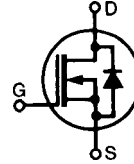


High Voltage MOSFET

IXTP 02N50D

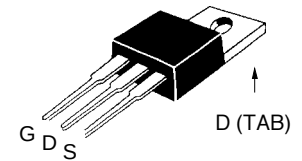
N-Channel, Depletion Mode

$$\begin{aligned} V_{DSS} &= 500 \text{ V} \\ I_{D25} &= 200 \text{ mA} \\ R_{DS(on)} &= 30 \text{ } \Omega \end{aligned}$$



Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	500	V
V_{DGR}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GS} = 1 \text{ M}\Omega$	500	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}; T_J = 25^\circ\text{C to } 150^\circ\text{C}$	200	mA
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_J	800	mA
P_D	$T_C = 25^\circ\text{C}$	25	W
	$T_A = 25^\circ\text{C}$	1.1	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	$^\circ\text{C}$
Weight		1	g

TO-220AD (IXTP)



Features

- Normally ON mode
- Low $R_{DS(on)}$ HDMOS™ process
- Rugged polysilicon gate cell structure
- Fast switching speed

Applications

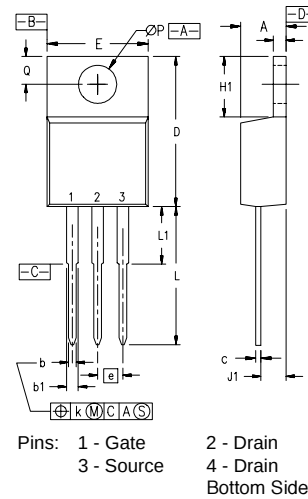
- Level shifting
- Triggers
- Solid state relays
- Current regulators

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
V_{DSS}	$V_{GS} = -10 \text{ V}, I_D = 25 \text{ } \mu\text{A}$	500		V
$V_{GS(off)}$	$V_{DS} = 25 \text{ V}, I_D = 25 \text{ } \mu\text{A}$	-2.5		-5 V
I_{GSS}	$V_{GS} = \pm 20 \text{ V}_{DC}, V_{DS} = 0$			$\pm 100 \text{ nA}$
$I_{DSS(off)}$	$V_{DS} = V_{DSS}, V_{GS} = -10 \text{ V}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$		10 μA
				250 μA
$R_{DS(on)}$	$V_{GS} = 0 \text{ V}, I_D = 50 \text{ mA}$ Note 1		20	30 Ω
$I_{D(on)}$	$V_{GS} = 0 \text{ V}, V_{DS} = 25 \text{ V}$ Note 1		250	mA

Symbol	Test Conditions		Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
			min.	typ.	max.
g_{fs}	$V_{DS} = 50\text{ V}; I_D = I_{D25}$	Note1	100	150	mS
C_{iss}	$V_{GS} = -10\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$			120	pF
C_{oss}				25	pF
C_{rss}				5	pF
$t_{d(on)}$	$V_{gs} = 0\text{ V, to } -10\text{ V}, I_D = 50\text{ mA}$ $V_{ds} = 100\text{ V}$ $R_G = 30\Omega, (\text{External})$			9	ns
t_r				4	ns
$t_{d(off)}$				28	ns
t_f				45	ns
R_{thJC}					3 K/W

Source-Drain Diode		Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
Symbol	Test Conditions	min.	typ.	max.
V_{SD}	$V_{GS} = -10\text{ V}, I_F = I_{D25}$	Note1	0.7	1.5 V
t_{rr}	$I_F = 0.75\text{ A}, -di/dt = 10\text{ A}/\mu\text{s},$ $V_{DS} = 25\text{ V}, V_{GS} = -10\text{ V}$			1.0 μs

Note1: Pulse test, $t \leq 300\text{ }\mu\text{s}$, duty cycle $d \leq 2\%$

TO-220 AD Dimensions


SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.170	.190	4.32	4.83
b	.025	.040	0.64	1.02
b1	.045	.065	1.15	1.65
c	.014	.022	0.35	0.56
D	.580	.630	14.73	16.00
E	.390	.420	9.91	10.66
e	.100 BSC		2.54 BSC	
F	.045	.055	1.14	1.40
H1	.230	.270	5.85	6.85
J1	.090	.110	2.29	2.79
k	0	.015	0	0.38
L	.500	.550	12.70	13.97
L1	.110	.230	2.79	5.84
ØP	.139	.161	3.53	4.08
Q	.100	.125	2.54	3.18