IXYS

Preliminary Technical Information

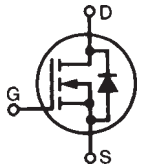
Polar™ Power MOSFET

IXTA7N60PM
IXTP7N60PM

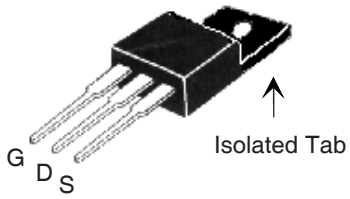
V_{DSS} = 600V
I_{D25} = 4A
$R_{DS(on)}$ ≤ 1.1Ω

(Electrically Isolated Tab)

N-Channel Enhancement Mode
Avalanche Rated
Fast Intrinsic Diode



OVERMOLDED TO-220 (IXTP...M) OUTLINE



G = Gate D = Drain
S = Source

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	T_J = 25°C to 150°C	600	V
V_{DGR}	T_J = 25°C to 150°C, R_{GS} = 1 MΩ	600	V
V_{GSS}	Continuous	± 30	V
V_{GSM}	Transient	± 40	V
I_{D25}	T_C = 25°C	4	A
I_{DM}	T_C = 25°C, pulse width limited by T_{JM}	14	A
I_A	T_C = 25°C	7	A
E_{AS}	T_C = 25°C	400	mJ
dv/dt	$I_S \le I_{DM}$, $V_{DD} \le V_{DSS}$, T_J =150°C	10	V/ns
P_D	T_C = 25°C	41	W
T_J		- 55 ... +150	°C
T_{JM}		150	°C
T_{stg}		- 55 ... +150	°C
T_L	1.6 mm (0.062 in.) from case for 10 s	300	°C
T_{SOLD}	Plastic body for 10 s	260	°C
M_d	Mounting torque	1.13/10	Nm/lb.in.
Weight		2.5	g

Symbol	Test Conditions (T_J = 25°C, unless otherwise specified)	Characteristic Values Min.	Typ.	Max.	
BV_{DSS}	V_{GS} = 0V, I_D = 250μA	600			V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, I_D = 100μA	3.0		5.5	V
I_{GSS}	V_{GS} = ±30V, V_{DS} = 0V			±100	nA
I_{DSS}	$V_{DS} = V_{DSS}$, V_{GS} = 0V			5	μA
	T_J = 125°C			50	μA
$R_{DS(on)}$	V_{GS} = 10V, I_D = 3.5A, Note 1			1.1	Ω

Features

- Plastic overmolded tab for electrical isolation
- International standard package
- Avanlanche rated
- Low package inductance
  - easy to drive and to protect

Advantages

- Easy to mount
- Space savings

Applications

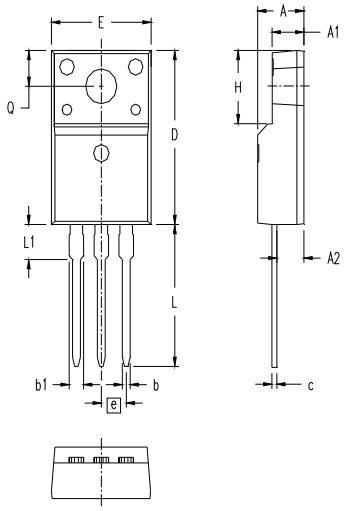
- DC-DC converters
- Battery chargers
- Switched-mode and resonant-mode power supplies
- DC choppers
- AC motor drives
- Uninterruptible power supplies
- High speed power switching applications

Symbol	Test Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) Min.	Typ.	Max.	
g_{fs}	V_{DS}= 10V, I_D = 3.5A, Note 1	4	7		S
C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		1180		pF
C_{oss}			110		pF
C_{rss}			11		pF
$t_{d(on)}$	**Resistive Swithcing Times**		20		ns
t_r	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 7A		27		ns
$t_{d(off)}$	R_G = 18Ω (External)		65		ns
t_f			26		ns
$Q_{g(on)}$	V_{GS}= 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 3.5A		20		nC
Q_{gs}			7		nC
Q_{gd}			7		nC
R_{thJC}				3.0	°C/W

