}$	**Resistive Switching Times**		60		ns
t_r	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{DSS}		35		ns
$t_{d(off)}$	R_G = 1Ω (External)		130		ns
t_f			24		ns
$Q_{g(on)}$	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{DSS}		240		nC
Q_{gs}			56		nC
Q_{gd}			107		nC
R_{thJC}				0.21	°C/W
R_{thCS}			0.05		°C/W

Source-Drain Diode (T_J = 25°C unless otherwise specified)			Characteristic Values Min.	Typ.	Max.	
I_S	V_{GS} = 0V	25N90			25	A
		26N90			26	A
I_{SM}	Repetitive, pulse width limited by T_{JM}	25N90			100	A
		26N90			104	A
V_{SD}	I_F = I_S, V_{GS} = 0V, Note 1				1.5	V
t_{rr}	I_F = I_S, -di/dt = 100A/μs				250	ns
Q_{RM}	V_R = 100V			1.4		μC
I_{RM}				10		A

SOT-227B Outline



SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	1.240	1.255	31.50	31.88
B	.307	.323	7.80	8.20
C	.161	.169	4.09	4.29
D	.161	.169	4.09	4.29
E	.161	.169	4.09	4.29
F	.587	.595	14.91	15.11
G	1.186	1.193	30.12	30.30
H	1.496	1.505	38.00	38.23
J	.460	.481	11.68	12.22
K	.351	.378	8.92	9.60
L	.030	.033	0.76	0.84
M	.496	.506	12.60	12.85
N	.990	1.001	25.15	25.42
O	.078	.084	1.98	2.13
P	.195	.235	4.95	5.97
Q	1.045	1.059	26.54	26.90
R	.155	.174	3.94	4.42
S	.186	.191	4.72	4.85
T	.968	.987	24.59	25.07
U	-.002	.004	-0.05	0.1

Note 1: Pulse test, t ≤ 300μs; duty cycle, d ≤ 2%.

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 4,850,072 4,881,106 4,931,844 5,017,508 5,034,796 5,049,961 5,063,307 5,187,117 5,237,481 5,381,025 5,486,715 6,162,665 6,259,123 B1 6,306,728 B1 6,404,065 B1 6,534,343 6,583,505 6,683,344 6,710,405 B2 6,710,463 6,727,585 6,759,692 6,771,478 B2 7,005,734 B2 7,063,975 B2 7,071,537 7,157,338B2

