

Standard Power MOSFET

P-Channel Enhancement Mode Avalanche Rated

IXTH/IXTT 10P50 IXTH/IXTT 11P50

V _{DSS}	I _{D25}	R _{DS(on)}
-500 V	-10 A	0.90 Ω
-500 V	-11 A	0.75 Ω



Symbol	Test Conditions	Maximum Ratings		
V _{DSS}	T __ = 25°C to 150°C	-500	V	
V _{DGR}	$T_J = 25$ °C to 150°C; $R_{GS} = 1 \text{ M}\Omega$	-500	V	
$\overline{V_{gs}}$	Continuous	±20	V	
$V_{\rm GSM}$	Transient	±30	V	
I _{D25}	$T_{c} = 25^{\circ}C$	10P50 -10 11P50 -11	A A	
I _{DM}	$T_{\rm c}$ = 25°C, pulse width limited by $T_{\rm J}$	10P50 -40 11P50 -44	A A	
I _{AR}	$T_{\rm c}$ = 25°C	10P50 -10 11P50 -11	A A	
E _{AR}	T _C = 25°C	30	mJ	
$\overline{\mathbf{P}_{\scriptscriptstyle D}}$	T _C = 25°C	300	W	
T,		-55 +150	°C	
T _{JM}		150	°C	
T _{stg}		-55 +150	°C	
T _L	Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s	300	°C	
M _d	Mounting torque (TO-247)	1.13/10	Nm/lb.in.	
Weight	TO-247 AD TO-268	6 4	9 9	

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A	TO-268 (IXTT)	Case Style
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Ν	G = Gate	D = Drain
<u>N</u>	S = Source	TAB = Drair
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Symbol **Test Conditions Characteristic Values** (T₁ = 25°C, unless otherwise specified) min. typ. max. $V_{_{\rm GS}}$ = 0 V, $I_{_{D}}$ = -250 μA $BV_{_{DSS}}$ Temperature Coefficient -500 $\mathbf{V}_{\mathtt{DSS}}$ 0.054 %/K $\mathbf{V}_{\mathrm{GS(th)}}$ $\begin{array}{l} V_{_{DS}} = V_{_{GS}}, \ I_{_{D}} = -250 \ \mu A \\ V_{_{GS(th)}} Temperature Coefficient \end{array}$ ٧ -3.0 -5.0 -0.122 %/K $V_{GS} = \pm 20 V_{DC}, V_{DS} = 0$ ±100 nΑ I_{GSS} $V_{DS} = 0.8 \cdot V_{DSS}$ $V_{GS} = 0 V$ T₁ = 25°C -200 I_{DSS} μΑ T_J = 125°C -1 mΑ $V_{GS} = -10 \text{ V}, I_{D} = 0.5 \cdot I_{D25}$ $\boldsymbol{R}_{\text{DS(on)}}$ 10P50 0.90 Ω 11P50 0.75 Ω $R_{\scriptscriptstyle DS(on)}$ Temperature Coefficient 0.6 %/K

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

Advantages

- Easy to mount
- Space savings
- High power density

94535F (7/02)

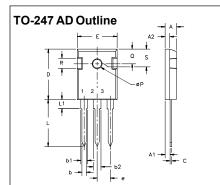


Symbol	$(T_J = 25^{\circ}C, unless)$	naracteristic Values sotherwise specified)		
	min.	typ.	max.	
g _{fs}	$V_{DS} = -10 \text{ V}; I_{D} = I_{D25}, \text{ pulse test}$ 5	9	s	
C _{iss})	4700	pF	
C _{oss}	$V_{GS} = 0 \text{ V}, V_{DS} = -25 \text{ V}, f = 1 \text{ MHz}$	430	pF	
\mathbf{C}_{rss}	J	135	pF	
t _{d(on)})	33	ns	
t,	$V_{GS} = -10 \text{ V}, V_{DS} = 0.5 V_{DSS}, I_{D} = 0.5 I_{D25}$	27	ns	
$\mathbf{t}_{d(off)}$	$R_{\rm G} = 4.7 \Omega $ (External)	35	ns	
t _f	J	35	ns	
Q _{g(on)})	160	nC	
\mathbf{Q}_{gs}	$V_{GS} = -10 \text{ V}, V_{DS} = 0.5 V_{DSS}, I_{D} = 0.5 I_{D25}$	46	nC	
\mathbf{Q}_{gd}	J	92	nC	
R _{thJC}			0.42 K/W	
R _{thCS}	(TO-247)	0.25	K/W	

Source-Drain Diode

Characteristic Values (T₁ = 25°C, unless otherwise specified)

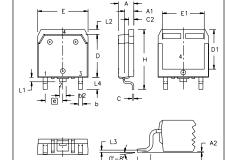
Symbol	Test Conditions	min.	typ.	max.	
Is	V _{GS} = 0	10P50 11P50		-10 -11	A A
I _{SM}	Repetitive; pulse width limited by $T_{_{\rm JM}}$	10P50 11P50		-40 -44	A A
V _{SD}	$I_F = I_S$, $V_{GS} = 0$ V, Pulse test, t ≤ 300 μs, duty cycle d ≤ 2	%		-3	V
t _{rr}	$I_F = I_S$, di/dt = 100 A/ μ s		500		ns



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

Dim.	Millimeter		Inc	hes
	Min.	Max.	Min.	Max.
Α	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
С	.4	.8	.016	.031
D	20.80	21.46	.819	.845
Е	15.75	16.26	.610	.640
е	5.20	5.72	0.205	0.225
L	19.81	20.32	.780	.800
L1		4.50		.177
ØP	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



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

MY2	INCHES		MILLIMETERS		
3111	MIN	MAX	MIN	MAX	
Α	.193	.201	4.90	5.10	
A1	.106	.114	2.70	2.90	
A2	.001	.010	0.02	0.25	
Ь	.045	.057	1.15	1.45	
b2	.075	.083	1.90	2.10	
С	.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	
е	.215 BSC		5.45 BSC		
Н	.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	.010 BSC 0.25 BSC		BSC	
L4	.150	.161	3.80	4.10	