Source-Drain Diode

Symbol	Test Conditions	Characteristic Values (T_J = 25°C unless otherwise specified) Min.	Typ.	Max.	
I_S	V_{GS} = 0V			7	A
I_{SM}	Repetitive, pulse width limited by T_{JM}			28	A
V_{SD}	I_F = I_S, V_{GS} = 0V, Note 1			1.5	V
t_{rr}	I_F = 7A, -di/dt = 100A/μs, V_R = 100V, V_{GS} = 0V		500		ns

ISOLATED TO-220 (IXTP...M)



Terminals: 1 - Gate
2 - Drain (Collector)
3 - Source (Emitter)

SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	.177	.193	4.50	4.90
A1	.092	.108	2.34	2.74
A2	.101	.117	2.56	2.96
b	.028	.035	0.70	0.90
b1	.050	.058	1.27	1.47
c	.018	.024	0.45	0.60
D	.617	.633	15.67	16.07
E	.392	.408	9.96	10.36
e	.100 BSC		2.54 BSC	
H	.255	.271	6.48	6.88
L	.499	.523	12.68	13.28
L1	.119	.135	3.03	3.43
ØP	.121	.129	3.08	3.28
Q	.126	.134	3.20	3.40

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

PRELIMINARY TECHNICAL INFORMATION

The product presented herein is under development. The Technical Specifications offered are derived from data gathered during objective characterizations of preliminary engineering lots; but also may yet contain some information supplied during a pre-production design evaluation. IXYS reserves the right to change limits, test conditions, and dimensions without notice.

