



HiPerFET™ Power MOSFETs

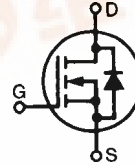
IXFA 3N80
IXFP 3N80

$V_{DSS} = 800\text{ V}$
 $I_{D25} = 3.6\text{ A}$
 $R_{DS(on)} = 3.6\ \Omega$

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

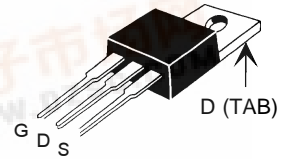
$t_{rr} \leq 250\text{ ns}$

Preliminary data sheet

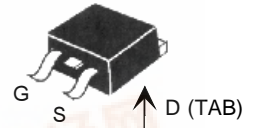


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	800	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1\text{ M}\Omega$	800	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	3.6	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}	14.4	A
I_{AR}	$T_C = 25^\circ\text{C}$	3.6	A
E_{AR}	$T_C = 25^\circ\text{C}$	10	mJ
E_{AS}		400	mJ
dv/dt	$I_S \leq I_{DM}$, $di/dt \leq 100\text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ\text{C}$, $R_G = 2\ \Omega$	5	V/ns
P_D	$T_C = 25^\circ\text{C}$	100	W
T_J		-55 to +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		-55 to +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-220)	1.13/10	Nm/lb.in.
Weight	TO-220	4	g
	TO-263	2	g

TO-220 (IXFP)



TO-263 (IXFA)



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

Features

- International standard packages
- Low $R_{DS(on)}$
- Rated for unclamped Inductive load Switching (UIS)

Advantages

- Easy to mount
- Space savings
- High power density

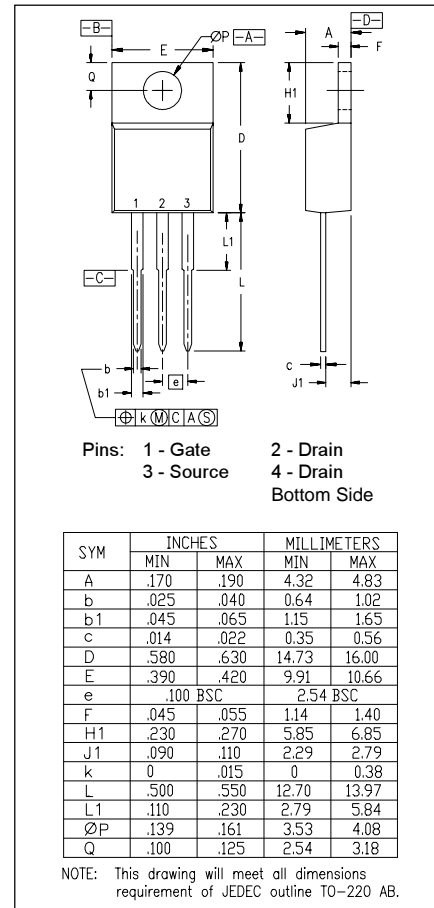
Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
V_{DSS}	$V_{GS} = 0\text{ V}$, $I_D = 1\text{ mA}$	800		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 1\text{ mA}$	2.5		4.5 V
I_{GSS}	$V_{GS} = \pm 20\text{ V}_{DC}$, $V_{DS} = 0$			$\pm 100\text{ nA}$
I_{DSS}	$V_{DS} = V_{DSS}$, $V_{GS} = 0\text{ V}$	$T_J = 25^\circ\text{C}$		50 μA
		$T_J = 125^\circ\text{C}$		1 mA
$R_{DS(on)}$	$V_{GS} = 10\text{ V}$, $I_D = 0.5 I_{D25}$ Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$			3.6 Ω



Symbol	Test Conditions	Characteristic Values			
		(T _J = 25°C, unless otherwise specified)			
		min.	typ.	max.	
g_{fs}	V _{DS} = 20 V; I _D = 0.5 • I _{D25} , pulse test	2.5	3.4	S	
C_{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		685	pF	
C_{oss}			73	pF	
C_{rss}			16	pF	
t_{d(on)}	V _{GS} = 10 V, V _{DS} = 0.5 • V _{DSS} , I _D = 0.5 • I _{D25} R _G = 12 Ω (External),		12	ns	
t_r			11	ns	
t_{d(off)}			25	ns	
t_f			14	ns	
Q_{g(on)}	V _{GS} = 10 V, V _{DS} = 0.5 • V _{DSS} , I _D = 0.5 • I _{D25}		24	nC	
Q_{gs}			6	nC	
Q_{gd}			9	nC	
R_{thJC}	(TO-220)			1.25	KW
R_{thCK}			0.25		KW

Symbol	Test Conditions	Characteristic Values			
		(T _J = 25°C, unless otherwise specified)			
		min.	typ.	max.	
I_S	V _{GS} = 0 V			3.6	A
I_{SM}	Repetitive; pulse width limited by T _{JM}			14.4	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			250	ns
Q_{RM}			0.52		μC
I_{RM}			1.8		A

TO-220 (IXFP) Outline



TO-263 (IXFA) Outline

