



PRODUCT SPECIFICATIONS

SEMICONDUCTOR TECHNOLOGY, INC.
 3131 S. E. JAY STREET, STUART, FL 34997
 PH: (561) 283-4500 FAX: (561) 286-8914
 Website: <http://www.semi-tech-inc.com>

TYPE: BUZ210

CASE OUTLINE: TO-204AA (TO-3)

HIGH VOLTAGE POWER MOSFET N-CHANNEL

ABSOLUTE MAXIMUM RATING:

Drain – Source Voltage	V_{DSS}	500	Vdc
Drain – Gate Voltage	V_{DGR}	500	Vdc
Drain Current – Continuous	I_D	10.5	Adc
Drain Current – Pulsed	I_{DM}	42	Adc
Gate – Source Voltage	V_{GS}	± 20	Vdc
Power Dissipation	P_D	125	Watts
Inductive Current	I_L		Adc
Operating and Storage Temperature	T_J & T_{stg}	-55 to +150	$^{\circ}C$
Lead Temperature From Case	T_L		$^{\circ}C$

ELECTRICAL CHARACTERISTICS TA @ 25 $^{\circ}C$

Parameters	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 0.25mA$	500			Vdc
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS} = V_{DS}, I_D = 1.0mA$	2.1		4.0	Vdc
Gate – Body Leakage Current	I_{GSS}	$V_{GS} = 20V, V_{DS} = 0V$			100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 500V, V_{GS} = 0V,$ $V_{DS} = 500V, V_{GS} = 0V, T_J = 125^{\circ}C$			0.25 1.0	mA mA
On State Drain Current	$I_{D(on)}$					Adc
Drain Source On-Resistance	$r_{DS(on)}$	$V_{GS} = 10V, I_D = 6.5A$			0.6	Ohms
Forward Transconductance	g_{FS}	$V_{DS} = \geq 2V = I_D = R_{DS(ON)MAX}, I_D = 6.5A$	2.7			mhos
Drain-Source On Voltage	$V_{DS(on)}$					Vdc
Drain-Source-On Voltage	$V_{DS(on)}$					Vdc
Input Capacitance	C_{iss}				4900	pF
Output Capacitance	C_{oss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1 MHz$			400	pF
Reverse Transfer Capacitance	C_{rss}				170	pF



TYPE: **BUZ210**

Drain Source Diode Characteristics		Symbol	Min	Typ	Max	Units
Forward On Voltage	$I_F = 21A, V_{GS} = 0V$	V_{SD}			1.7	Vdc
Reverse Recovery Time	$V_R = 100V, I_F = I_S$ $di_F/dt = 100A/\mu s$	t_{rr}		0.25		μs
Reverse Recovery Charge		Q_{rr}		1.2		μC
Total Gate Charge		Q_g				nC
Gate – Source Charge		Q_{gs}				nC
Gate – Drain Charge		Q_{gd}				nC

Switching Characteristics		Symbol	Min	Typ	Max	Units
Turn-On Time	$V_{DD} = 30V, I_b = 2.8A$ $V_{GS} = 10V, R_{GS} = 50\Omega$	t_{on}				
Turn-Off Time		t_{off}				
Delay Time (Turn On)		$t_{d(on)}$			75	ns
Rise Time		t_r			120	ns
Delay Time (Turn Off)		$t_{d(off)}$			430	ns
Fall Time		t_f			140	ns

Thermal Characteristics		Symbol			Units
Junction To Case		$R_{\theta JC}$	1.0		$^{\circ}C/W$
Junction To Ambient		$R_{\theta JA}$			$^{\circ}C/W$
Internal Package Inductance		Symbol	Typ	Max	Units
Internal Drain Inductance		L_d			nH
Internal Source Inductance		L_s			nH