

High Voltage MOSFET

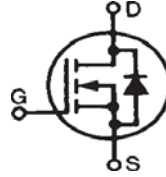
IXTH20N50D IXTT20N50D

N-Channel, Depletion Mode

$$V_{DSX} = 500V$$

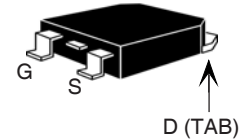
$$I_{D25} = 20A$$

$$R_{DS(on)} \leq 330m\Omega$$

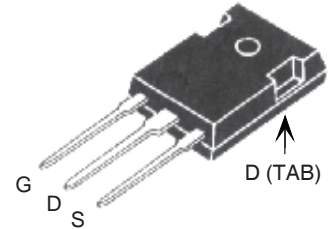


Symbol	Test Conditions	Maximum Ratings	
V_{DSX}	$T_J = 25^\circ C$ to $150^\circ C$	500	V
V_{DGX}	$T_J = 25^\circ C$ to $150^\circ C$, $R_{GS} = 1M\Omega$	500	V
V_{GSX}	Continuous	± 30	V
V_{GSM}	Transient	± 40	V
I_{D25}	$T_C = 25^\circ C$	20	A
I_{DM}	$T_C = 25^\circ C$, Pulse Width Limited by T_{JM}	50	A
P_D	$T_C = 25^\circ C$	400	W
T_J		- 55 ... +150	$^\circ C$
T_{JM}		150	$^\circ C$
T_{stg}		- 55 ... +150	$^\circ C$
T_L	1.6mm (0.062 in.) from Case for 10s	300	$^\circ C$
T_{SOLD}	Plastic Body for 10s	260	$^\circ C$
M_d	Mounting Torque (TO-247)	1.13 / 10	Nm/lb.in.
Weight	TO-268	4	g
	TO-247	6	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 ($T_J = 25^\circ C$, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSX}	$V_{GS} = -10V$, $I_D = 250\mu A$	500		V
$V_{GS(off)}$	$V_{DS} = 25V$, $I_D = 250\mu A$	-1.5		- 3.5 V
I_{GSS}	$V_{GS} = \pm 30V$, $V_{DS} = 0V$			± 100 nA
I_{DSS}	$V_{DS} = V_{DSX}$, $V_{GS} = -10V$ $T_J = 125^\circ C$			25 μA 500 μA
$R_{DS(on)}$	$V_{GS} = 10V$, $I_D = 10A$, Note 1			330 m Ω
$I_{D(on)}$	$V_{GS} = 0V$, $V_{DS} = 25V$, Note 1		2.3	A

