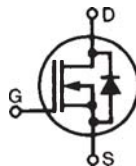


High Voltage MOSFETs

IXTH10N100D
IXTT10N100D

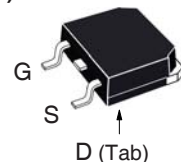
$$\begin{aligned} V_{DSX} &= 1000V \\ I_{D25} &= 10A \\ R_{DS(on)} &\leq 1.4\Omega \end{aligned}$$

N-Channel, Depletion Mode

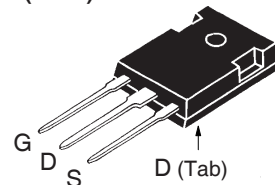


Symbol	Test Conditions	Maximum Ratings	
V_{DSX}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	1000	V
V_{DGX}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}, R_{GS} = 1M\Omega$	1000	V
V_{GSX}	Continuous	± 30	V
V_{GSM}	Transient	± 40	V
I_{D25}	$T_C = 25^\circ\text{C}$	10	A
I_{DM}	$T_C = 25^\circ\text{C}$, Pulse Width Limited by T_{JM}	20	A
P_D	$T_C = 25^\circ\text{C}$	400	W
T_J		- 55 ... +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		- 55 ... +150	$^\circ\text{C}$
T_L	1.6mm (0.062 in.) from Case for 10s	300	$^\circ\text{C}$
T_{SOLD}	Plastic Body for 10s	260	$^\circ\text{C}$
M_d	Mounting Torque (TO-247)	1.13 / 10	Nm/lb.in.
Weight	TO-268	4.0	g
	TO-247	6.0	g

TO-268 (IXTT)



TO-247 (IXTH)



G = Gate D = Drain
S = Source Tab = Drain

Features

- Normally ON Mode
- International Standard Packages
- Molding Epoxies meet UL 94 V-0 Flammability Classification

Advantages

- Easy to Mount
- Space Savings
- High Power Density

Applications

- Level Shifting
- Triggers
- Solid State Relays
- Current Regulators
- Active Load

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSX}	$V_{GS} = -10V, I_D = 250\mu A$	1000		V
$V_{GS(off)}$	$V_{DS} = 25V, I_D = 250\mu A$	-1.5		- 3.5 V
I_{GSX}	$V_{GS} = \pm 30V, V_{DS} = 0V$			± 100 nA
$I_{DSX(off)}$	$V_{DS} = V_{DSX}, V_{GS} = -10V$ $T_J = 125^\circ\text{C}$			25 μA 500 μA
$R_{DS(on)}$	$V_{GS} = 10V, I_D = 10A$, Note 1			1.4 Ω
$I_{D(on)}$	$V_{GS} = 0V, V_{DS} = 25V$, Note 1		10	A

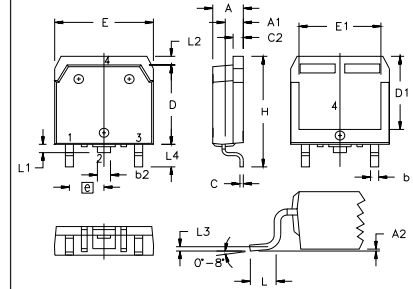
Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$V_{DS} = 30\text{V}$, $I_D = 0.5 \cdot I_{D25}$, Note 1	3.0	5.4	S
C_{iss}	$V_{GS} = -10\text{V}$, $V_{DS} = 25\text{V}$, $f = 1\text{MHz}$		2500	pF
C_{oss}			300	pF
C_{rss}			100	pF
$t_{d(on)}$	Resistive Switching Times $V_{GS} = -10\text{V}$, $V_{DS} = 0.5 \cdot V_{DSX}$, $I_D = 0.5 \cdot I_{D25}$ $R_G = 4.7\Omega$ (External)		35	ns
t_r			85	ns
$t_{d(off)}$			110	ns
t_f			75	ns
$Q_{g(on)}$	$V_{GS} = 10\text{V}$, $V_{DS} = 0.5 \cdot V_{DSX}$, $I_D = 0.5 \cdot I_{D25}$		130	nC
Q_{gs}			27	nC
Q_{gd}			58	nC
R_{thJC}	TO-247			0.31 $^\circ\text{C/W}$
R_{thCS}			0.21	$^\circ\text{C/W}$

