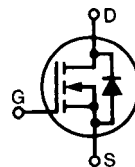


MegaMOS™FET

IXTH / IXTM 67N10
IXTH / IXTM 75N10

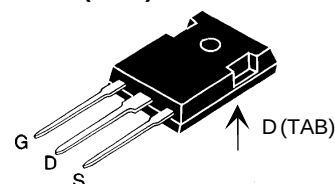
V_{DSS}	I_{D25}	$R_{DS(on)}$
100 V	67 A	25 mΩ
100 V	75 A	20 mΩ

N-Channel Enhancement Mode

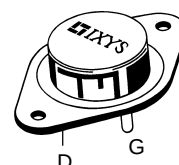


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	100	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1\text{ M}\Omega$	100	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	67N10 75N10	67 75 A A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}	67N10 75N10	268 300 A A
P_D	$T_C = 25^\circ\text{C}$	300	W
T_J		-55 ... +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		-55 ... +150	$^\circ\text{C}$
M_d	Mounting torque	1.13/10	Nm/lb.in.
Weight		TO-204 = 18 g, TO-247 = 6 g	
Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s		300	$^\circ\text{C}$

TO-247 AD (IXTH)



TO-204 AE (IXTM)



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

Features

- International standard packages
- Low $R_{DS(on)}$ HDMOS™ process
- Rugged polysilicon gate cell structure
- Low package inductance (< 5 nH)
 - easy to drive and to protect
- Fast switching times

Applications

- Switch-mode and resonant-mode power supplies
- Motor controls
- Uninterruptible Power Supplies (UPS)
- DC choppers

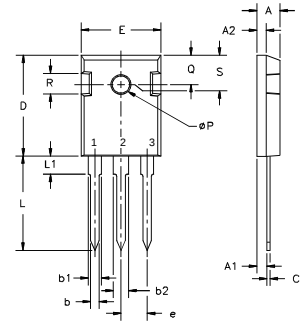
Advantages

- Easy to mount with 1 screw (TO-247) (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}	$V_{GS} = 0\text{ V}$, $I_D = 250\text{ }\mu\text{A}$	100		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\text{ }\mu\text{A}$	2		4 V
I_{GSS}	$V_{GS} = \pm 20\text{ V}_{DC}$, $V_{DS} = 0$			$\pm 100\text{ nA}$
I_{DSS}	$V_{DS} = 0.8 \cdot V_{DSS}$, $V_{GS} = 0\text{ V}$			200 μA 1 mA
$R_{DS(on)}$	$V_{GS} = 10\text{ V}$, $I_D = 0.5 I_{D25}$			0.025 Ω 0.020 Ω
Pulse test, $t \leq 300\text{ }\mu\text{s}$, duty cycle $d \leq 2\%$				

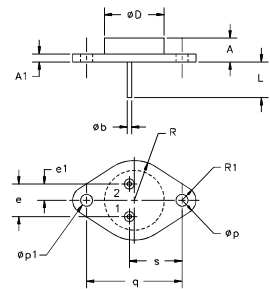
Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
g_{fs}	$V_{DS} = 10\text{ V}$; $I_D = 0.5 I_{D25}$, pulse test	25	30	S
C_{iss}	$V_{GS} = 0\text{ V}$, $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$		4500	pF
C_{oss}			1300	pF
C_{rss}			550	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}$, $V_{DS} = 0.5 \cdot V_{DSS}$, $I_D = 0.5 I_{D25}$ $R_G = 2\ \Omega$, (External)		40	60 ns
t_r			60	110 ns
$t_{d(off)}$			100	140 ns
t_f			30	60 ns
$Q_{g(on)}$	$V_{GS} = 10\text{ V}$, $V_{DS} = 0.5 \cdot V_{DSS}$, $I_D = 0.5 I_{D25}$		180	260 nC
Q_{gs}			30	70 nC
Q_{gd}			90	160 nC
R_{thJC}			0.42	K/W
R_{thCK}			0.25	K/W

Source-Drain Diode		Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
Symbol	Test Conditions	min.	typ.	max.
I_S	$V_{GS} = 0\text{ V}$			67 A 75 A
I_{SM}	Repetitive; pulse width limited by T_{JM}			268 A 300 A
V_{SD}	$I_F = I_S$, $V_{GS} = 0\text{ V}$, Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$			1.75 V
t_{rr}	$I_F = I_S$, $-di/dt = 100\text{ A}/\mu\text{s}$, $V_R = 100\text{ V}$		300	ns

TO-247 AD (IXTH) Outline


Terminals: 1 - Gate 2 - Drain
3 - Source Tab - Drain

Dim.	Millimeter Min. Max.	Inches 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
L1	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

TO-204AE (IXTM) Outline


Pins 1 - Gate 2 - Source
Case - Drain

Dim.	Millimeter Min. Max.	Inches Min. Max.
A	6.4 11.4	.250 .450
A ₁	1.53 3.42	.060 .135
Øb	1.45 1.60	.057 .063
ØD	22.22	.875
e	10.67 11.17	.420 .440
e ₁	5.21 5.71	.205 .225
L	11.18 12.19	.440 .480
Øp	3.84 4.19	.151 .165
Øp ₁	3.84 4.19	.151 .165
q	30.15 BSC	1.187 BSC
R	12.58 13.33	.495 .525
R ₁	3.33 4.77	.131 .188
s	16.64 17.14	.655 .675