Fig. 1. Output Characteristics @ 25ºC

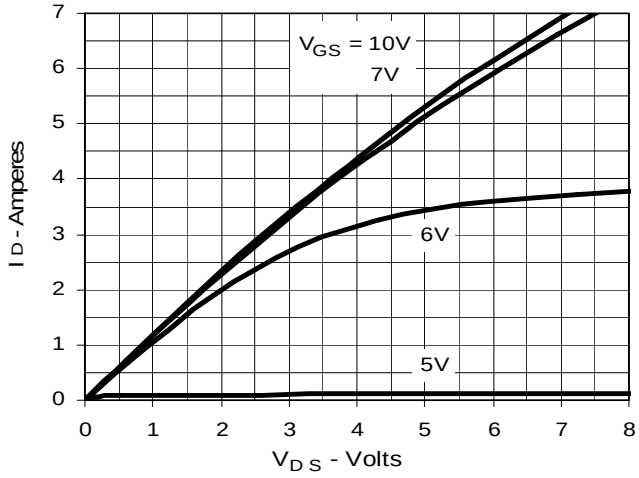


Fig. 2. Extended Output Characteristics @ 25ºC

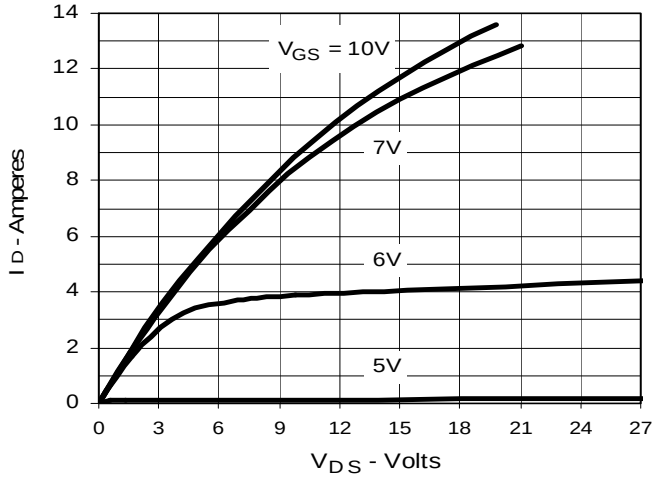


Fig. 3. Output Characteristics @ 125ºC

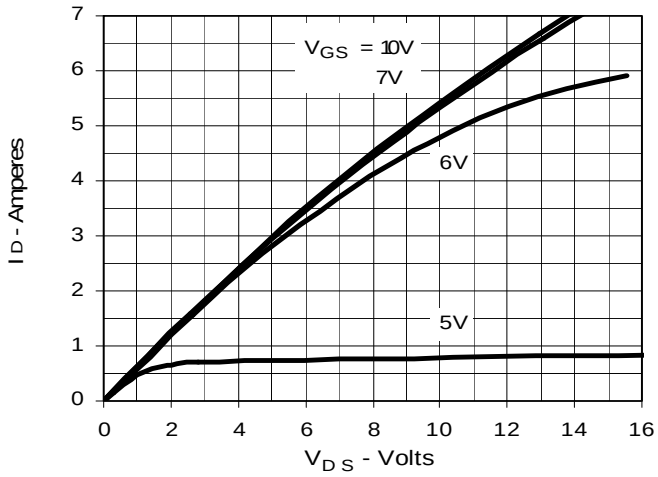


Fig. 4. $R_{DS(on)}$ Normalized to 0.5 I_{D25} Value vs. Junction Temperature

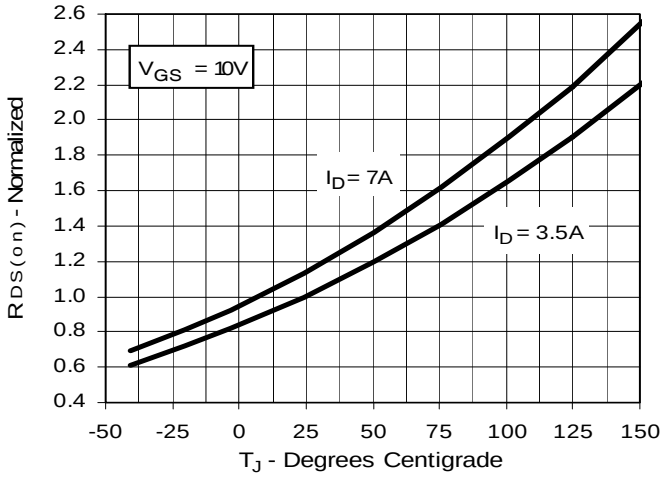


Fig. 5. $R_{DS(on)}$ Normalized to 0.5 I_{D25} Value vs. I_D

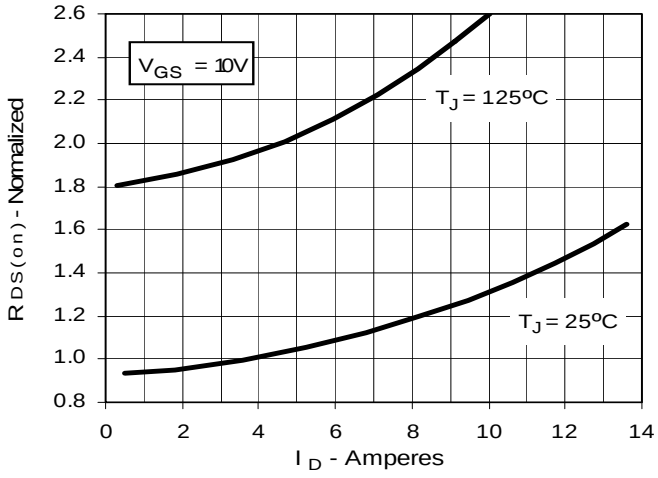


Fig. 6. Drain Current vs. Case Temperature

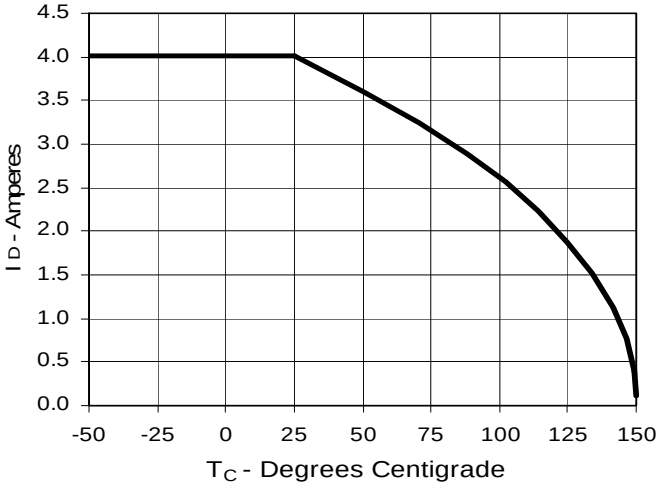


