STi

PRODUCT SPECIFICATIONS

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TYPE: **MTP3N55**

CASE OUTLINE: TO-220

HIGH VOLTAGE POWER MOSFET
N-CHANNEL

ABSOLUTE MAXIMUM RATING:

Drain – Source Voltage	V_{DSS}	550	Vdc
Drain – Gate Voltage	V_{DGR}	550	Vdc
Drain Current – Continuous	I_D	3.0	Adc
Drain Current – Pulsed	I_{DM}	10	Adc
Gate – Source Voltage	V_{GS}	±20	Vdc
Power Dissipation	P_D	75	Watts
Inductive Current	I_L		Adc
Operating and Storage Temperature	T_J & T_{stg}	-65 to +150	$^\circ$C
Lead Temperature From Case	T_L	275	$^\circ$C

ELECTRICAL CHARACTERISTICS TA @ 25°C

Parameters	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain Source Breakdown Voltage	BV_{DSS}	I_D = .25mA	550			Vdc
Gate Threshold Voltage	$V_{GS(th)}$	I_D = 1.0mA I_D = 1.0mA, T_J = 100°C	2.0 1.5		4.5 4.0	Vdc
Gate – Body Leakage Current	I_{GSS}	V_{GS} = 20V			100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 550V V_{DS} = 440V, T_J = 125°C			0.2 1.0	mA mA
On State Drain Current	$I_{D(on)}$					Adc
Drain Source On Resistance	$r_{DS(on)}$	I_D = 1.5A, V_{GS} = 10V,			2.5	Ohms
Forward Transconductance	g_{FS}	I_D = 1.5A, V_{DS} = 15V,	1.5			mhos
Drain-Source On-Voltage	$V_{DS(on)}$	I_D = 3.0A V_{GS} = 10V I_D = 1.5A, V_{GS} = 10V T_J = 100°C			9.0 7.5	Vdc Vdc
Drain Source On-Voltage	$V_{DS(on)}$					Vdc
Input Capacitance	C_{iss}				1000	pF
Output Capacitance	C_{oss}	V_{DS} = 25V, f = 1 MHz			300	pF
Reverse Transfer Capacitance	C_{rss}				80	pF

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Drain Source Diode Characteristics		Symbol	Min	Typ	Max	Units
Forward On Voltage	I_S =3.0A	V_{SD}		1.1		Vdc
Reverse Recovery Time		t_{rr}		165		ns
Forward Turn-On Time		t_{on}				ns
Total Gate Charge	V_{DS}=440V, I_D=3.0A, V_{DS}=10V	Q_g		16	18	nC
Gate – Source Charge		Q_{gs}		8.0		nC
Gate – Drain Charge		Q_{gd}		8.0		nC

Switching Characteristics		Symbol	Min	Typ	Max	Units
Turn-On Time		t_{on}				
Turn-Off Time		t_{off}				
Delay Time (Turn On)	V_{DD} = 25V, I_D = 1.5A R_{gen} = 50Ω	$t_{d(on)}$			50	ns
Rise Time		t_r			100	ns
Delay Time (Turn Off)		$t_{d(off)}$			180	ns
Fall Time		t_f			80	ns

Thermal Characteristics	Symbol		Units
Junction To Case	$R_{\theta JC}$	1.67	°C/W
Junction To Ambient	$R_{\theta JA}$	62.5	°C/W

Internal Package Inductance	Symbol	Typ	Max	Units
Internal Drain Inductance	L_d	3.5		nH
Internal Source Inductance	L_S	7.5		nH