



HiPerFET™ Power MOSFETs Q-Class

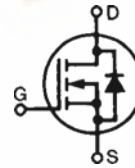
IXFH 15N100Q
IXFK 15N100Q
IXFT 15N100Q

$V_{DSS} = 1000 \text{ V}$
 $I_{D25} = 15 \text{ A}$
 $R_{DS(on)} = 0.7 \Omega$
 $t_{rr} \leq 250 \text{ ns}$

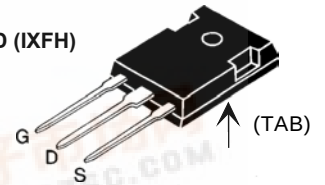
N-Channel Enhancement Mode
Avalanche Rated, Low Q_g , High dv/dt

Preliminary data sheet

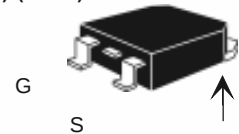
Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	1000	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1 \text{ M}\Omega$	1000	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	15	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}	60	A
I_{AR}	$T_C = 25^\circ\text{C}$	15	A
E_{AR}	$T_C = 25^\circ\text{C}$	45	mJ
E_{AS}	$T_C = 25^\circ\text{C}$	1.5	J
dv/dt	$I_S \leq I_{DM}$, $di/dt \leq 100 \text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ\text{C}$, $R_G = 2 \Omega$	5	V/ns
P_D	$T_C = 25^\circ\text{C}$	360	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	$^\circ\text{C}$
M_d	Mounting torque	TO-247	1.13/10 Nm/lb.in.
		TO-264	0.9/6 Nm/lb.in.
Weight		TO-247	6 g
		TO-268	4 g
		TO-264	10 g



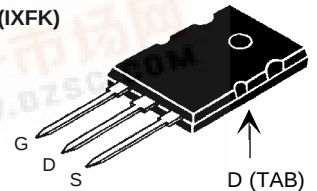
TO-247 AD (IXFH)



TO-268 (D3) (IXFT)



TO-264 AA (IXFK)



G = Gate
S = Source

TAB = Drain

Features

- IXYS advanced low Q_g process
- International standard packages
- Epoxy meet UL 94 V-0, flammability classification
- Low $R_{DS(on)}$ low Q_g
- 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}	$V_{GS} = 0 \text{ V}$, $I_D = 250 \mu\text{A}$	1000		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 4 \text{ mA}$	3.0		5.0 V
I_{GSS}	$V_{GS} = \pm 20 V_{DC}$, $V_{DS} = 0$			$\pm 200 \text{ nA}$
I_{DSS}	$V_{DS} = V_{DSS}$, $T_J = 25^\circ\text{C}$			50 μA
	$V_{GS} = 0 \text{ V}$, $T_J = 125^\circ\text{C}$			2 mA
	$V_{GS} = 10 \text{ V}$, $I_D = 0.5 \cdot I_{D25}$ Pulse test, $t \leq 300 \mu\text{s}$, duty cycle $d \leq 2 \%$			0.7 Ω





IXFH 15N100Q IXFK 15N100Q IXFT 15N100Q

Symbol	Test Conditions	Characteristic Values (T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
g_{fs}	V _{DS} = 10 V; I _D = 0.5 • I _{D25} , pulse test	7	12	S
C_{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		4500	pF
C_{oss}			410	pF
C_{rss}			150	pF
t_{d(on)}	V _{GS} = 10 V, V _{DS} = 0.5 • V _{DSS} , I _D = 0.5 • I _{D25} R _G = 2.0 Ω (External),		28	ns
t_r			27	ns
t_{d(off)}			67	ns
t_f			14	ns
Q_{g(on)}	V _{GS} = 10 V, V _{DS} = 0.5 • V _{DSS} , I _D = 0.5 • I _{D25}		130	nC
Q_{gs}			31	nC
Q_{gd}			67	nC
R_{thJC}			0.35	K/W
R_{thCK}	TO-247	0.25		K/W
	TO-264	0.15		K/W

Source-Drain Diode

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

Symbol	Test Conditions	min.	typ.	max.
I_S	V _{GS} = 0 V			15 A
I_{SM}	Repetitive; pulse width limited by T _{JM}			60 A
V_{SD}	I _F = I _S , V _{GS} = 0 V, Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 %			1.5 V
t_{rr}	I _F = I _S - di/dt = 100 A/μs, V _R = 100 V		1	250 ns
Q_{RM}				μC
I_{RM}				A

TO-268 Outline

