

High Voltage MOSFET

IXTA 1N100 IXTP 1N100 $V_{DSS} = 1000 V$ $I_{D25} = 1.5 A$ $R_{DS(on)} = 11 \Omega$

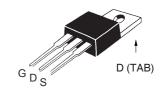
N-Channel Enhancement Mode Avalanche Energy Rated



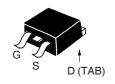
Symbol	Test Conditions	Maximum	Ratings
V _{DSS}	T _J = 25°C to 150°C	1000	V
V_{DGR}	$T_{_{\rm J}}$ = 25°C to 150°C; $R_{_{\rm GS}}$ = 1 M Ω	1000	V
$\overline{V_{GS}}$	Continuous	±30	V
$V_{\rm GSM}$	Transient	±40	V
I _{D25}	T _C = 25°C	1.5	Α
I _{DM}	$\rm T_{_{\rm C}}$ = 25°C, pulse width limited by $\rm T_{_{\rm JM}}$	6	Α
I _{AR}		1.5	А
E _{AR}	T _c = 25°C	6	mJ
E _{AS}	$T_{c} = 25^{\circ}C$	200	mJ
dv/dt	$\begin{split} &I_{_{S}} &\leq I_{_{DM}}, di/dt \leq 100 A/\mu s, V_{_{DD}} \leq V_{_{DSS}}, \\ &T_{_{J}} \leq 150^{\circ}\text{C}, R_{_{G}} = 18 \Omega \end{split}$	3	V/ns
$\overline{\mathbf{P}_{\mathrm{D}}}$	T _c = 25°C	54	W
T _J		-55 + 150	°C
T_{JM}		150	°C
T_{stg}		-55 + 150	°C
M _d	Mounting torque	1.13/10	Nm/lb.in.
Weight		4	g
	ead temperature for soldering 062 in.) from case for 10 s	300	°C

Symbol	Test Conditions $(T_{_{\rm J}}=25^{\circ}{\rm C},~{\rm t}$		 ristic Va se speci max.	
V _{DSS}	$V_{GS} = 0 \text{ V}, I_{D} = 250 \mu\text{A}$	1000		V
$V_{\rm GS(th)}$	$V_{DS} = V_{GS}, I_D = 25 \mu\text{A}$	2.5	4.5	V
I _{GSS}	$V_{GS} = \pm 30 V_{DC}, V_{DS} = 0$		±100	nA
I _{DSS}	$V_{DS} = V_{DSS}$ $T_J = 25^{\circ}C$ $V_{GS} = 0 V$ $T_J = 125^{\circ}C$		25 500	μA μA
R _{DS(on)}	V_{GS} = 10 V, I_{D} = 1.0A Pulse test, t \leq 300 μ s, duty cycle d \leq 2 %		11	Ω

TO-220AB (IXTP)



TO-263 AA (IXTA)



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

Features

- International standard packages
- High voltage, Low $R_{DS (on)}$ HDMOSTM process
- Rugged polysilicon gate cell structure
- Fast switching times

Applications

- Switch-mode and resonant-mode power supplies
- · Flyback inverters
- DC choppers
- · High frequency matching

Advantages

- Space savings
- · High power density



Symbol	Test Conditions $(T_1 = 25^{\circ}C,$			istic Values se specified)
		min.	typ.	max.
g _{fs}	$V_{DS} = 20 \text{ V}; I_{D} = 1.0 \text{A}, \text{ pulse test}$	0.8	1.5	S
C _{iss}			400	pF
C _{oss}	$V_{GS} = 0 \text{ V}, V_{DS} = 25 \text{ V}, f = 1 \text{ MHz}$		37	pF
C _{rss})		13	pF
t _{d(on)}			18	ns
t _r	$V_{GS} = 10 \text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_{D} = 1A$		19	ns
$\mathbf{t}_{d(off)}$	$R_{G} = 18\Omega$, (External)		20	ns
t,	J		18	ns
$\mathbf{Q}_{\mathrm{g(on)}}$			14.5	nC
\mathbf{Q}_{gs}	$V_{GS} = 10 \text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_{D} = 1 \text{ A}$		3.0	nC
\mathbf{Q}_{gd}			7.5	nC
R _{thJC}				2.3 K/W
\mathbf{R}_{thCK}	(IXTP)		0.50	K/W

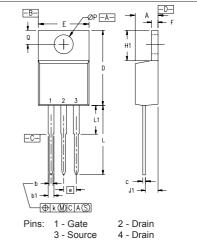
Source-Drain Diode

Characteristic Values

(T₁ = 25°C, unless otherwise specified)

Symbol	Test Conditions m	in.	typ.	max.	
I _s	V _{GS} = 0 V			1.5	Α
I _{sm}	Repetitive; pulse width limited by $\mathrm{T}_{_{\mathrm{JM}}}$			6	Α
V _{SD}	$I_F = I_{S^1} V_{GS} = 0 V$, Pulse test, $t \le 300 \ \mu s$, duty cycle $d \le 2 \ \%$			1.8	V
t _{rr}	$I_F = I_S$, -di/dt = 100 A/ μ s, $V_R = 100 \text{ V}$		710		ns

