PRODUCT SPECIFICATIONS

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TYPE: MTH15N40

CASE OUTLINE: TO-218

HIGH VOLTAGE POWER MOSFET
N-CHANNEL

ABSOLUTE MAXIMUM RATING:

Drain – Source Voltage	V_{DSS}	400	Vdc
Drain – Gate Voltage	V_{DGR}	400	Vdc
Drain Current – Continuous	I_D	15	Adc
Drain Current – Pulsed	I_{DM}	75	Adc
Gate – Source Voltage	V_{GS}	±20	Vdc
Power Dissipation	P_D	150	Watts
Inductive Current	I_L		Adc
Operating and Storage Temperature	T_J & T_{stg}	-65 to +150	°C
Lead Temperature From Case	T_L	275	°C

ELECTRICAL CHARACTERISTICS TA @ 25°C

Parameters	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain Source Breakdown Voltage	BV_{DSS}	I_D = 0.25mA V_{GS} = 0	400			Vdc
Gate Threshold Voltage	$V_{GS(th)}$	I_D = 1.0mA V_{DS} = V_{GS} I_D = 1.0mA V_{DS} = V_{GS} T_J = 100°C	2.0 1.5		4.5 4.0	Vdc
Gate – Body Leakage Current	I_{GSS}	V_{GS} = 20V V_{DS} = 0			100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 400V V_{GS} = 0 V_{DS} = 320V V_{GS} = 0 T_J = 125ºC			0.2 1.0	mA mA
On State Drain Current	$I_{D(on)}$					Adc
Drain Source On-Resistance	$r_{DS(on)}$	I_D =8.0A V_{GS} = 10V			0.3	Ohms
Forward Transconductance	g_{FS}	I_D = 8.0A V_{DS} = 10V	5.0			mhos
Drain-Source On Voltage	$V_{DS(on)}$	I_D = 15.0A V_{GS} = 10V I_D = 8.0A V_{GS} = 10V T_J = 100ºC			4.5 3.5	Vdc
Drain-Source-On Voltage	$V_{DS(on)}$					Vdc
Input Capacitance	C_{iss}	V_{DS} = 25V V_{GS} = 0 f = 1.0MHz			3000	pF
Output Capacitance	C_{oss}				500	pF
Reverse Transfer Capacitance	C_{rss}				200	pF

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Drain Source Diode Characteristics		Symbol	Min	Typ	Max	Units
Forward On Voltage	I_S = 15.0A V_{GS} = 0	V_{SD}		1.3	1.6	Vdc
Reverse Recovery Time	I_S = 15.0A	t_{rr}		1200		ns
Reverse Recovery Charge		Q_{rr}				nC
Total Gate Charge	I_D = 15.0A V_{DS} = 320V V_{GS} = 10V	Q_g		110	160	nC
Gate – Source Charge		Q_{gs}		50		nC
Gate – Drain Charge		Q_{gd}		60		nC

Switching Characteristics		Symbol	Min	Typ	Max	Units
Turn-On Time		t_{on}				
Turn-Off Time		t_{off}				
Delay Time (Turn On)	I_D = 8.0A V_{DD} = 25V R_{gen} = 50Ù	$t_{d(on)}$			60	ns
Rise Time		t_r			180	ns
Delay Time (Turn Off)		$t_{d(off)}$			450	ns
Fall Time		t_f			180	ns

Thermal Characteristics	Symbol			Units
Junction To Case	$R_{\theta JC}$	0.83		°C/W
Junction To Ambient	$R_{\theta JA}$	30		°C/W
Internal Package Inductance	**Symbol**	**Typ**	**Max**	**Units**
Internal Drain Inductance	L_d	4.0		nH
Internal Source Inductance	L_S	10.0		nH