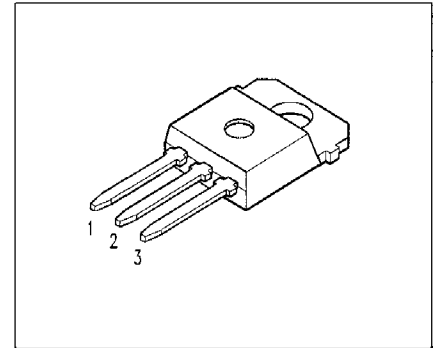


BUZ 355

- N channel
- Enhancement mode
- Avalanche-rated



Pin 1	Pin 2	Pin 3
G	D	S

Type	V_{DS}	I_D	$R_{DS(on)}$	Package
BUZ 355	800 V	6 A	1.5 Ω	TO-218 AA

Maximum Ratings

Parameter	Symbol	Values	Unit
Continuous drain current $T_C = 29^\circ\text{C}$	I_D	6	A
Pulsed drain current $T_C = 25^\circ\text{C}$	I_{Dpuls}	24	
Avalanche current, limited by T_{jmax}	I_{AR}	5.1	
Avalanche energy, periodic limited by T_{jmax}	E_{AR}	15	mJ
Avalanche energy, single pulse $I_D = 6\text{ A}$, $V_{DD} = 50\text{ V}$, $R_{GS} = 25\ \Omega$ $L = 37.5\text{ mH}$, $T_j = 25^\circ\text{C}$	E_{AS}	720	
Gate source voltage	V_{GS}	± 20	V
Power dissipation $T_C = 25^\circ\text{C}$	P_{tot}	125	W
Operating temperature	T_j	$-55 \dots + 150$	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \dots + 150$	
Thermal resistance, chip case	R_{thJC}	≤ 1	K/W
Thermal resistance, chip to ambient	R_{thJA}	75	
DIN humidity category, DIN 40 040		E	
IEC climatic category, DIN IEC 68-1		55 / 150 / 56	

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Quality Semi-Conductors

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 $V_{GS} = 0\text{ V}$, $I_D = 0.25\text{ mA}$, $T_j = 25^\circ\text{C}$	$V_{(BR)DSS}$	800	-	-	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 $V_{DS} = 800\text{ V}$, $V_{GS} = 0\text{ V}$, $T_j = 25^\circ\text{C}$ $V_{DS} = 800\text{ V}$, $V_{GS} = 0\text{ V}$, $T_j = 125^\circ\text{C}$	I_{DSS}	- -	- 10	1 100	μA
Gate-source leakage current $V_{GS} = 20\text{ V}$, $V_{DS} = 0\text{ V}$	I_{GSS}	-	10	100	
Drain-Source on-resistance $V_{GS} = 10\text{ V}$, $I_D = 3.9\text{ A}$	$R_{DS(on)}$	-	0.9	1.5	Ω

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Dynamic Characteristics					
Transconductance $V_{DS} \geq 2 \cdot I_D \cdot R_{DS(ON)max}$, $I_D = 3.9\text{ A}$	g_{fs}	2.5	6.8	-	S
Input capacitance $V_{GS} = 0\text{ V}$, $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$	C_{iss}	-	1750	2350	pF
Output capacitance $V_{GS} = 0\text{ V}$, $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$	C_{oss}	-	190	290	
Reverse transfer capacitance $V_{GS} = 0\text{ V}$, $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$	C_{rss}	-	100	150	
Turn-on delay time $V_{DD} = 30\text{ V}$, $V_{GS} = 10\text{ V}$, $I_D = 2.1\text{ A}$ $R_{GS} = 50\text{ }\Omega$	$t_{d(ON)}$	-	25	40	ns
Rise time $V_{DD} = 30\text{ V}$, $V_{GS} = 10\text{ V}$, $I_D = 2.1\text{ A}$ $R_{GS} = 50\text{ }\Omega$	t_r	-	130	200	
Turn-off delay time $V_{DD} = 30\text{ V}$, $V_{GS} = 10\text{ V}$, $I_D = 2.1\text{ A}$ $R_{GS} = 50\text{ }\Omega$	$t_{d(OFF)}$	-	400	530	
Fall time $V_{DD} = 30\text{ V}$, $V_{GS} = 10\text{ V}$, $I_D = 2.1\text{ A}$ $R_{GS} = 50\text{ }\Omega$	t_f	-	130	175	

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 $T_C = 25\text{ }^{\circ}\text{C}$	I_S	-	-	4	A
Inverse diode direct current,pulsed $T_C = 25\text{ }^{\circ}\text{C}$	I_{SM}	-	-	16	
Inverse diode forward voltage $V_{GS} = 0\text{ V}$, $I_F = 12\text{ A}$	V_{SD}	-	0.95	1.4	V
Reverse recovery time $V_R = 100\text{ V}$, $I_F=I_S$, $di_F/dt = 100\text{ A}/\mu\text{s}$	t_{rr}	-	0.3	-	μs
Reverse recovery charge $V_R = 100\text{ V}$, $I_F=I_S$, $di_F/dt = 100\text{ A}/\mu\text{s}$	Q_{rr}	-	2.5	-	μC

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