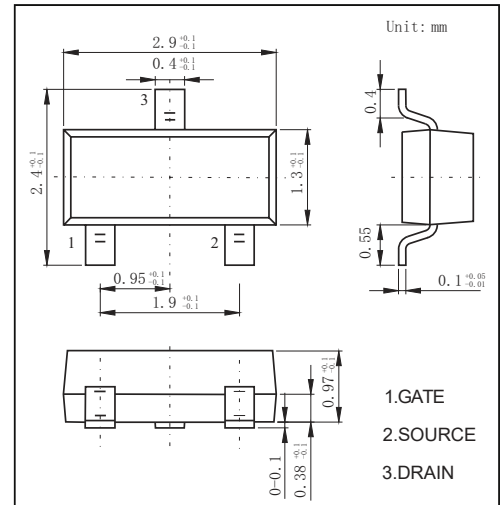


## Features

- N-Channel Enhancement Mode Field Effect Transistor
- VDS=20V,RDS(ON)=40mΩ,VGS=4.5V,ID=5.0A
- VDS=20V,RDS(ON)=60mΩ,VGS=2.5V,ID=4.0A
- VDS=20V,RDS(ON)=75mΩ,VGS=1.8V,ID=1.0A

## MECHANICAL DATA

- Case style:SOT-23molded plasti
- Mounting position:any



## MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	20	V
Gate-Source Voltage	V <sub>GS</sub>	± 10	V
Drain-Current -Continuous T <sub>j</sub> =125 °C -Pulsed	I <sub>D</sub>	3.8	A
	I <sub>DM</sub>	15	A
Power Dissipation	P <sub>D</sub>	1.25	W
Thermal Resistance, Junction-to-Ambient	R <sub>thJA</sub>	100	°C/W
Operating Junction and Storage Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	-55to-	°C

\* Surface Mounted on FR 4 Board , t ≤10 sec.

## MOSFET ELECTRICAL CHARACTERISTICS Ta=25 °C unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	20			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			1	uA
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>GS</sub> =±10V, V <sub>DS</sub> =0V			± 100	nA
Gate Threshold Voltage *	V <sub>GS(th)</sub>	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250uA	0.6	0.78	1.5	V
Drain- Source on-state Resistance *	R <sub>Ds(ON)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =5.0A		32	40	m Ω
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =4.0A		50	60	m Ω
		V <sub>GS</sub> =1.8V, I <sub>D</sub> =1.0A		62	75	m Ω
On-State Drain Current *	I <sub>D(ON)</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =4.5V	18			A
Forward Transconductance *	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =5A	5			S
Input Capacitance	C <sub>iSS</sub>	V <sub>DS</sub> = 15 V , V <sub>GS</sub> = 0V, f = 1.0MHZ		888		pF
Output Capacitance	C <sub>oSS</sub>		144		pF	
Reverse Transfer Capacitance	C <sub>rSS</sub>		115		pF	
Turn-On Delay Time	t <sub>D(on)</sub>		31.8		ns	
Rise Time	t <sub>r</sub>		14.5		ns	
Turn-Off Delay Time	t <sub>D(off)</sub>		50.3		ns	
Fall Time	t <sub>f</sub>		31.9		ns	
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 10 V , I <sub>D</sub> = 3.5 A , V <sub>GS</sub> = 4.5 V		16.8		nC
Gate-Source Charge	Q <sub>gs</sub>		2.5		nC	
Gate-Drain Charge	Q <sub>gd</sub>		5.4		nC	
Drain-Source Diode Forward Current *	I <sub>S</sub>				1.25	A
Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =1.25A		0.825	1.2	V

\* Pulse Test:Pulse Width ≤300 μ , Duty Cycle ≤2%