

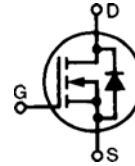
# High Voltage MOSFET

**IXTA 2N80**  
**IXTP 2N80**

$V_{DSS} = 800 \text{ V}$   
 $I_{D25} = 2 \text{ A}$   
 $R_{DS(on)} = 6.2 \text{ } \Omega$

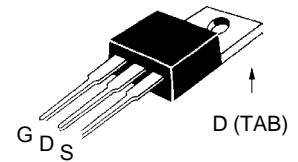
N-Channel Enhancement Mode  
Avalanche Energy Rated

Preliminary Data

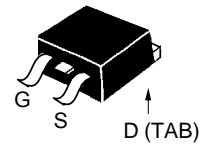


Symbol	Test Conditions	Maximum Ratings	
$V_{DSS}$	$T_J = 25^\circ\text{C}$ to $150^\circ\text{C}$	800	V
$V_{DGR}$	$T_J = 25^\circ\text{C}$ to $150^\circ\text{C}$ ; $R_{GS} = 1 \text{ M}\Omega$	800	V
$V_{GS}$	Continuous	$\pm 20$	V
$V_{GSM}$	Transient	$\pm 30$	V
$I_{D25}$	$T_C = 25^\circ\text{C}$	2	A
$I_{DM}$	$T_C = 25^\circ\text{C}$ , pulse width limited by $T_{JM}$	8	A
$I_{AR}$		2	A
$E_{AR}$	$T_C = 25^\circ\text{C}$	6	mJ
$E_{AS}$	$T_C = 25^\circ\text{C}$	200	mJ
dv/dt	$I_S \leq I_{DM}$ , $di/dt \leq 100 \text{ A}/\mu\text{s}$ , $V_{DD} \leq V_{DSS}$ , $T_J \leq 150^\circ\text{C}$ , $R_G = 18 \text{ } \Omega$	5	V/ns
$P_D$	$T_C = 25^\circ\text{C}$	54	W
$T_J$		-55 ... +150	$^\circ\text{C}$
$T_{JM}$		150	$^\circ\text{C}$
$T_{stg}$		-55 ... +150	$^\circ\text{C}$
$M_d$	Mounting torque	1.13/10	Nm/lb.in.
<b>Weight</b>		4	g
Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s		300	$^\circ\text{C}$

## TO-220AB (IXTP)



## TO-263 AA (IXTA)



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

## Features

- International standard packages
- Low  $R_{DS(on)}$  HDMOS™ process
- Rugged polysilicon gate cell structure
- Low package inductance (< 5 nH)  
- easy to drive and to protect
- Fast switching times

## Applications

- Switch-mode and resonant-mode power supplies
- Flyback inverters
- DC choppers

## Advantages

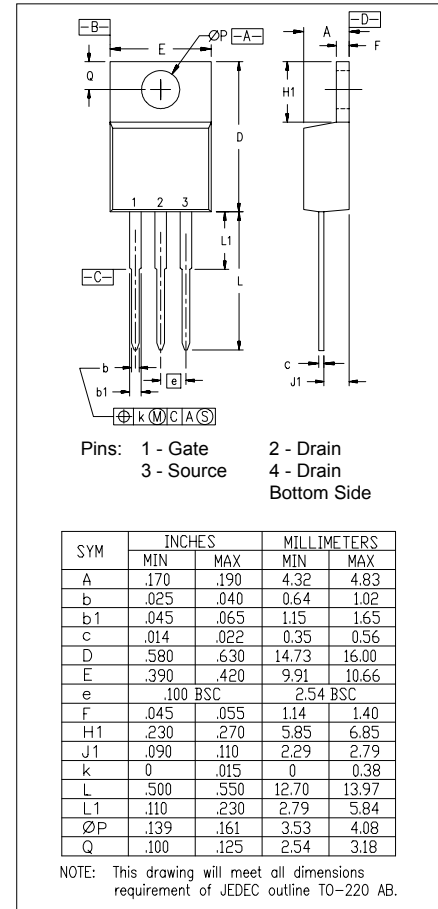
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$V_{DSS}$	$V_{GS} = 0 \text{ V}$ , $I_D = 250 \text{ } \mu\text{A}$	800		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$ , $I_D = 250 \text{ } \mu\text{A}$	2.5		5.5 V
$I_{GSS}$	$V_{GS} = \pm 20 \text{ V}_{DC}$ , $V_{DS} = 0$			$\pm 100 \text{ nA}$
$I_{DSS}$	$V_{DS} = V_{DSS}$ , $V_{GS} = 0 \text{ V}$ , $T_J = 125^\circ\text{C}$			25 $\mu\text{A}$ 500 $\mu\text{A}$
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$ , $I_D = 0.5 I_{D25}$ Pulse test, $t \leq 300 \text{ } \mu\text{s}$ , duty cycle $d \leq 2 \%$			6.2 $\Omega$

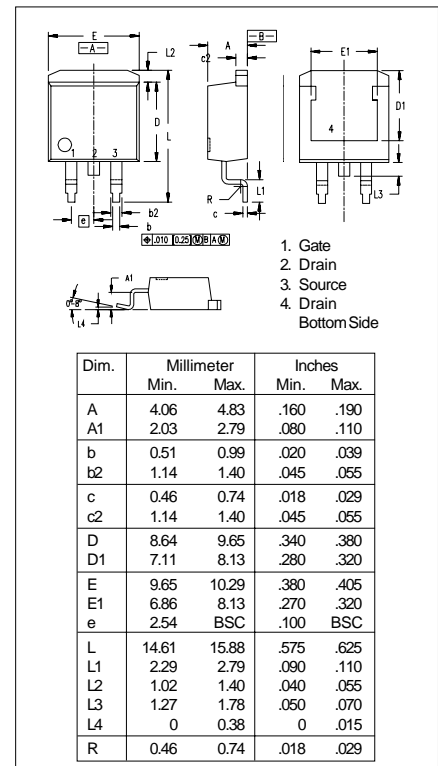
Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$g_{fs}$	$V_{DS} = 20\text{ V}; I_D = 0.5 \cdot I_{D25}$ , pulse test	1.0	2.0	S
$C_{iss}$	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$		440	pF
$C_{oss}$			56	pF
$C_{rss}$			15	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 I_{D25}$ $R_G = 18\Omega$ , (External)		15	ns
$t_r$			18	ns
$t_{d(off)}$			30	ns
$t_f$			15	ns
$Q_{g(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 I_{D25}$		22	nC
$Q_{gs}$			5.5	nC
$Q_{gd}$			12	nC
$R_{thJC}$			2.3	K/W
$R_{thCK}$	(IXTP)	0.5		K/W

Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$I_s$	$V_{GS} = 0\text{ V}$			2 A
$I_{SM}$	Repetitive; pulse width limited by $T_{JM}$			8 A
$V_{SD}$	$I_F = I_s, V_{GS} = 0\text{ V}$ , Pulse test, $t \leq 300\ \mu\text{s}$ , duty cycle $d \leq 2\%$			1.8 V
$t_{rr}$	$I_F = I_s, -di/dt = 100\text{ A}/\mu\text{s}, V_R = 100\text{ V}$		510	ns

### TO-220 AD Dimensions



### TO-263 AA Outline



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