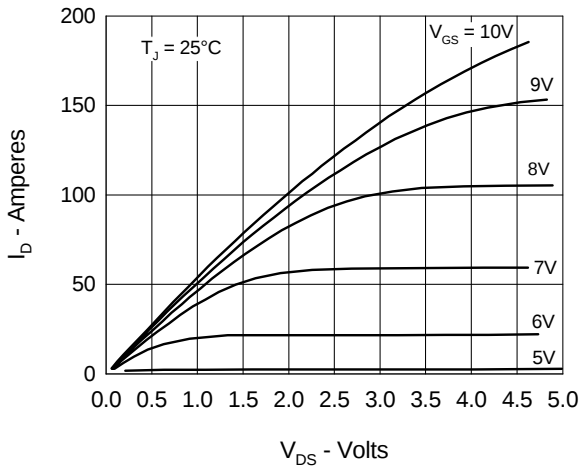
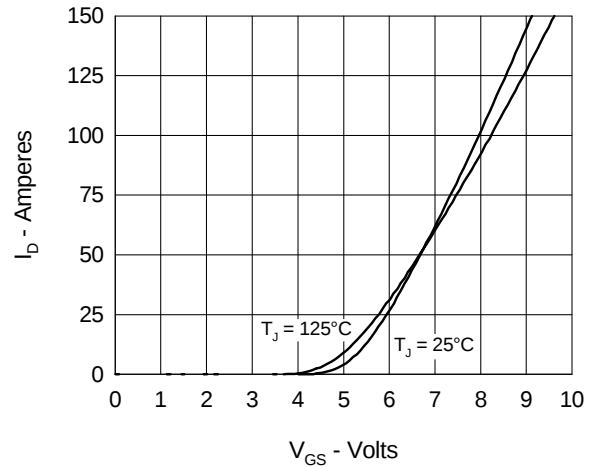
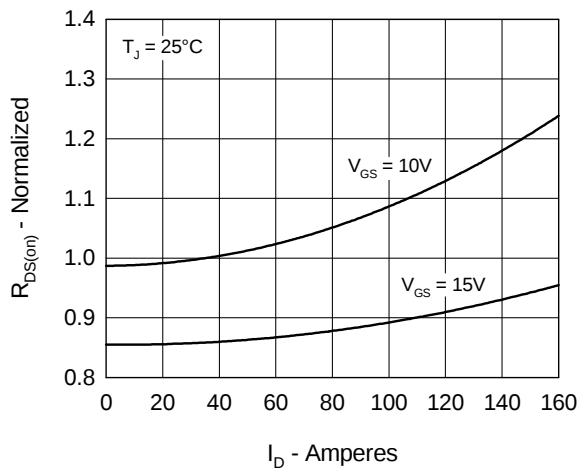
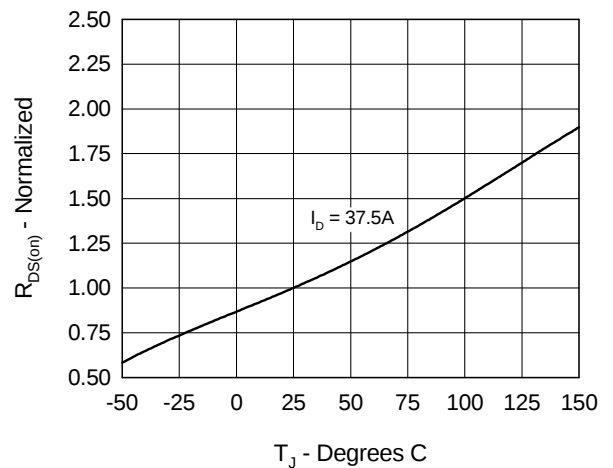
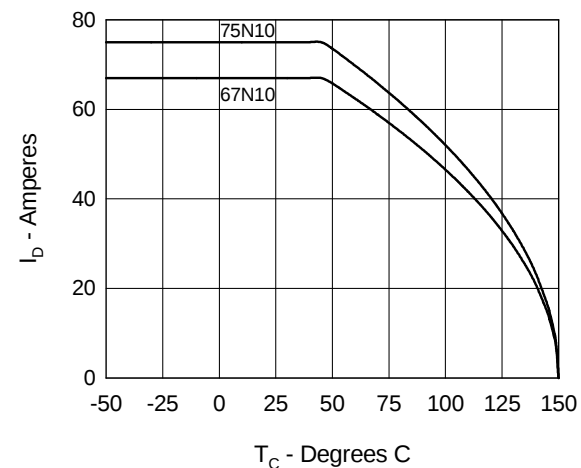
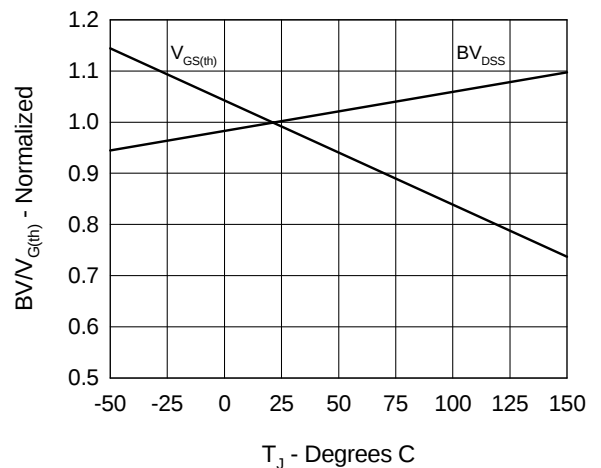
Fig. 1 Output Characteristics