Source-Drain Diode

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
V_{SD}	$I_F = I_{D25}$, $V_{GS} = -10\text{V}$, Note 1		1.1	1.5 V
t_{rr}	$I_F = 10\text{A}$, $-di/dt = 100\text{A}/\mu\text{s}$ $V_R = 100\text{V}$, $V_{GS} = -10\text{V}$		850	ns

Note 1: Pulse test, $t \leq 300\mu\text{s}$, duty cycle, $d \leq 2\%$.

TO-268 Outline



Terminals: 1 - Gate, 2,4 - Drain
3 - Source

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.193	.201	4.90	5.10
A1	.106	.114	2.70	2.90
A2	.001	.010	0.02	0.25
b	.045	.057	1.15	1.45
b2	.075	.083	1.90	2.10
C	.016	.026	0.40	0.65
C2	.057	.063	1.45	1.60
D	.543	.551	13.80	14.00
D1	.488	.500	12.40	12.70
E	.624	.632	15.85	16.05
E1	.524	.535	13.30	13.60
e	.215 BSC		5.45 BSC	
H	.736	.752	18.70	19.10
L	.094	.106	2.40	2.70
L1	.047	.055	1.20	1.40
L2	.039	.045	1.00	1.15
L3	.010 BSC		0.25 BSC	
L4	.150	.161	3.80	4.10