Fig. 1. Output Characteristics @ 25°C

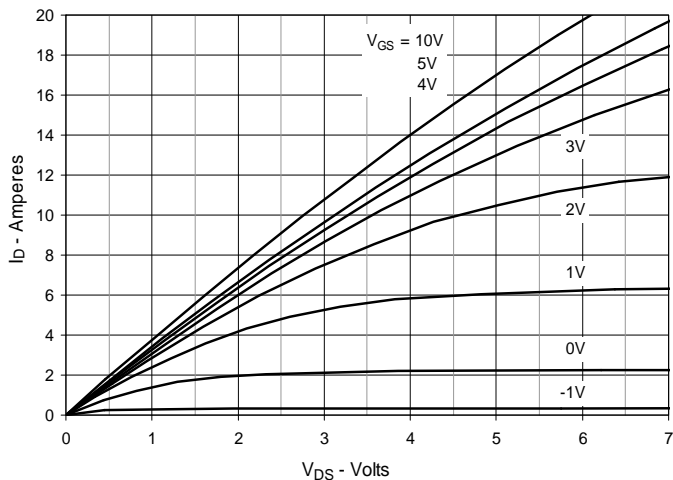


Fig. 2. Extended Output Characteristics @ 25°C

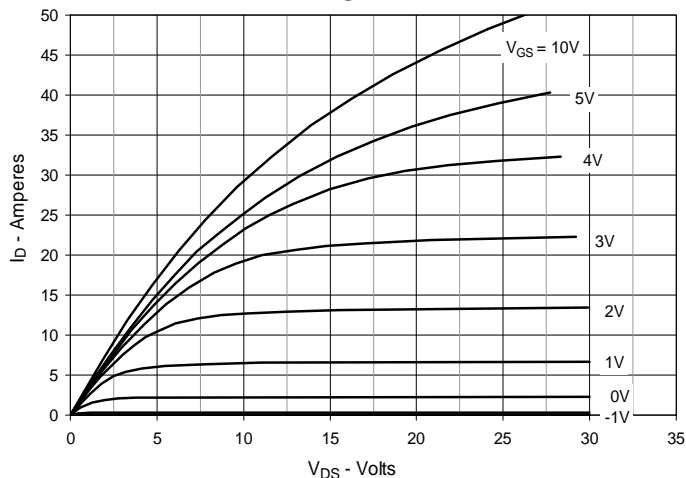


Fig. 3. Output Characteristics @ 125°C

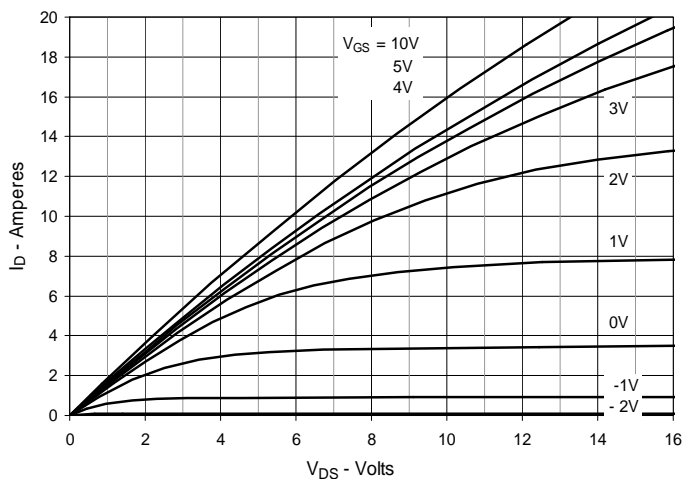


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 10A$ Value vs. Junction Temperature

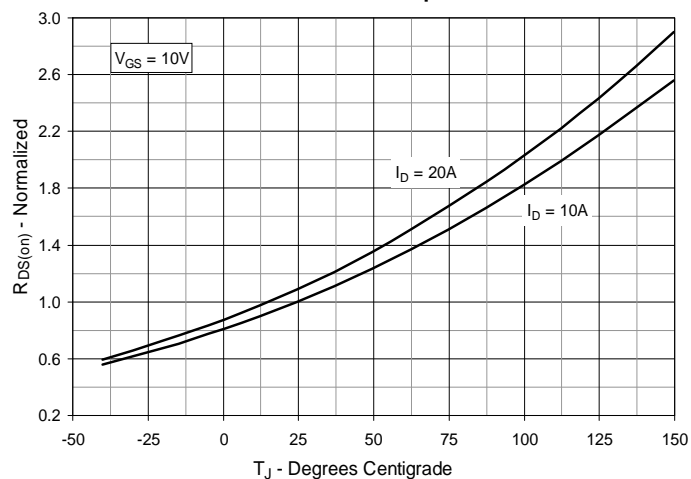


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 10A$ Value vs. Drain Current

