

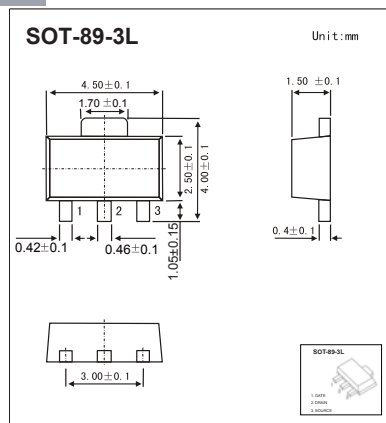
## SOT-89-3L Plastic-Encapsulate MOSFETS

### FEATURE

- N-Channel 20-V(D-S) MOSFET

### MECHANICAL DATA

- Case style:SOT-89-3L molded plastic
- Mounting position:any



### MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Continuous Gate-Source Voltage	$V_{GS}$	±12	
Continuous Drain Current	$I_D$	4	A
Power Dissipation	$P_D$	0.5	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250	°C/W
Operating Temperature	$T_j$	150	°C
Storage Temperature	$T_{stg}$	-55 ~ +150	°C

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
20V	38mΩ@10V	4A
	50mΩ@4.5V	
	80mΩ@2.5V	

### MOSFET ELECTRICAL CHARACTERISTICS $T_A=25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Off characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Gate-body leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 12V$			±100	nA
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 20V, V_{GS} = 0V$			1.0	μA
<b>On characteristics</b>						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 0.25mA$	0.70		1.50	V
Static drain-source on-resistance (note 1)	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 4A$			0.038	Ω
		$V_{GS} = 4.5V, I_D = 4A$			0.05	
		$V_{GS} = 2.5V, I_D = 3A$			0.08	
Forward transconductance (note 1)	$g_{fs}$	$V_{DS} = 5V, I_D = 3A$	3			S
<b>Dynamic characteristics (note 2)</b>						
Input capacitance	$C_{iss}$	$V_{DS} = 20V, V_{GS} = 0V, f = 1MHz$			570	pF
Output capacitance	$C_{oss}$			80		
Reverse transfer capacitance	$C_{rss}$			65		
<b>Switching characteristics</b>						
Turn-on delay time (note 1,2)	$t_{d(on)}$	$V_{GS} = 5V, V_{DS} = 10V, I_D = 1A, R_{GEN} = 3.3\Omega, R_D = 10\Omega$		8		ns
Rise time (note 2)	$t_r$			9		
Turn-off delay time (note 2)	$t_{d(off)}$			13		
Fall time (note 2)	$t_f$			3		
<b>Drain-source body diode characteristics</b>						
Body diode forward voltage (note 1)	$V_{SD}$	$I_S = 1A, V_{GS} = 0V$			1.3	V

No tes:

1. Pulse Test ; Pulse Width ≤300μs, Duty Cycle ≤2%.
2. These parameters have no way to verify.

# RATINGS AND CHARACTERISTIC CURVES

## Typical Characteristics