TO-247 Outline

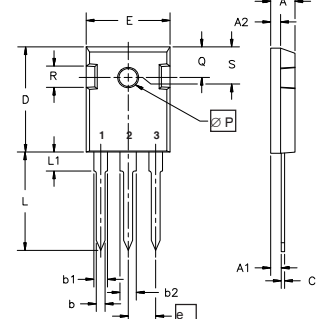


Fig. 1. Output Characteristics @ $T_J = 25^\circ\text{C}$

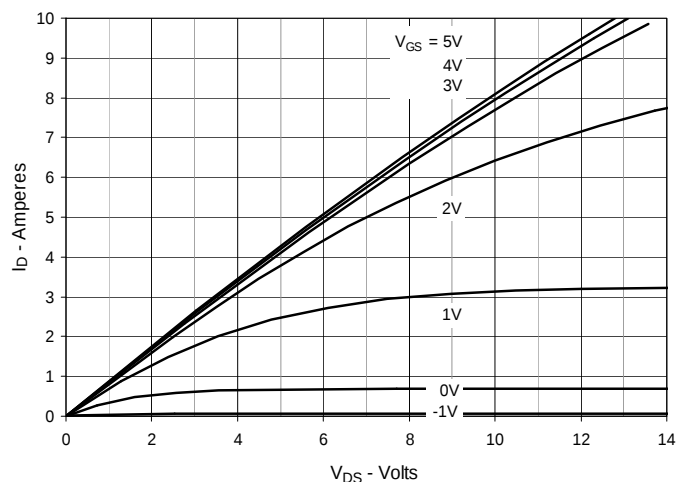


Fig. 2. Extended Output Characteristics @ $T_J = 25^\circ\text{C}$

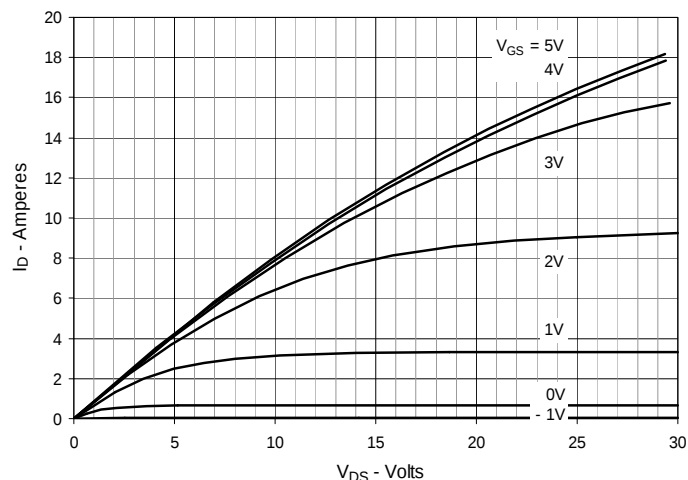


Fig. 3. Output Characteristics @ $T_J = 125^\circ\text{C}$

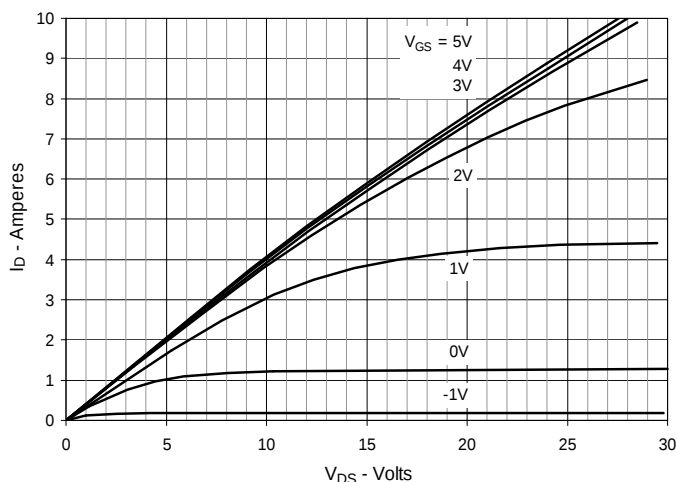


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 5\text{A}$ Value vs. Junction Temperature

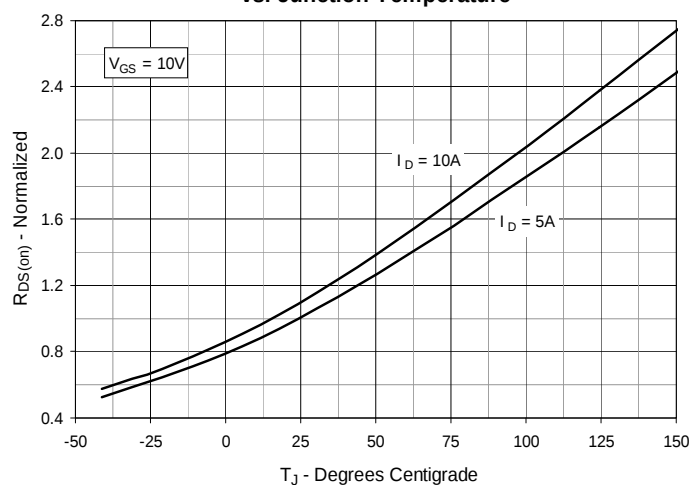


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 5\text{A}$ Value vs. Drain Current