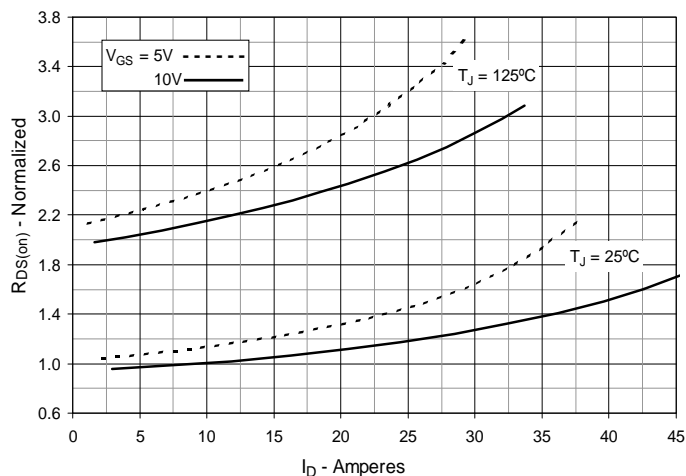


Fig. 6. Maximum Drain Current vs. Case Temperature

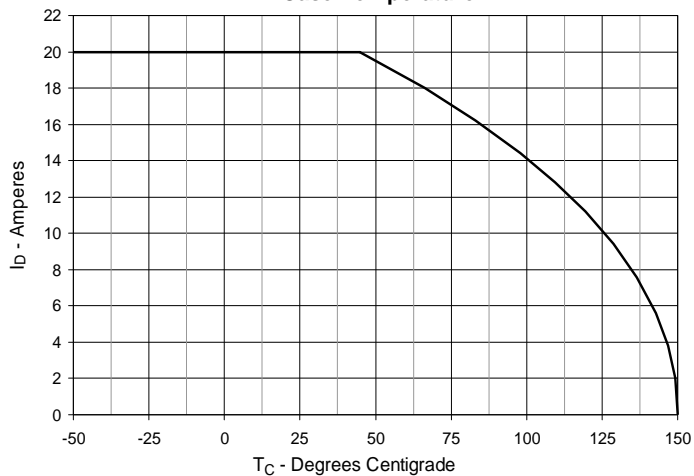


Fig. 7. Input Admittance

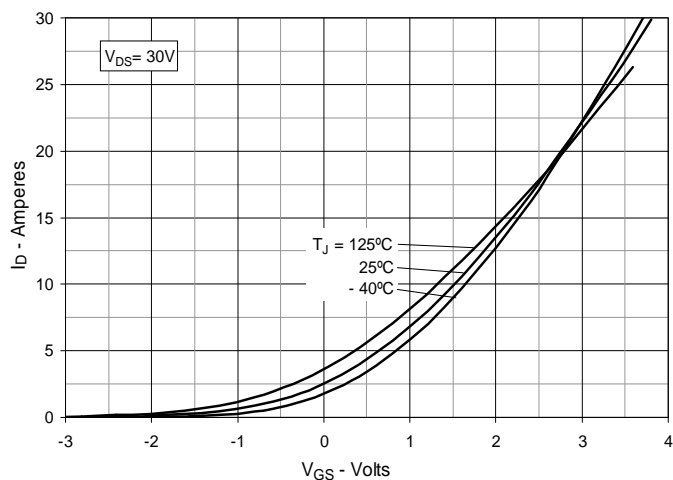


Fig. 8. Transconductance

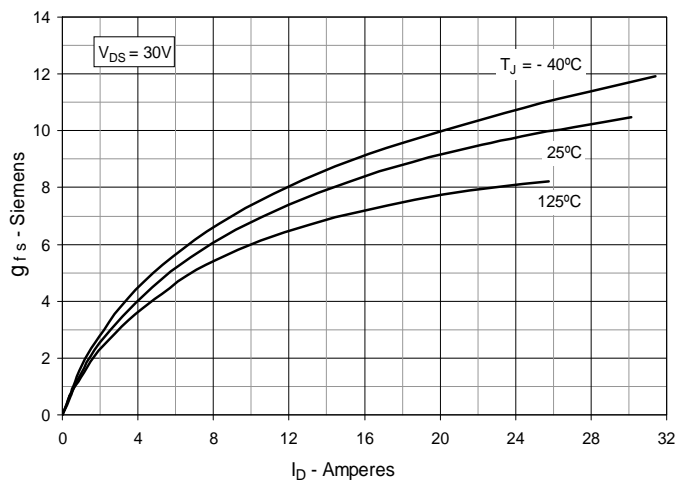


Fig. 9. Forward Voltage Drop of Intrinsic Diode

