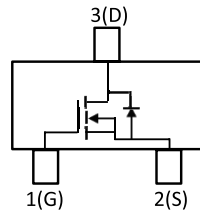


# N Channel Enhancement Mode Field Effect Transistor

**multicomp**PRO

RoHS  
Compliant

## Device Schematic & PIN Configuration



Pin Assignment		
1	G	Gate
2	S	Source
3	D	Drain

## Features

- Trench Power LV MOSFET Technology
- High Power and Current Handling Capability

## Applications

- PWM Application
- Load Switch for Devices

## Maximum Ratings @TA = +25°C

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 10$	V
Drain Current	$I_D$	2	A
Pulsed Drain Current (1)	$I_{DM}$	14	A
Power Dissipation	$P_D$	0.7	W
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C
Thermal Resistance Junction to Ambient (2)	$R_{\theta JA}$	178	°C/W

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## Electrical Characteristics @TA = +25°C

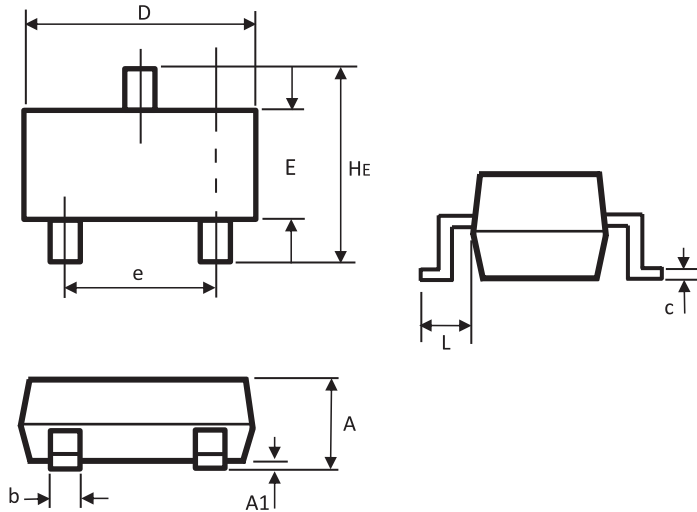
Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit		
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	$BV_{DSS}$	20	--	--	V		
Gate-Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{th(GS)}$	0.45	0.75	1.1			
Gate-Body Leakage Current	$V_{DS}=0V, V_{GS}=\pm 10V$	$I_{GSS}$	--		$\pm 100$	nA		
Zero Gate Voltage Drain Current	$V_{DS}=20V, V_{GS}=0V$	$I_{DSS}$			--	1	$\mu A$	
Body-Diode Continuous Current		$I_S$			2	A		
Static Drain-Source On-Resistance	$V_{GS}=4.5V, I_D=1A$	$R_{DS(ON)}$			85	130	m $\Omega$	
	$V_{GS}=2.5V, I_D=0.5A$				110	160		
Diode Forward Voltage	$I_S=2A, V_{GS}=0V$	$V_{SD}$			--	1.2	V	
Input Capacitance	$V_{DS}=15V, V_{GS}=0V, F=1MHz$	$C_{iss}$			21	--	--	pF
Output Capacitance		$C_{oss}$			15			
Reverse Transfer Capacitance		$C_{rss}$			8			
Total Gate Charge		$Q_g$			6.7			
Gate Source Charge	$V_{GS}=10V, V_{DS}=25V, I_D=1.6A$	$Q_{gs}$	1.2	--	--	nC		
Gate Drain Charge		$Q_{gd}$	0.9					
Turn-on Delay Time		$t_{d(ON)}$	120					
Turn-on Rise Time	$V_{GEN}=10V, V_{DD}=10V, R_L=3\Omega, R_{GEN}=10\Omega$	$t_r$	317	--	--	ns		
Turn-off Delay Time		$t_{d(OFF)}$	748					
Turn-off Fall Time		$t_f$	716					

Notes: 1.Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty cycle  $\leq 2\%$   
2.Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

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## Outline Dimensions



SOT23 Package		
Dim	Min	Max
A	0.9	1.15
A1	0	0.1
b	0.3	0.5
c	0.1	0.2
D	2.8	3
E	1.2	1.4
e	1.8	2
L	0.55 REF	
HE	2.25	2.55

Dimensions : Millimetres

## Part Number Table

Description	Part Number
N Channel Enhancement Mode FET, 20V, 2A, SOT-23	HMT02N02S

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