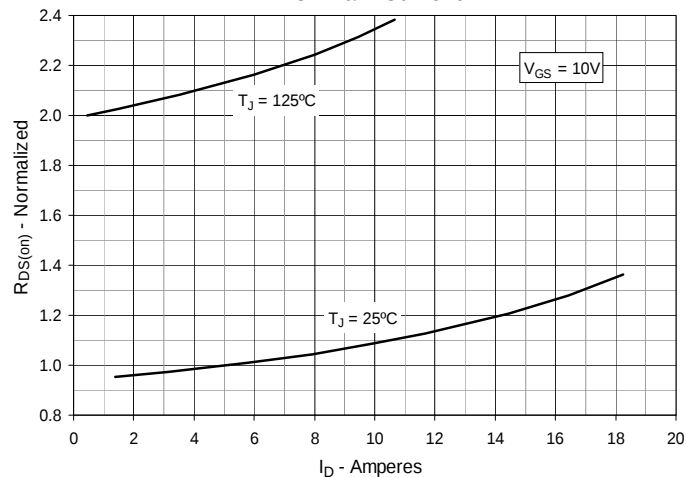


Fig. 6. Maximum Drain Current vs. Case Temperature

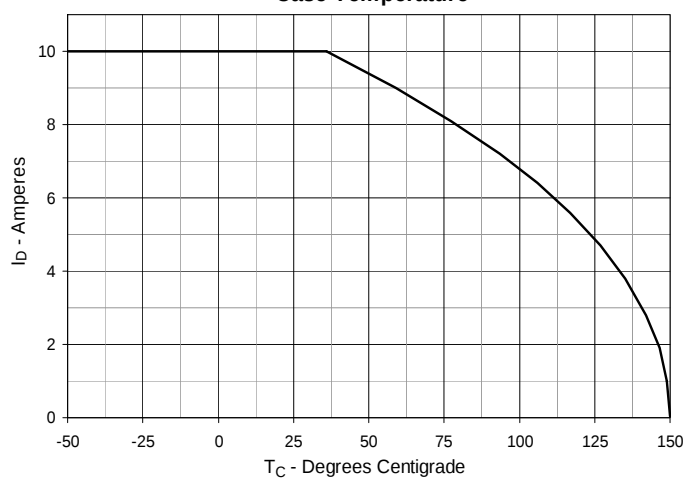


Fig. 7. Input Admittance

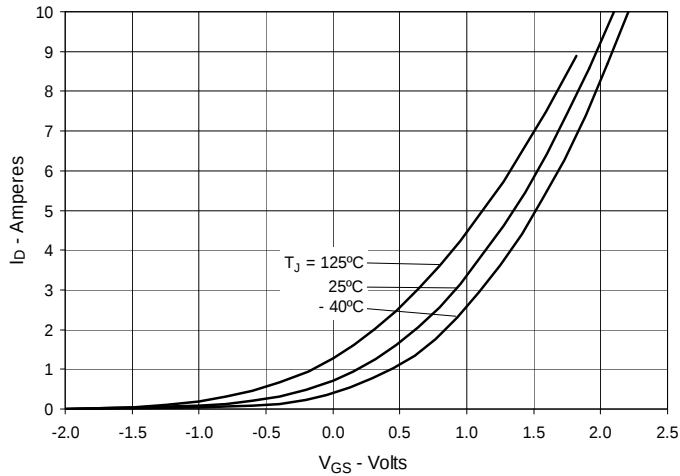


Fig. 8. Transconductance

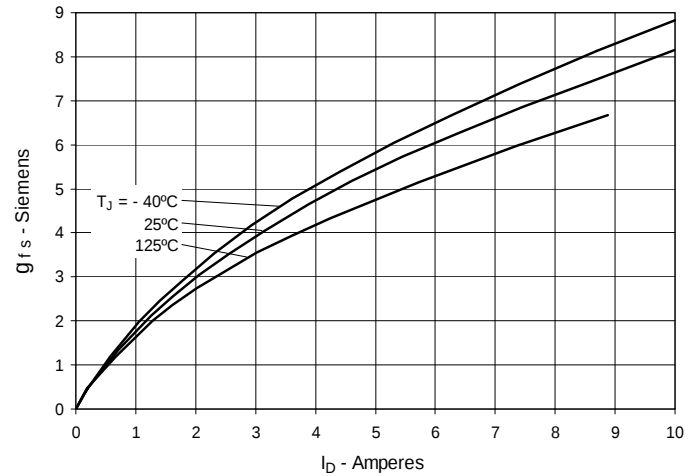


