

## TO-92 Plastic-Encapsulate MOSFETS

### FEATURES

- N-Channel Power MOSFET
- Robust High Voltage Termination
- Avalanche Energy Specified
- Source-to-Drain Diode Recovery Time Comparable to a Discrete
- Fast Recovery Diode is Characterized for Use in Bridge Circuits
- $I_{DSS}$  and  $V_{DS(on)}$  Specified at Elevated Temperature

### MECHANICAL DATA

- Case style:TO-92 molded plastic
- Mounting position:any

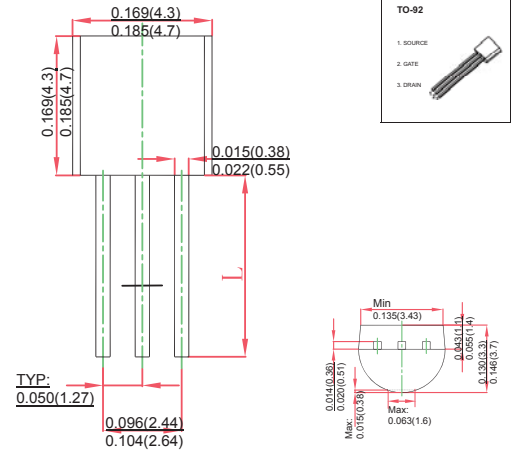
### MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	600	V
Gate-Source Voltage	$V_{GS}$	$\pm 30$	
Continuous Drain Current	$I_D$	1	A
Pulsed Drain Current	$I_{DM}$	9	
Power Dissipation	$P_D$	0.625	W
Single Pulsed Avalanche Energy*	$E_{AS}$	20	mJ
Thermal Resistance from Junction to Ambient	$R_{thJA}$	200	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{stg}$	-50 ~ +150	

\* $E_{AS}$  condition:  $T_J=25^\circ\text{C}$ ,  $V_{DD}=100\text{V}$ ,  $V_{GS}=10\text{V}$ ,  $L=10\text{mH}$ ,  $I_{AS}=2\text{A}$ ,  $R_G=25\Omega$

### TO-92



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

Parameter	Symbol	Test Condition	Min	Typ	Max	Units	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}$ , $I_D = 250\mu\text{A}$	600			V	
Gate-Threshold Voltage (note1)	$V_{GS(th)}$	$V_{DS} = V_{GS}$ , $I_D = 250\mu\text{A}$	2.0		4.0		
Gate-Body Leakage Current (note1)	$I_{GSS}$	$V_{DS} = 0\text{V}$ , $V_{GS} = \pm 20\text{V}$			$\pm 100$	nA	
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 600\text{V}$ , $V_{GS} = 0\text{V}$			0.10	$\mu\text{A}$	
Drain-Source On-State Resistance (note1)	$R_{DS(on)}$	$V_{GS} = 10\text{V}$ , $I_D = 0.6\text{A}$			10	$\Omega$	
Forward Transconductance (note1)	$g_{FS}$	$V_{DS} = 50\text{V}$ , $I_D = 0.5\text{A}$	0.5			S	
Input Capacitance	$C_{ISS}$	$V_{DS} = 25\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1\text{MHz}$		210		pF	
Output Capacitance	$C_{OSS}$				28		
Reverse Transfer Capacitance	$C_{RSS}$				4.2		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 300\text{V}$ , $I_D = 1\text{A}$ , $V_{GS} = 10\text{V}$ , $R_G = 18\Omega$		8		nS	
Rise Time	$t_r$			21			
Turn-Off Delay Time	$t_{d(off)}$			18			
Fall Time	$t_f$			24			
Forward on Voltage(note1)	$V_{SD}$	$V_{GS} = 0\text{V}$ , $I_S = 1\text{A}$			1.5	V	

#### Notes:

1. Pulse Test : Pulse Width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$ .

## Typical Characteristics

