



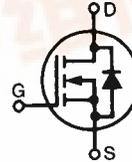
Advance Technical Information

High Voltage MOSFET

IXTH 1N100
IXTT 1N100

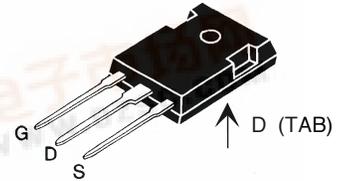
$V_{DSS} = 1000\text{ V}$
 $I_{D25} = 1.5\text{ A}$
 $R_{DS(on)} = 11\ \Omega$

N-Channel Enhancement Mode
Avalanche Energy Rated

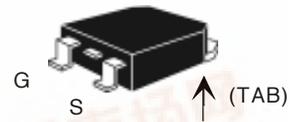


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	1000	V
V_{DGR}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GS} = 1\text{ M}\Omega$	1000	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	1.5	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}	6	A
I_{AR}		1.5	A
E_{AR}	$T_C = 25^\circ\text{C}$	6	mJ
E_{AS}	$T_C = 25^\circ\text{C}$	200	mJ
dv/dt	$I_S \leq I_{DM}$, di/dt $\leq 100\text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ\text{C}$, $R_G = 18\ \Omega$	3	V/ns
P_D	$T_C = 25^\circ\text{C}$	60	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 (TO-247)	1.13/10	Nm/lb.in.
Weight	TO-268	4	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-268 Case Style



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

Features

- International standard packages
- High voltage, Low $R_{DS(on)}$ HDMOS™ 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

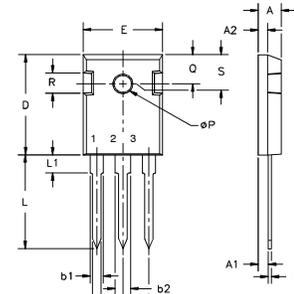
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
V_{DSS}	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	1000		V
$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 25\ \mu\text{A}$	2.5		4.5 V
I_{GSS}	$V_{GS} = \pm 20\text{ V}_{DC}, V_{DS} = 0$			$\pm 100\text{ nA}$
I_{DSS}	$V_{DS} = V_{DSS}, V_{GS} = 0\text{ V}$	$T_J = 25^\circ\text{C}$		25 μA
		$T_J = 125^\circ\text{C}$		500 μA
$R_{DS(on)}$	$V_{GS} = 10\text{ V}, I_D = 1.0\text{A}$ Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$			11 Ω



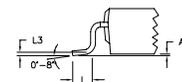
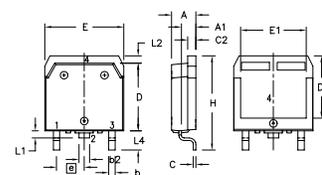
Symbol	Test Conditions	Characteristic Values		
		(T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
g_{fs}	V _{DS} = 20 V; I _D = 1.0A, pulse test	0.8	1.5	S
C_{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		480	pF
C_{oss}			45	pF
C_{rss}			15	pF
t_{d(on)}	V _{GS} = 10 V, V _{DS} = 0.5 • V _{DSS} , I _D = 1A R _G = 18Ω, (External)		18	ns
t_r			19	ns
t_{d(off)}			20	ns
t_f			18	ns
Q_{g(on)}	V _{GS} = 10 V, V _{DS} = 0.5 • V _{DSS} , I _D = 1A		23	nC
Q_{gs}			4.5	nC
Q_{gd}			14	nC
R_{thJC}	TO-247			2.3 K/W
R_{thCK}			0.25	K/W

Symbol	Test Conditions	Characteristic Values		
		(T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
I_S	V _{GS} = 0 V			1.5 A
I_{SM}	Repetitive; pulse width limited by T _{JM}			6 A
V_{SD}	I _F = I _S , V _{GS} = 0 V, Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 %			1.8 V
t_{rr}	I _F = I _S , -di/dt = 100 A/μs, V _R = 100 V		710	ns

TO-247 AD Outline


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

Dim.	Millimeter		Inches	
	Min.	Max.	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
ÆP	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-268 Outline


Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.9	5.1	.193	.201
A ₁	2.7	2.9	.106	.114
A ₂	.02	.25	.001	.010
b	1.15	1.45	.045	.057
b ₁	1.9	2.1	.75	.83
b ₂	.4	.65	.016	.026
D	13.80	14.00	.543	.551
E	15.85	16.05	.624	.632
E ₁	13.3	13.6	.524	.535
e	5.45 BSC		.215 BSC	
H	18.70	19.10	.736	.752
L	2.40	2.70	.094	.106
L1	1.20	1.40	.047	.055
L2	1.00	1.15	.039	.045
L3	0.25 BSC		.010 BSC	
L4	3.80	4.10	.150	.161