Fig. 9. Forward Voltage Drop of Intrinsic Diode

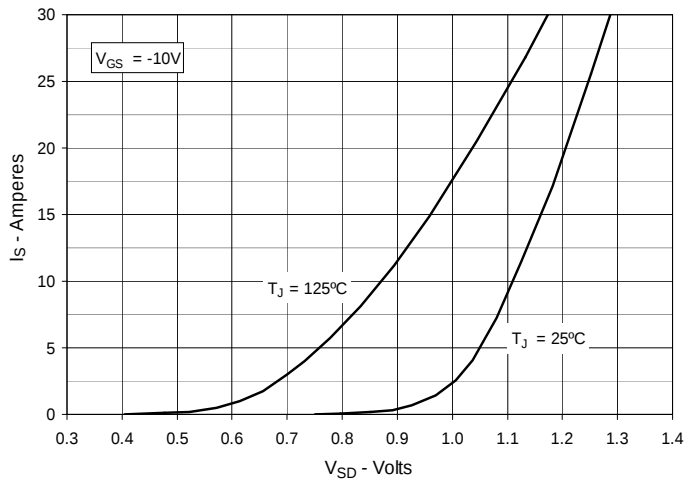


Fig. 10. Breakdown & Threshold Voltages vs. Junction Temperature

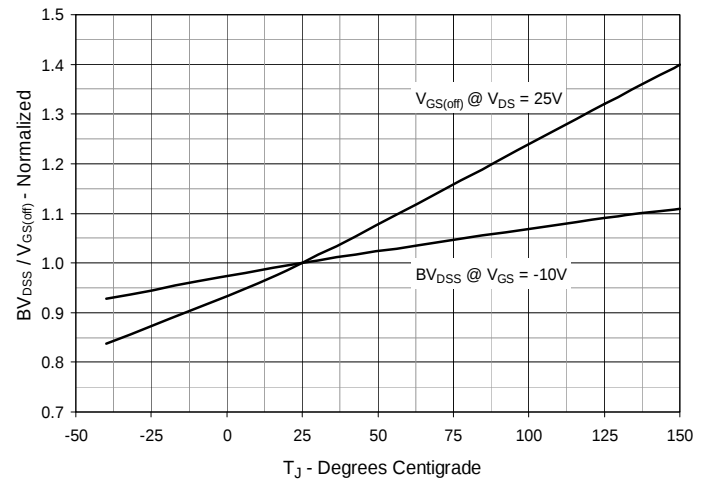


Fig. 11. Gate Charge

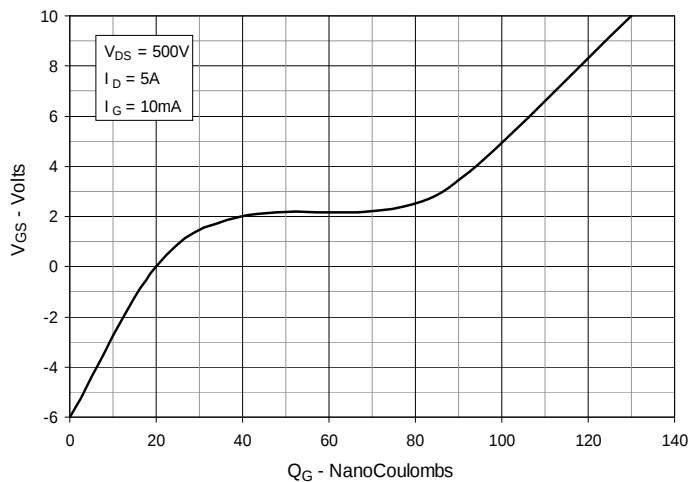


Fig. 12. Capacitance

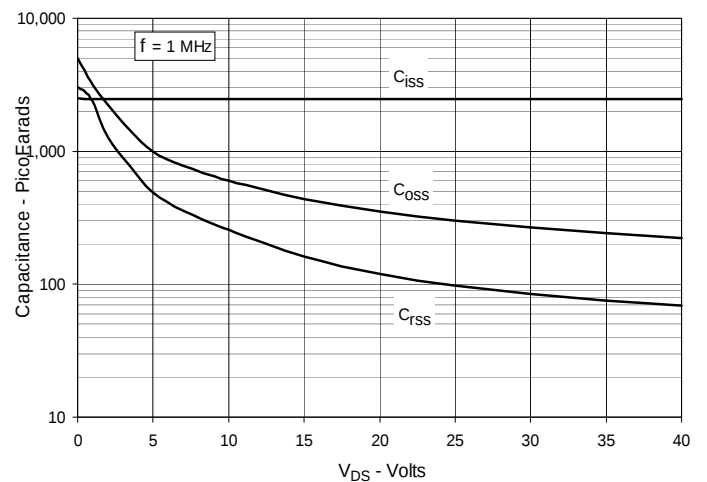