Fig. 7. Input Admittance

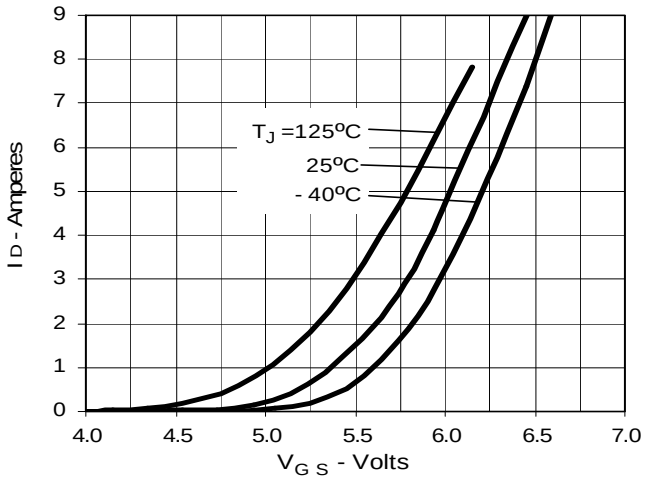


Fig. 8. Transconductance

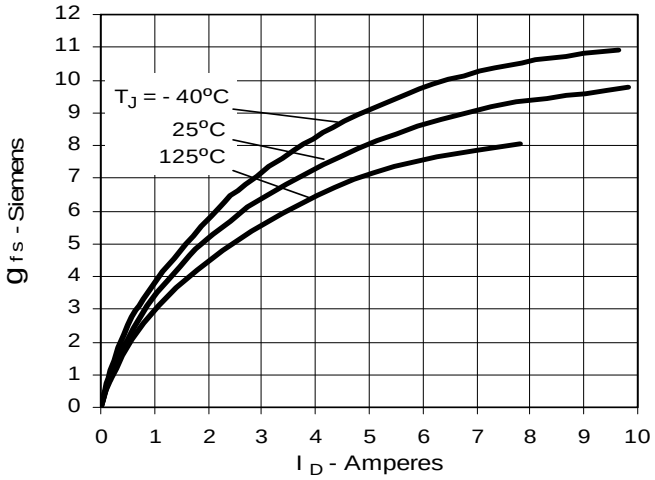


Fig. 9. Source Current vs. Source-To-Drain Voltage

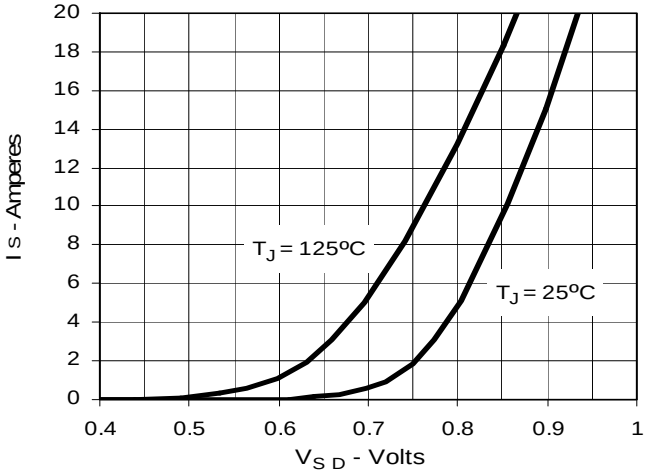


Fig. 10. Gate Charge

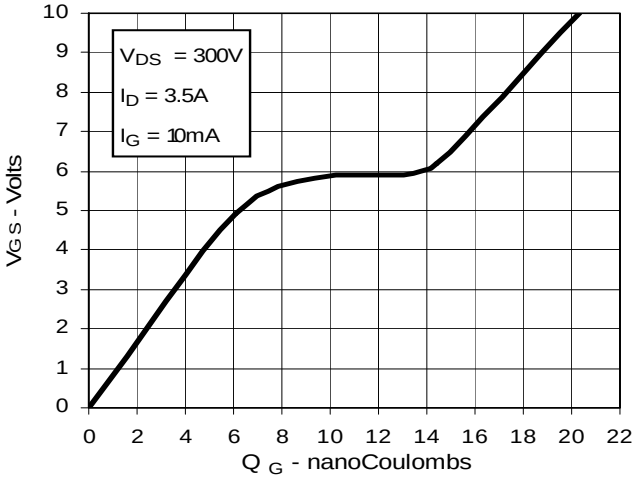


Fig. 11. Capacitance

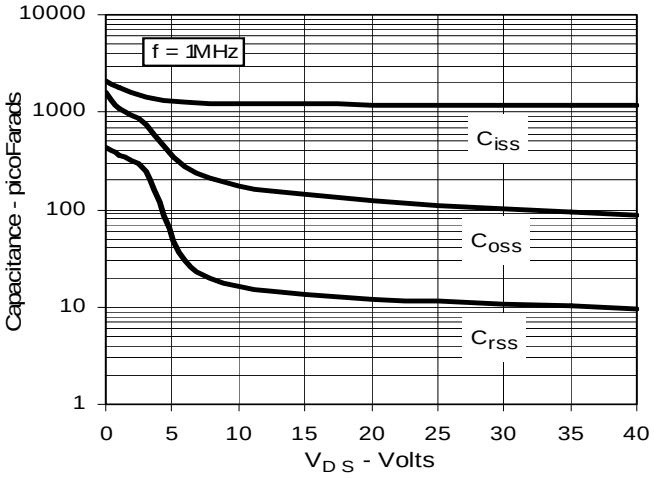
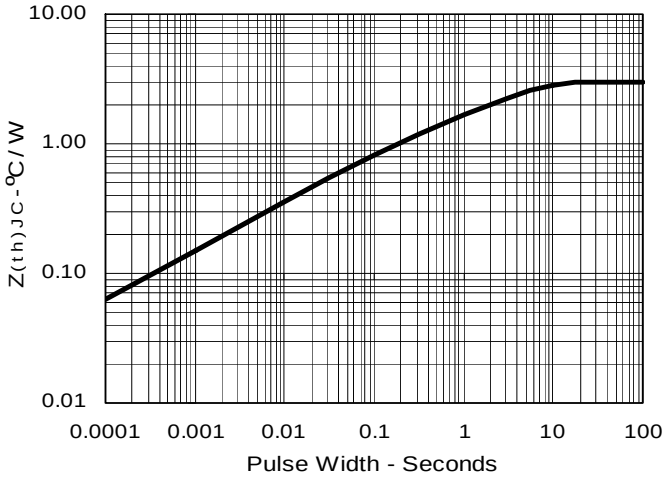


Fig. 12. Maximum Transient Thermal Impedance



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET ***category:***

Click to view products by IXYS ***manufacturer:***

Other Similar products are found below :

614233C 648584F IRFD120 JANTX2N5237 FCA20N60_F109 FDZ595PZ 2SK2545(Q,T) 405094E 423220D TPCC8103,L1Q(CM MIC4420CM-TR VN1206L 614234A 715780A NTNS3166NZT5G SSM6J414TU,LF(T 751625C BUK954R8-60E NTE6400 SQJ402EP-T1-GE3 2SK2614(TE16L1,Q) 2N7002KW-FAI DMN1017UCP3-7 EFC2J004NUZTDG ECH8691-TL-W FCAB21350L1 P85W28HP2F-7071 DMN1053UCP4-7 NTE221 NTE222 NTE2384 NTE2903 NTE2941 NTE2945 NTE2946 NTE2960 NTE2967 NTE2969 NTE2976 NTE6400A NTE2910 NTE2916 NTE2956 NTE2911 DMN2080UCB4-7 TK10A80W,S4X(S SSM6P69NU,LF DMP22D4UFO-7B DMN1006UCA6-7 DMN16M9UCA6-7