



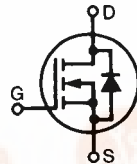
# HiPerFET™ Power MOSFETs

**IXFH 26N60/IXFT 26N60  
IXFK 28N60**

N-Channel Enhancement Mode  
Avalanche Rated, High dv/dt, Low  $t_{rr}$

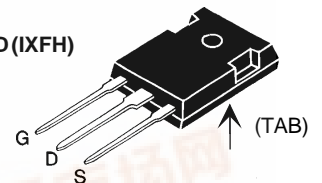
$V_{DSS}$	$I_{D25}$	$R_{DS(on)}$
600 V	26 A	0.25 $\Omega$
600 V	28 A	0.25 $\Omega$
$t_{rr} \leq 250$ ns		

Preliminary data

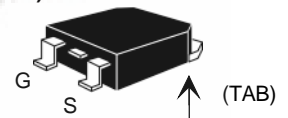


Symbol	Test Conditions	Maximum Ratings		
		IXFH/ IXFT	IXFK	
$V_{DSS}$	$T_J = 25^\circ\text{C}$ to $150^\circ\text{C}$	600	600	V
$V_{DGR}$	$T_J = 25^\circ\text{C}$ to $150^\circ\text{C}$ ; $R_{GS} = 1$ M $\Omega$	600	600	V
$V_{GS}$	Continuous	$\pm 20$	$\pm 20$	V
$V_{GSM}$	Transient	$\pm 30$	$\pm 30$	V
$I_{D25}$	$T_C = 25^\circ\text{C}$ , Chip capability	26	28	A
$I_{DM}$	$T_C = 25^\circ\text{C}$ , pulse width limited by $T_{JM}$	104	112	A
$I_{AR}$	$T_C = 25^\circ\text{C}$	26	28	A
$E_{AR}$	$T_C = 25^\circ\text{C}$	50	50	mJ
$E_{AS}$	$T_C = 25^\circ\text{C}$	1.5	1.5	J
dv/dt	$I_S \leq I_{DM}$ , $di/dt \leq 100$ A/ $\mu\text{s}$ , $V_{DD} \leq V_{DSS}$ , $T_J \leq 150^\circ\text{C}$ , $R_G = 2$ $\Omega$	5	5	V/ns
$P_D$	$T_C = 25^\circ\text{C}$	360	416	W
$T_J$		-55 ... +150		$^\circ\text{C}$
$T_{JM}$			150	$^\circ\text{C}$
$T_{stg}$		-55 ... +150		$^\circ\text{C}$
$T_L$	1.6 mm (0.063 in) from case for 10 s	300	300	$^\circ\text{C}$
$M_d$	Mounting torque	1.13/10	0.9/6	Nm/lb.in.
Weight		6	10	g

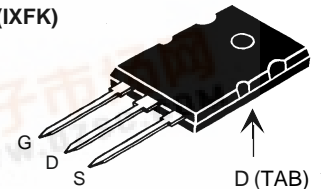
TO-247 AD (IXFH)



TO-268 (D3) (IXFT)



TO-264 AA (IXFK)



G = Gate  
S = Source      TAB = Drain  
Either Source terminal at miniBLOC can be used as Main or Kelvin Source

### Features

- International standard packages
- Epoxy meet UL94 V-0, flammability classification
- Low  $R_{DS(on)}$  HDMOS™ process
- Rugged polysilicon gate cell structure
- Avalanche energy and current rated
- Fast intrinsic Rectifier

### Advantages

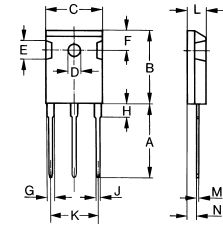
- Easy to mount
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$V_{DSS}$	$V_{GS} = 0$ V, $I_D = 250$ $\mu\text{A}$	600		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$ , $I_D = 4$ mA	2		4.5 V
$I_{GSS}$	$V_{GS} = \pm 20$ V $_{DC}$ , $V_{DS} = 0$			$\pm 200$ nA
$I_{DSS}$	$V_{DS} = 0.8 \cdot V_{DSS}$ , $T_J = 25^\circ\text{C}$ $V_{GS} = 0$ V, $T_J = 125^\circ\text{C}$			25 $\mu\text{A}$ 1 mA
$R_{DS(on)}$	$V_{GS} = 10$ V, $I_D = 0.5 \cdot I_{D25}$ Pulse test, $t \leq 300$ $\mu\text{s}$ , duty cycle $d \leq 2\%$			0.25 $\Omega$



Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$g_{fs}$	$V_{DS} = 10\text{ V}; I_D = 0.5 \cdot I_{D25}$ , pulse test	11	18	S
$C_{iss}$	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$		5000	pF
$C_{oss}$			600	pF
$C_{rss}$			250	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$ $R_G = 1.5\ \Omega$ (External),		30	ns
$t_r$			43	ns
$t_{d(off)}$			110	ns
$t_f$			30	ns
$Q_{g(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$		250	nC
$Q_{gs}$			33	nC
$Q_{gd}$			115	nC
$R_{thJC}$	26N60 28N60		0.35 0.30	K/W K/W
$R_{thCK}$	TO-247 TO-264		0.25 0.15	K/W K/W

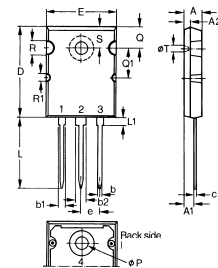
### TO-247 AD (IXFH) Outline



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)			
		min.	typ.	max.	
$I_S$	$V_{GS} = 0\text{ V}$	26N60 28N60		26 28	A A
$I_{SM}$	Repetitive; pulse width limited by $T_{JM}$	26N60 28N60		104 112	A A
$V_{SD}$	$I_F = I_S, V_{GS} = 0\text{ V}$ , Pulse test, $t \leq 300\ \mu\text{s}$ , duty cycle $d \leq 2\%$			1.5	V
$t_{rr}$	$I_F = I_S - di/dt = 100\text{ A}/\mu\text{s}, V_R = 100\text{ V}$			250	ns
$Q_{RM}$			1		$\mu\text{C}$
$I_{RM}$			10		A

### TO-264 AA (IXFK) Outline



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.82	5.13	.190	.202
A1	2.54	2.89	.100	.114
A2	2.00	2.10	.079	.083
b	1.12	1.42	.044	.056
b1	2.39	2.69	.094	.106
b2	2.90	3.09	.114	.122
c	0.53	0.83	.021	.033
D	25.91	26.16	1.020	1.030
E	19.81	19.96	.780	.786
e	5.46 BSC		.215 BSC	
J	0.00	0.25	.000	.010
K	0.00	0.25	.000	.010
L	20.32	20.83	.800	.820
L1	2.29	2.59	.090	.102
P	3.17	3.66	.125	.144
Q	6.07	6.27	.239	.247
Q1	8.38	8.69	.330	.342
R	3.81	4.32	.150	.170
R1	1.78	2.29	.070	.090
S	6.04	6.30	.238	.248
T	1.57	1.83	.062	.072

TO-268AA (D <sup>3</sup> PAK)		Dim.	Millimeter		Inches	
			Min.	Max.	Min.	Max.
	A	4.9	5.1	.193	.201	
	A <sub>1</sub>	2.7	2.9	.106	.114	
	A <sub>2</sub>	.02	.25	.001	.010	
	b	1.15	1.45	.045	.057	
	b <sub>2</sub>	1.9	2.1	.75	.83	
	C	.4	.65	.016	.026	
	D	13.80	14.00	.543	.551	
	E	15.85	16.05	.624	.632	
	E <sub>1</sub>	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	
	L <sub>1</sub>	1.20	1.40	.047	.055	
	L <sub>2</sub>	1.00	1.15	.039	.045	
	L <sub>3</sub>	0.25 BSC		.010 BSC		
	L <sub>4</sub>	3.80	4.10	.150	.161	

### Min. Recommended Footprint

