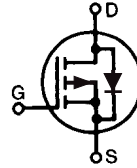


Standard Power MOSFET

P-Channel Enhancement Mode
Avalanche Rated

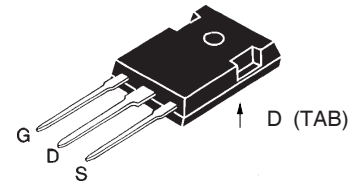
IXTH 8P50
IXTT 8P50

$$\begin{aligned} V_{DSS} &= -500 \text{ V} \\ I_{D25} &= -8 \text{ A} \\ R_{DS(on)} &= 1.2 \Omega \end{aligned}$$

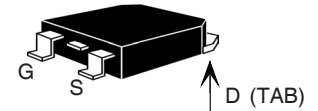


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	-500	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1 \text{ M}\Omega$	-500	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	-8	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_J	-32	A
I_{AR}	$T_C = 25^\circ\text{C}$	-8	A
E_{AR}	$T_C = 25^\circ\text{C}$	30	mJ
P_D	$T_C = 25^\circ\text{C}$	180	W
T_J		-55 ... +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		-55 ... +150	$^\circ\text{C}$
	Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s	300	$^\circ\text{C}$
	Plastic Body for 10s	250	$^\circ\text{C}$
M_d	Mounting torque (TO-247)	1.13/10	Nm/lb.in.
Weight	TO-247	6	g
	TO-268	5	g

TO-247 (IXTH)



TO-268 (IXTT)



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

Features

- International standard packages
- Low $R_{DS(on)}$ HDMOS™ process
- Rugged polysilicon gate cell structure
- Unclamped Inductive Switching (UIS) rated
- Low package inductance (<5 nH)
- easy to drive and to protect

Applications

- High side switching
- Push-pull amplifiers
- DC choppers
- Automatic test equipment

Advantages

- Easy to mount with 1 screw
(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}	$V_{GS} = 0 \text{ V}$, $I_D = -250 \mu\text{A}$ BV_{DSS} Temperature Coefficient	-500	0.054	V %/K
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -250 \mu\text{A}$ $V_{GS(th)}$ Temperature Coefficient	-3.0	-0.122	V %/K
I_{GSS}	$V_{GS} = \pm 20 \text{ V}_{DC}$, $V_{DS} = 0$			± 100 nA
I_{DSS}	$V_{DS} = 0.8 \cdot V_{DSS}$, $T_J = 25^\circ\text{C}$ $V_{GS} = 0 \text{ V}$, $T_J = 125^\circ\text{C}$			-200 μA -1 mA
$R_{DS(on)}$	$V_{GS} = -10 \text{ V}$, $I_D = 0.5 \cdot I_{D25}$			1.5 Ω 1.2 Ω
	$R_{DS(on)}$ Temperature Coefficient			0.6 %/K

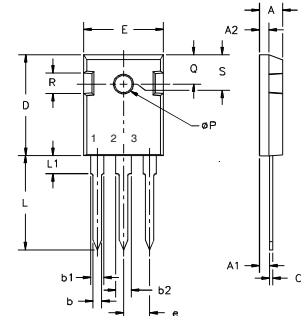
Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
g_{fs}	$V_{DS} = -10\text{ V}$; $I_D = I_{D25}$, pulse test	4	5	S
C_{iss}	$V_{GS} = 0\text{ V}$, $V_{DS} = -25\text{ V}$, $f = 1\text{ MHz}$		3400	pF
C_{oss}			450	pF
C_{rss}			175	pF
$t_{d(on)}$	$V_{GS} = -10\text{ V}$, $V_{DS} = 0.5 V_{DSS}$, $I_D = 0.5 I_{D25}$ $R_G = 4.7\ \Omega$ (External)		33	ns
t_r			27	ns
$t_{d(off)}$			35	ns
t_f			35	ns
$Q_{g(on)}$	$V_{GS} = -10\text{ V}$, $V_{DS} = 0.5 V_{DSS}$, $I_D = 0.5 I_{D25}$		130	nC
Q_{gs}			32	nC
Q_{gd}			64	nC
R_{thJC}			0.7	K/W
R_{thCS}	(TO-247)	0.25		K/W

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
I_S	$V_{GS} = 0$			-8 A
I_{SM}	Repetitive; pulse width limited by T_{JM}			-32 A
V_{SD}	$I_F = I_S$, $V_{GS} = 0\text{ V}$, Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$			-3 V
t_{rr}	$I_F = I_S$, $di/dt = 100\text{ A}/\mu\text{s}$		400	ns

IXYS reserves the right to change limits, test conditions, and dimensions.

IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents:	4,835,592	4,931,844	5,049,961	5,237,481	6,162,665	6,404,065 B1
	4,850,072	5,017,508	5,063,307	5,381,025	6,259,123 B1	6,534,343
	4,881,106	5,034,796	5,187,117	5,486,715	6,306,728 B1	6,583,505

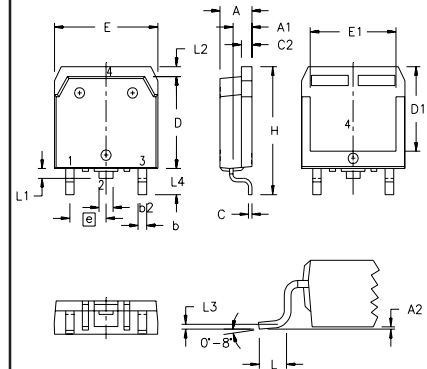
TO-247 (IXTH) Outline



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
∅P	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 (IXTT) Outline



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	54.3	55.1	13.80	14.00
D1	48.8	50.0	12.40	12.70
E	62.4	63.2	15.85	16.05
E1	52.4	53.5	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

6,683,344	6,727,585
6,710,405 B2	6,759,692
6,710,463	6,771,478 B2