Fig. 13. Forward-Bias Safe Operating Area
@ $T_C = 25^\circ\text{C}$

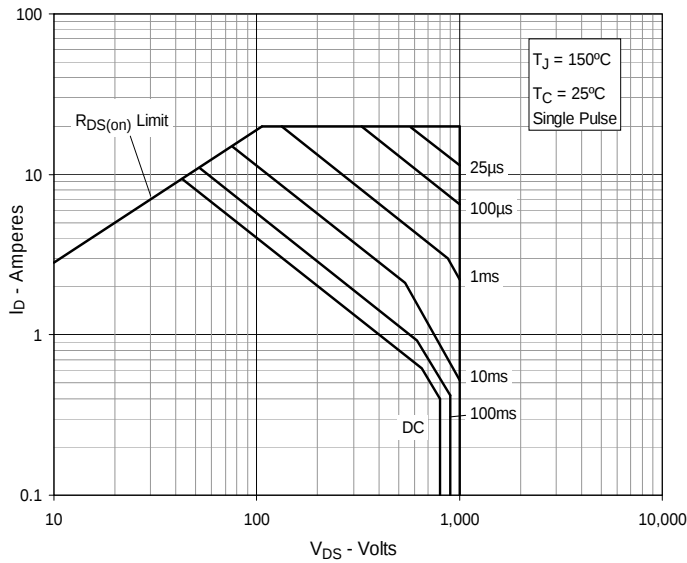


Fig. 14. Forward-Bias Safe Operating Area
@ $T_C = 75^\circ\text{C}$

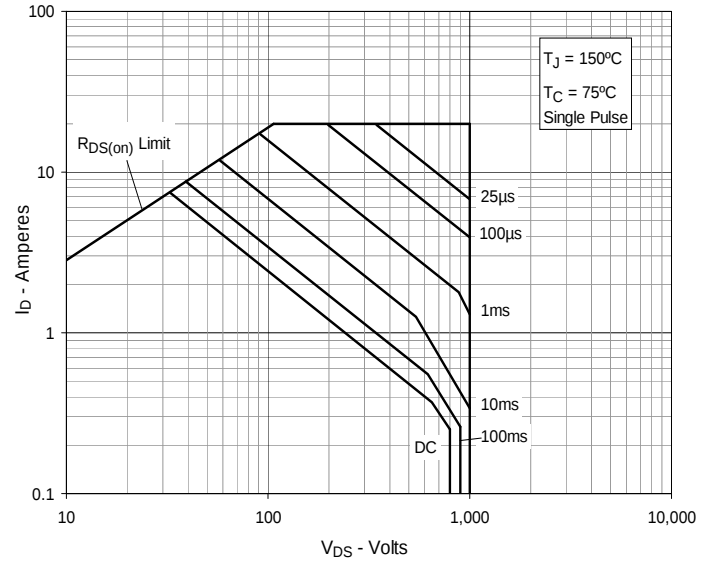


Fig. 15. Maximum Transient Thermal Impedance