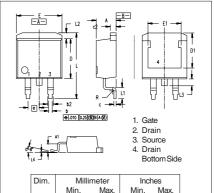
TO-220 AD Dimensions



Bottom Side

MY2	INCH	HES MILLIMET		METERS
21M	MIN	MAX	MIN	MAX
Α	.170	.190	4.32	4.83
b	.025	.040	0.64	1.02
b1	.045	.065	1.15	1.65
С	.014	.022	0.35	0.56
D	.580	.630	14.73	16.00
E	.390	.420	9.91	10.66
е	.100 BSC		2.54 BSC	
F	.045	.055	1.14	1.40
H1	.230	.270	5.85	6.85
J1	.090	.110	2.29	2.79
k	0	.015	0	0.38
L	.500	.550	12.70	13.97
L1	.110	.230	2.79	5.84
ØΡ	.139	.161	3.53	4.08
Q	.100	.125	2.54	3.18

TO-263 AA Outline



Dim.	Millimeter Inches		nes	
	Min.	Max.	Min.	Max.
Α	4.06	4.83	.160	.190
A1	2.03	2.79	.080	.110
b	0.51	0.99	.020	.039
b2	1.14	1.40	.045	.055
С	0.46	0.74	.018	.029
c2	1.14	1.40	.045	.055
D	8.64	9.65	.340	.380
D1	7.11	8.13	.280	.320
Е	9.65	10.29	.380	.405
E1	6.86	8.13	.270	.320
е	2.54	BSC	.100	BSC
L	14.61	15.88	.575	.625
L1	2.29	2.79	.090	.110
L2	1.02	1.40	.040	.055
L3	1.27	1.78	.050	.070
L4	0	0.38	0	.015
R	0.46	0.74	.018	.029



Fig. 1. Output Characteristics

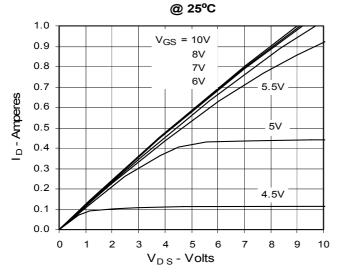


Fig. 3. Output Characteristics @ 125°C

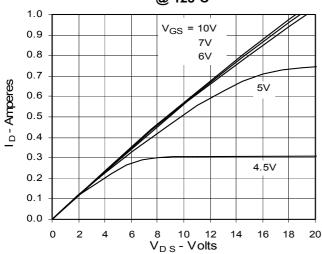


Fig. 5. Normalized R_{DS(on)} vs. I_D

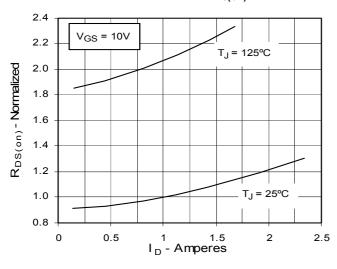


Fig. 2. Extended Output Characteristics @ 25°C

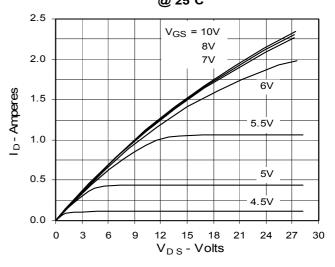


Fig. 4. Normalized $R_{DS(on)}$ vs. Junction Temperature

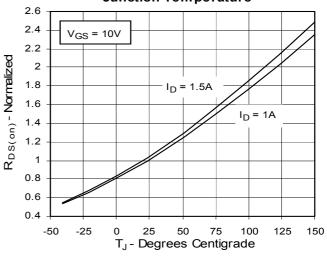


Fig. 6. Drain Current vs. Case

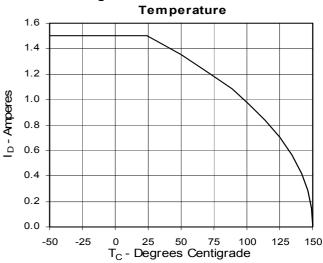


Fig. 7. Input Admittance

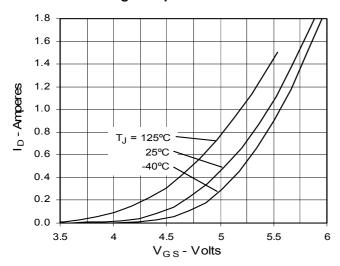


Fig. 9. Source Current vs. Source-To-Drain Voltage

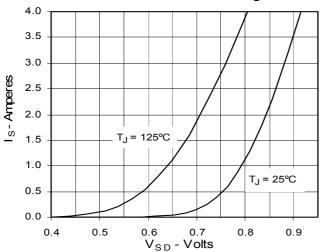


Fig. 11. Capacitance

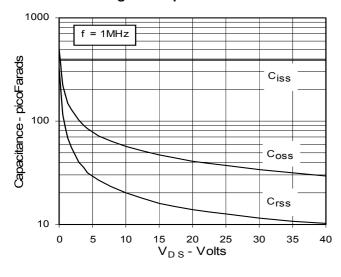


Fig. 8. Transconductance

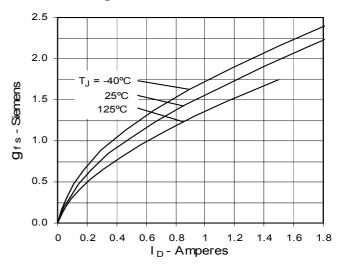


Fig. 10. Gate Charge

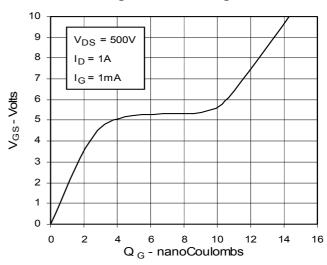


Fig. 13. Maximum Transient Thermal Resistance