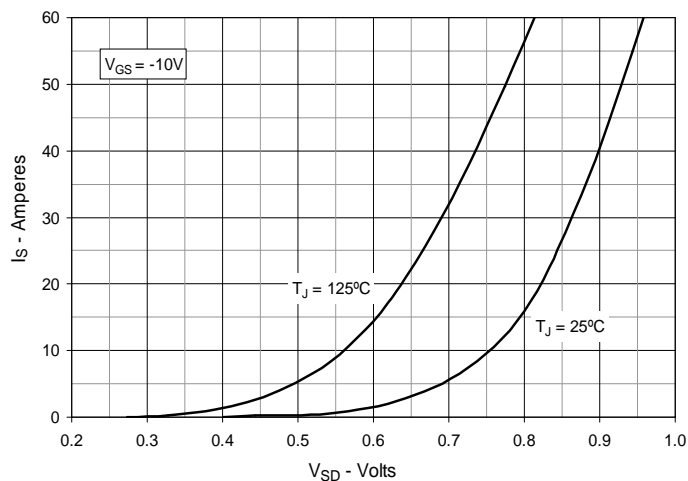


Fig. 10. Breakdown and Threshold Voltages vs. Junction Temperature

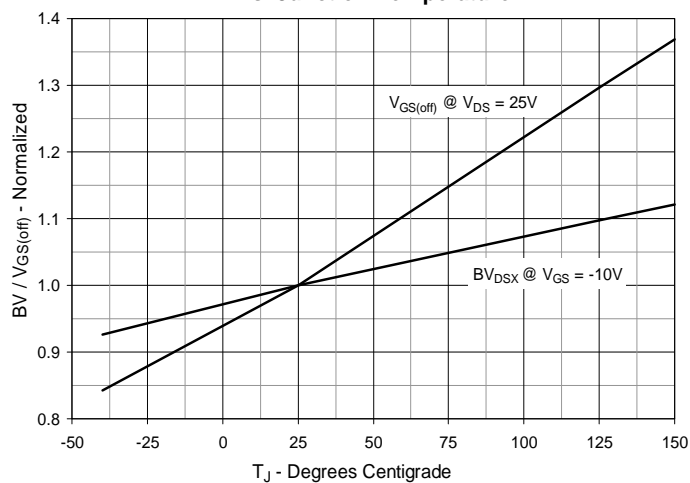


Fig. 11. Gate Charge

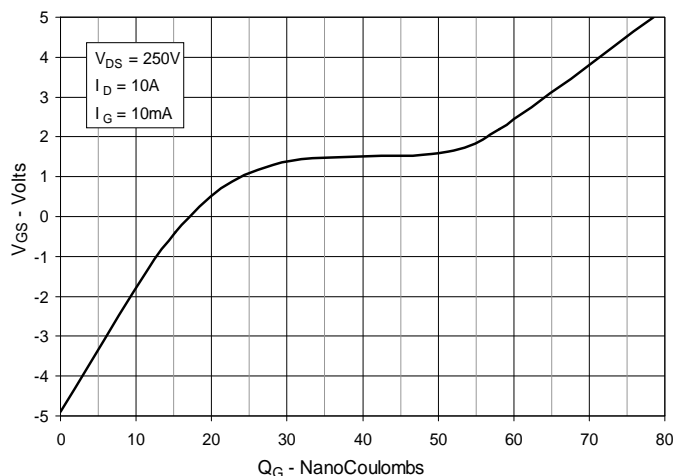


Fig. 12. Capacitance

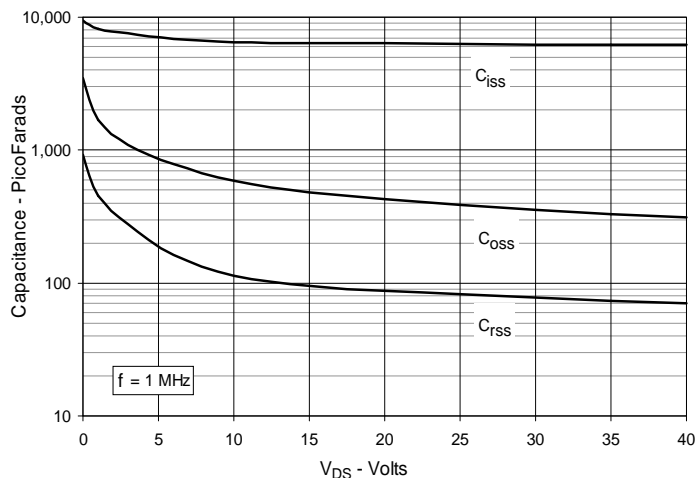


Fig. 13. Forward-Bias Safe Operating Area