Figure 1. Output Characteristics at 25°C

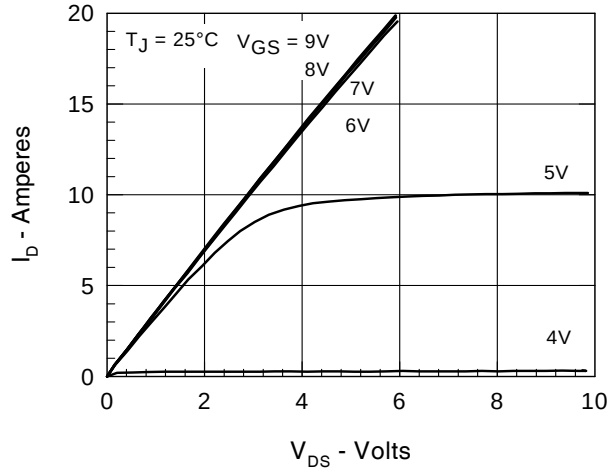


Figure 2. Extended Output Characteristics at 125°C

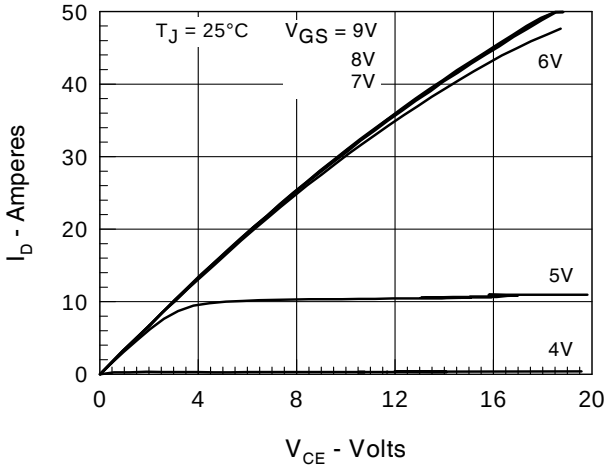


Figure 3. $R_{DS(on)}$ normalized to 0.5 I_{D25} value vs. I_D

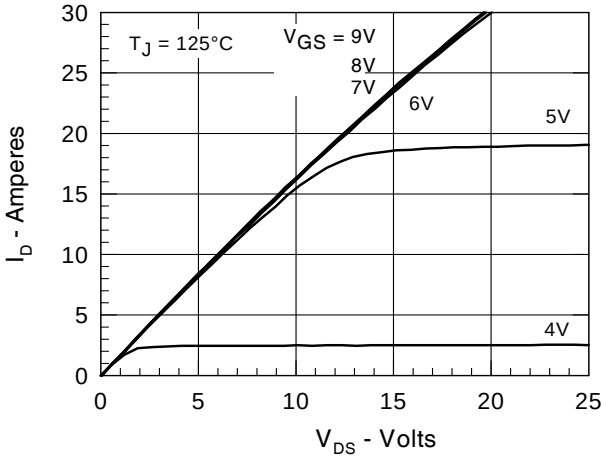


Figure 4. Admittance Curves

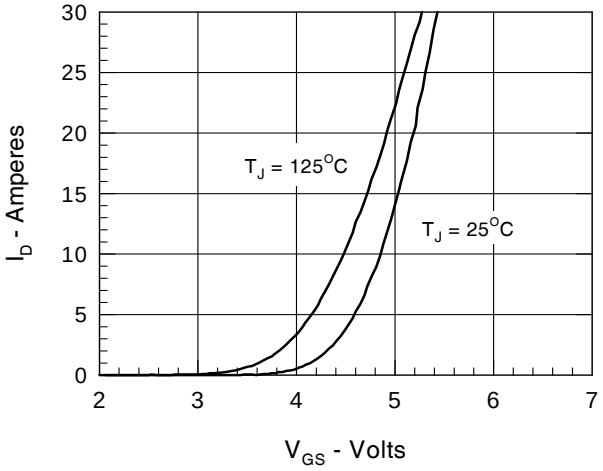


Figure 5. $R_{DS(on)}$ normalized to 0.5 I_{D25} value vs. I_D

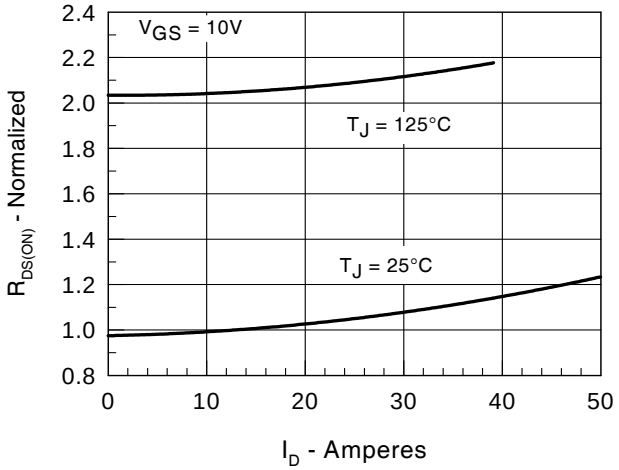
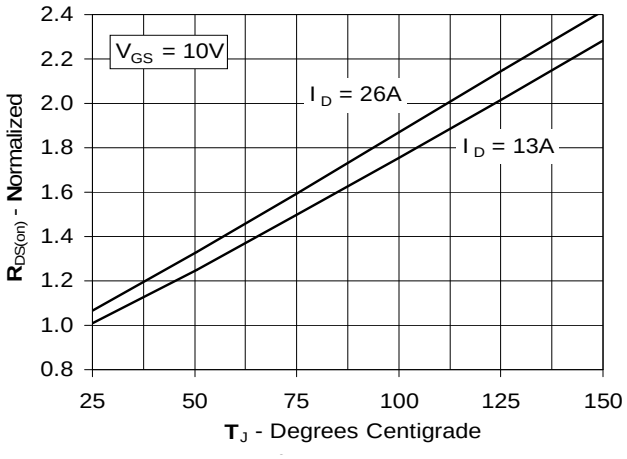


