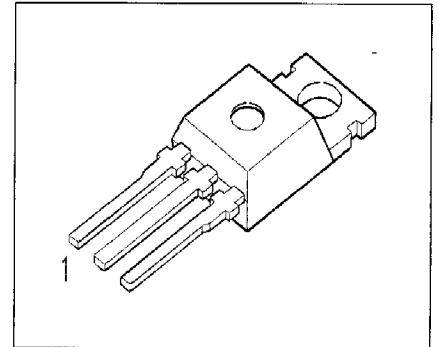


BUZ 50 B

- N channel
- Enhancement mode

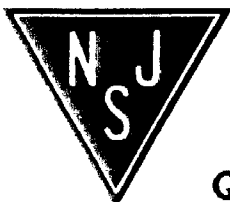


Pin 1	Pin 2	Pin 3
G	D	S

Type	V_{DS}	I_D	$R_{DS(on)}$	Package
BUZ 50 B	1000 V	2 A	8 Ω	TO-220 AB

Maximum Ratings

Parameter	Symbol	Values	Unit
Drain source voltage	V_{DS}	1000	V
Drain-gate voltage $R_{GS} = 20 \text{ k}\Omega$	V_{DGR}	1000	
Continuous drain current $T_C = 25 \text{ }^\circ\text{C}$	I_D	2	A
Pulsed drain current $T_C = 25 \text{ }^\circ\text{C}$	I_{Dpuls}	8	
Gate source voltage	V_{GS}	± 20	V
Power dissipation $T_C = 25 \text{ }^\circ\text{C}$	P_{tot}	78	W
Operating temperature	T_j	-55+ 150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55+ 150	
Thermal resistance, chip case	R_{thJC}	≤ 1.6	K/W
Thermal resistance, chip to ambient	R_{thJA}	75	
DIN humidity category, DIN 40 040		C	
IEC climatic category, DIN IEC 68-1		55 / 150 / 56	



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BUZ 50 B

Electrical Characteristics, at $T_j = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Static Characteristics					
Drain- source breakdown voltage $V_{GS} = 0\text{ V}$, $I_D = 0.25\text{ mA}$, $T_j = 25^\circ\text{C}$	$V_{(BR)DSS}$	1000	-	-	V
Gate threshold voltage $V_{GS} = V_{DS}$, $I_D = 1\text{ mA}$	$V_{GS(th)}$	2.1	3	4	
Zero gate voltage drain current $V_{DS} = 1000\text{ V}$, $V_{GS} = 0\text{ V}$, $T_j = 25^\circ\text{C}$ $V_{DS} = 1000\text{ V}$, $V_{GS} = 0\text{ V}$, $T_j = 125^\circ\text{C}$	I_{DSS}	-	20 100	250 1000	μA
Gate-source leakage current $V_{GS} = 20\text{ V}$, $V_{DS} = 0\text{ V}$	I_{GSS}	-	10	100	nA
Drain-Source on-resistance $V_{GS} = 10\text{ V}$, $I_D = 1.5\text{ A}$	$R_{DS(on)}$	-	6.5	8	Ω

BUZ 50 B

Electrical Characteristics, at $T_j = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Dynamic Characteristics					
Transconductance $V_{DS} \geq 2 \cdot I_D \cdot R_{DS(on)max}$, $I_D = 1.5 \text{ A}$	g_{fs}	0.7	1.5	-	S
Input capacitance $V_{GS} = 0 \text{ V}$, $V_{DS} = 25 \text{ V}$, $f = 1 \text{ MHz}$	C_{iss}	-	1600	2100	pF
Output capacitance $V_{GS} = 0 \text{ V}$, $V_{DS} = 25 \text{ V}$, $f = 1 \text{ MHz}$	C_{oss}	-	70	120	
Reverse transfer capacitance $V_{GS} = 0 \text{ V}$, $V_{DS} = 25 \text{ V}$, $f = 1 \text{ MHz}$	C_{rss}	-	30	55	
Turn-on delay time $V_{DD} = 30 \text{ V}$, $V_{GS} = 10 \text{ V}$, $I_D = 2 \text{ A}$ $R_{GS} = 50 \Omega$	$t_{d(on)}$	-	30	45	ns
Rise time $V_{DD} = 30 \text{ V}$, $V_{GS} = 10 \text{ V}$, $I_D = 2 \text{ A}$ $R_{GS} = 50 \Omega$	t_r	-	40	60	
Turn-off delay time $V_{DD} = 30 \text{ V}$, $V_{GS} = 10 \text{ V}$, $I_D = 2 \text{ A}$ $R_{GS} = 50 \Omega$	$t_{d(off)}$	-	110	140	
Fall time $V_{DD} = 30 \text{ V}$, $V_{GS} = 10 \text{ V}$, $I_D = 2 \text{ A}$ $R_{GS} = 50 \Omega$	t_f	-	60	80	

BUZ 50 B**Electrical Characteristics, at $T_j = 25^\circ\text{C}$, unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Reverse Diode					
Inverse diode continuous forward current $T_C = 25^\circ\text{C}$	I_S	-	-	2	A
Inverse diode direct current, pulsed $T_C = 25^\circ\text{C}$	I_{SM}	-	-	8	
Inverse diode forward voltage $V_{GS} = 0\text{ V}, I_F = 6\text{ A}$	V_{SD}	-	1.05	1.3	V
Reverse recovery time $V_R = 100\text{ V}, I_F = I_S, di_F/dt = 100\text{ A}/\mu\text{s}$	t_{rr}	-	2	-	μs
Reverse recovery charge $V_R = 100\text{ V}, I_F = I_S, di_F/dt = 100\text{ A}/\mu\text{s}$	Q_{rr}	-	15	-	μC