@ $T_C = 25^\circ\text{C}$

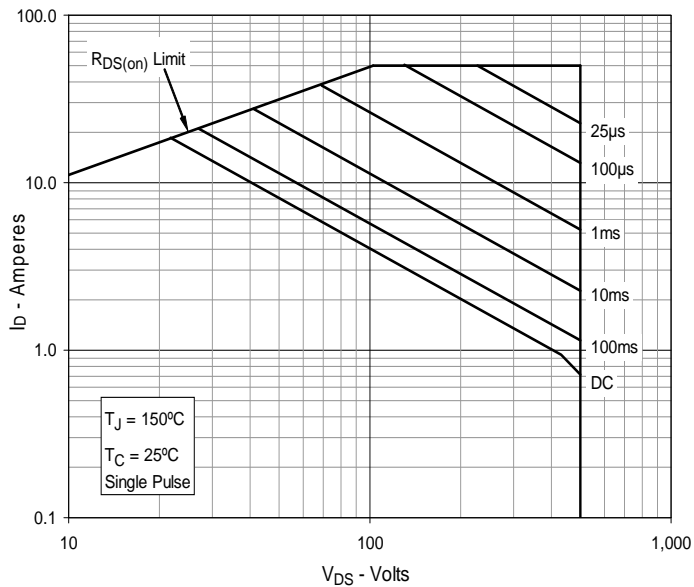


Fig. 14. Forward-Bias Safe Operating Area
@ $T_C = 75^\circ\text{C}$

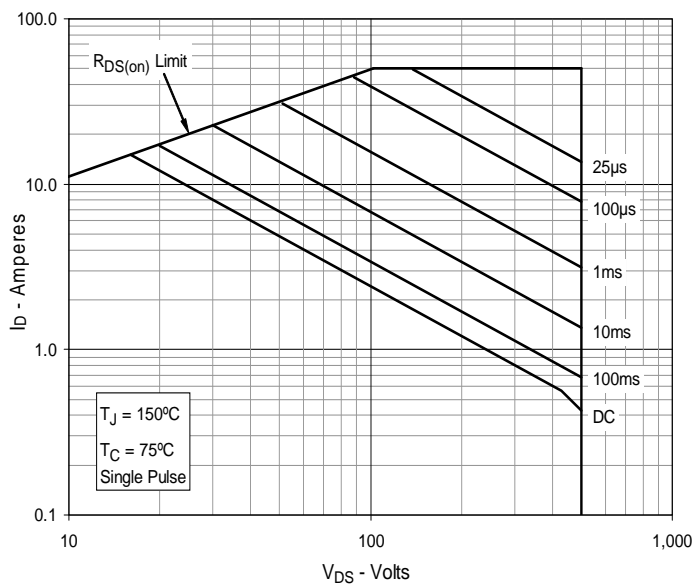
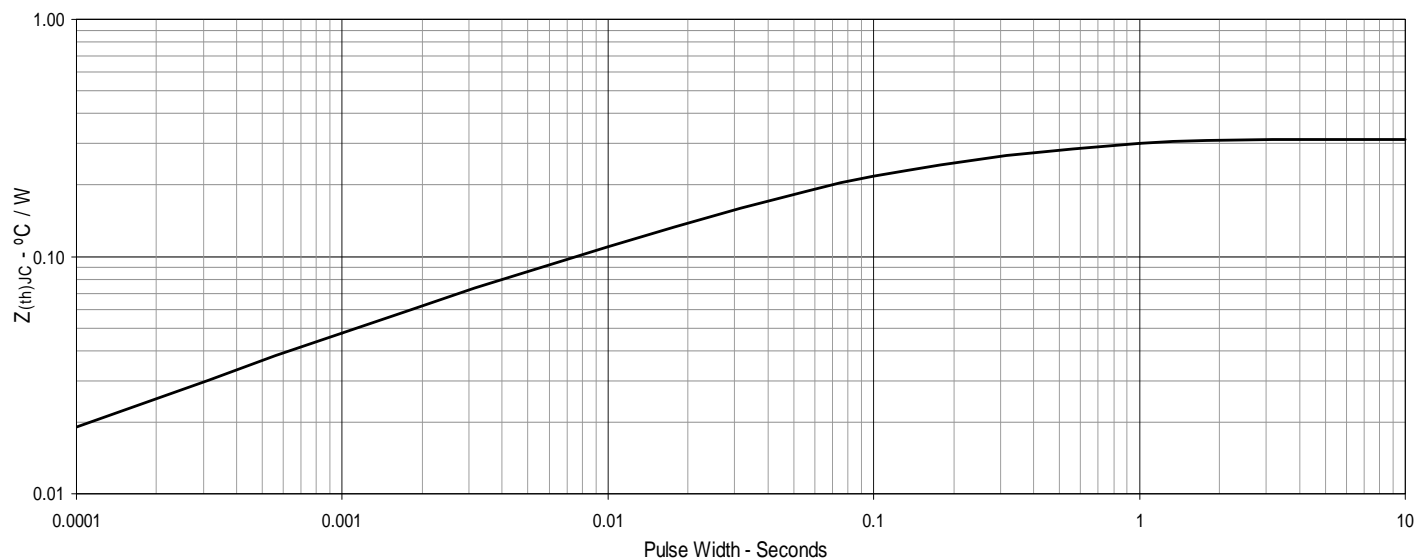


Fig. 15. Maximum Transient Thermal Impedance



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