

High Voltage MOSFET

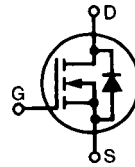
IXTA 2N80 IXTP 2N80

$$V_{DSS} = 800 \text{ V}$$

$$I_{D25} = 2 \text{ A}$$

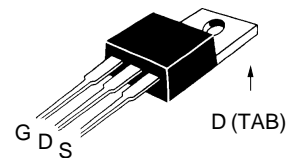
$$R_{DS(on)} = 6.2 \text{ } \Omega$$

N-Channel Enhancement Mode
Avalanche Energy Rated

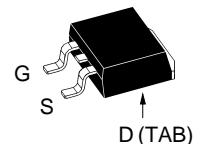


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	800	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1 \text{ M}\Omega$	800	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	2	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited 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.
Weight		4	g
Maximum lead temperature for soldering		300	$^\circ\text{C}$

TO-220AB (IXTP)



TO-263 AA (IXTA)



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

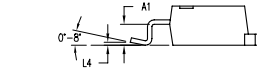
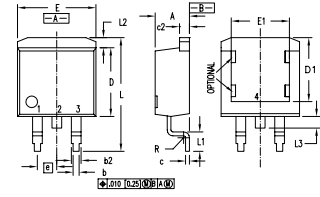
- Space savings
- High power density

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 μA 500 μA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$, $I_D = 0.5 I_{D25}$ Pulse test, $t \leq 300 \text{ } \mu\text{s}$, duty cycle $d \leq 2 \%$			6.2 Ω

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

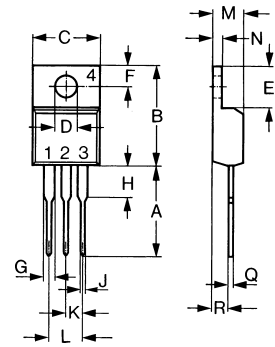
Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
I_S	$V_{GS} = 0\text{ V}$			2 A
I_{SM}	Repetitive; pulse width limited by T_{JM}			8 A
V_{SD}	$I_F = I_S, V_{GS} = 0\text{ V}$, Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$			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-263 AA (IXTA) Outline



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.06	4.83	.160	.190
A1	2.03	2.79	.080	.110
b	0.51	0.99	.020	.039
b2	1.14	1.40	.045	.055
c	0.46	0.74	.018	.029
c2	1.14	1.40	.045	.055
D	8.64	9.65	.340	.380
D1	7.11	8.13	.280	.320
E	9.65	10.29	.380	.405
E1	6.86	8.13	.270	.320
e	2.54	BSC	.100	BSC
L	14.61	15.88	.575	.625
L1	2.29	2.79	.090	.110
L2	1.02	1.40	.040	.055
L3	1.27	1.78	.050	.070
L4	0	0.38	0	.015
R	0.46	0.74	.018	.029

TO-220 AB (IXTP) Outline



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.70	13.97	0.500	0.550
B	14.73	16.00	0.580	0.630
C	9.91	10.66	0.390	0.420
D	3.54	4.08	0.139	0.161
E	5.85	6.85	0.230	0.270
F	2.54	3.18	0.100	0.125
G	1.15	1.65	0.045	0.065
H	2.79	5.84	0.110	0.230
J	0.64	1.01	0.025	0.040
K	2.54	BSC	0.100	BSC
M	4.32	4.82	0.170	0.190
N	1.14	1.39	0.045	0.055
Q	0.35	0.56	0.014	0.022
R	2.29	2.79	0.090	0.110