Fig. 6. $R_{DS(on)}$ Normalized to 0.5 I_{D25} Value vs. Junction Temperature



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Figure 7. Gate Charge

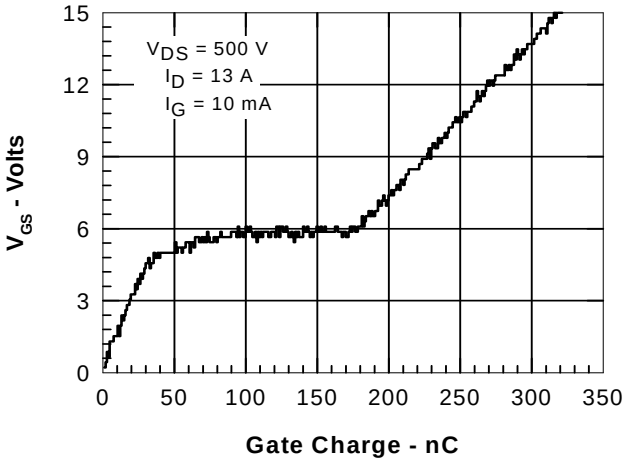
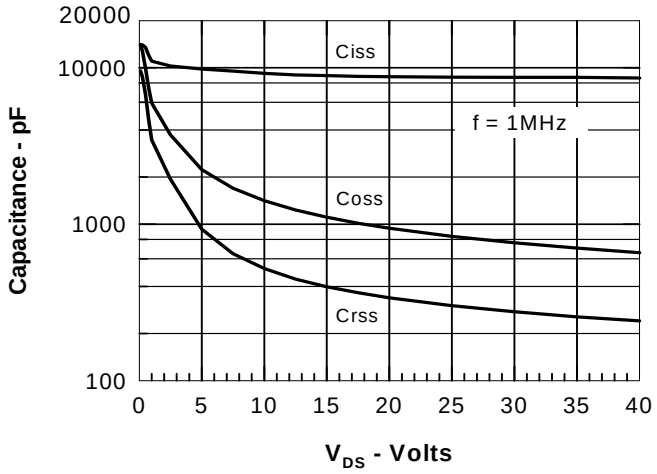
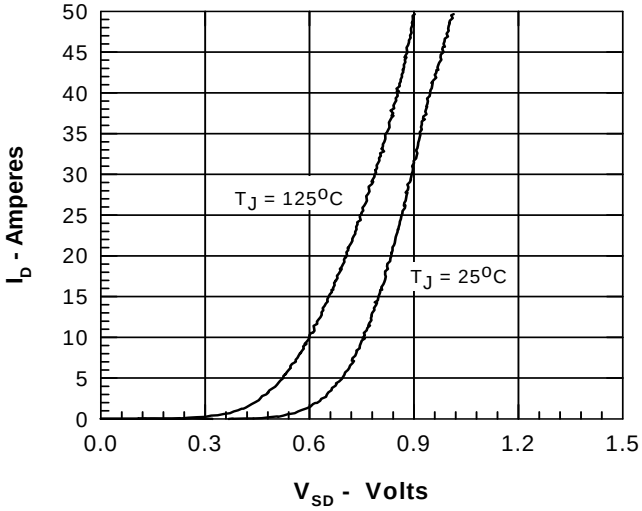
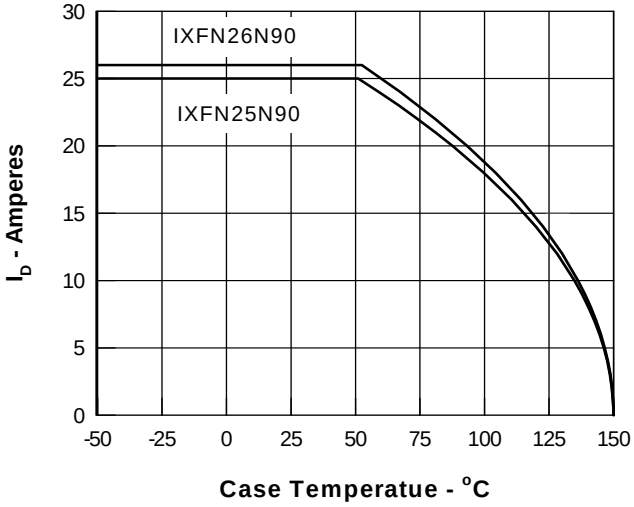


Figure 8. Capacitance Curves







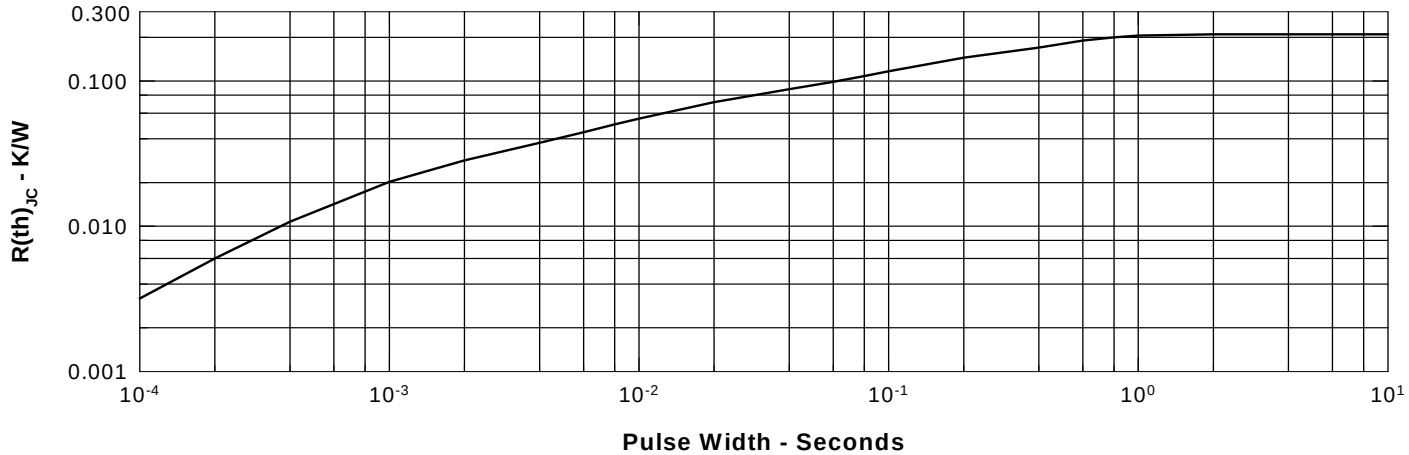


Figure 11. Transient Thermal Resistance

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