

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

### FEATURE

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

### MECHANICAL DATA

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

### MAXIMUM RATINGS AND CHARACTERISTICS

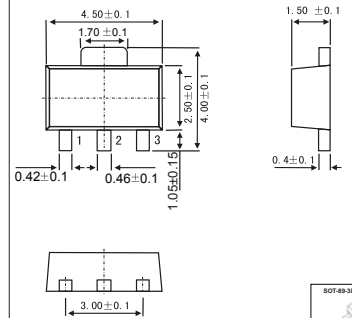
@ 25°C Ambient Temperature (unless otherwise noted)

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
-20V	135mΩ@-4.5V	-2.3A
	240mΩ@-2.5V	

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Continuous Gate-Source Voltage	$V_{GS}$	±12	
Continuous Drain Current	$I_D$	-2.3	A
Power Dissipation	$P_D$	0.5	W
Thermal Resistance from Junction to Ambient	$R_{θJA}$	250	°C/W
Operating Temperature	$T_j$	150	°C
Storage Temperature	$T_{stg}$	-55 ~+150	

SOT-89-3L

Unit:mm



### 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	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 10\mu A$	-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	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -0.25mA$	-0.50	-0.7	-1.50	V
Static drain-source on-resistance (note 1)	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -2.3A$		0.058	0.135	Ω
		$V_{GS} = -2.5V, I_D = -1.0A$		0.075	0.240	
Forward transconductance (note 1)	$g_{fs}$	$V_{DS} = -5V, I_D = -2.3A$	2.3			S
<b>Dynamic characteristics (note 2)</b>						
Input capacitance	$C_{iss}$	$V_{DS} = -20V, V_{GS} = 0V, f = 1MHz$			430	pF
Output capacitance	$C_{oss}$			100		
Reverse transfer capacitance	$C_{rss}$			35		
<b>Switching characteristics</b>						
Turn-on delay time (note 1,2)	$t_{d(on)}$	$V_{GS} = -5V, V_{DS} = -10V, I_D = -1A, R_G = 3.3\Omega, R_D = 10\Omega$		9		ns
Rise time (note 2)	$t_r$			25		
Turn-off delay time (note 2)	$t_{d(off)}$			20		
Fall time (note 2)	$t_f$			10		
<b>Drain-source body diode characteristics</b>						
Body diode forward voltage (note 1)	$V_{SD}$	$I_S = -1A, V_{GS} = 0V$			-1.6	V

No tes:

1. Pulse Test ; Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
2. These parameters have no way to verify.

## ■ Typical Characteristics