Fig. 2 Input Admittance

Fig. 3 $R_{DS(on)}$ vs. Drain Current

Fig. 4 Temperature Dependence of Drain to Source Resistance

Fig. 5 Drain Current vs. Case Temperature

Fig. 6 Temperature Dependence of Breakdown and Threshold Voltage


Fig.7 Gate Charge Characteristic Curve

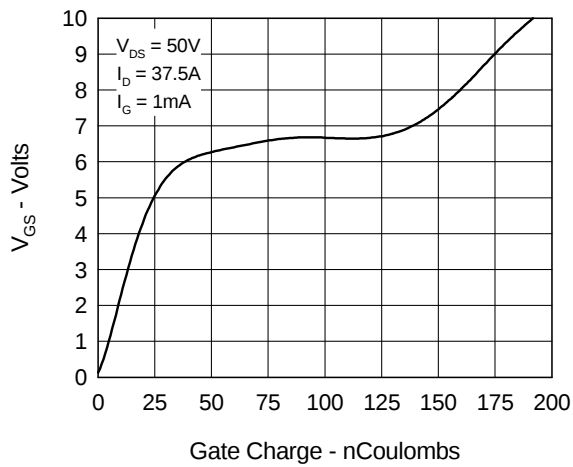


Fig.8 Forward Bias Safe Operating Area

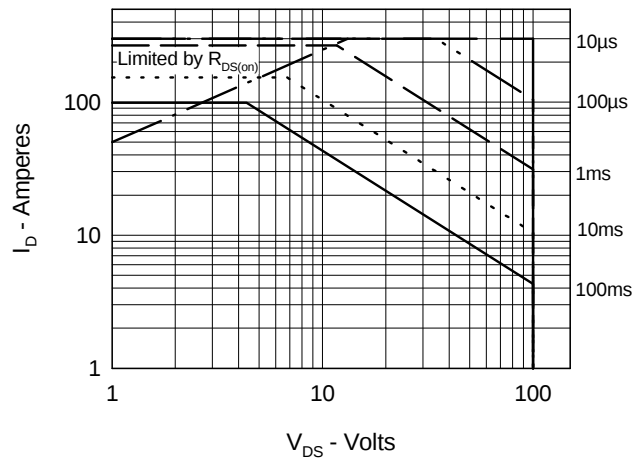


Fig.9 Capacitance Curves

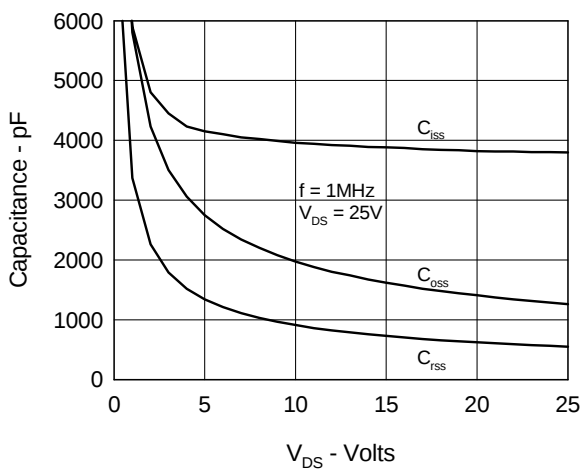


Fig.10 Source Current vs. Source to Drain Voltage

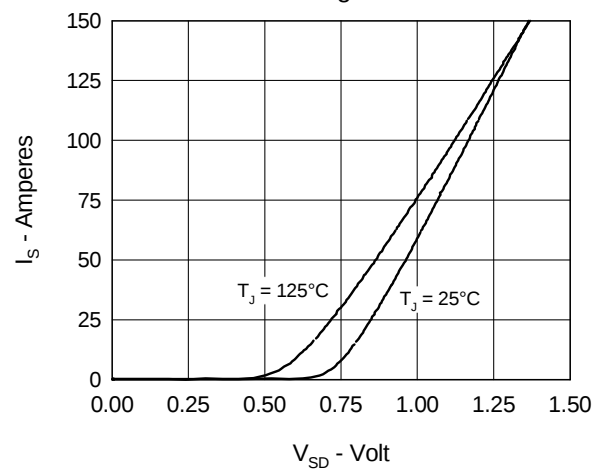


Fig.11 Transient Thermal Impedance

