

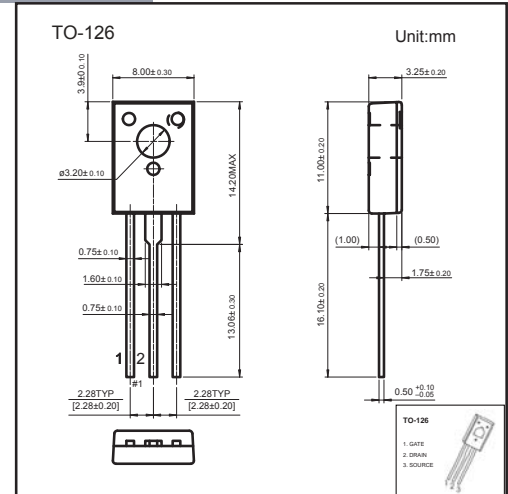
## TO-126 Plastic-Encapsulate MOSFETS

### FEATURES

- Robust High Voltage Termination
- Avalanche Energy Specified
- Diode is Characterized for Use in Bridge Circuits
- $V_{(BR)DSS} = 600V$
- $R_{DS(on)MAX} : 4.4\Omega @ 10V$
- $I_D : 2A$

### 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	$V_{GS}$	$\pm 20$	
Continuous Drain Current	$I_D$	2	A
Pulsed Drain Current	$I_{DM}$	8	
Power Dissipation	$P_D$	1.25	W
Single Pulsed Avalanche Energy*	$E_{AS}$	128	mJ
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	100	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-50 ~ +150	
Maximum lead temperature for soldering purposes , 1/8" from case for 5 seconds	$T_L$	260	°C

\* EAS condition:  $T_J = 25^\circ C, V = DD 50V, L = 64mH, I_{AS} = 2A, R_G = 25\Omega$

### MOSFET ELECTRICAL CHARACTERISTICS $T_a = 25^\circ C$ unless otherwise specified

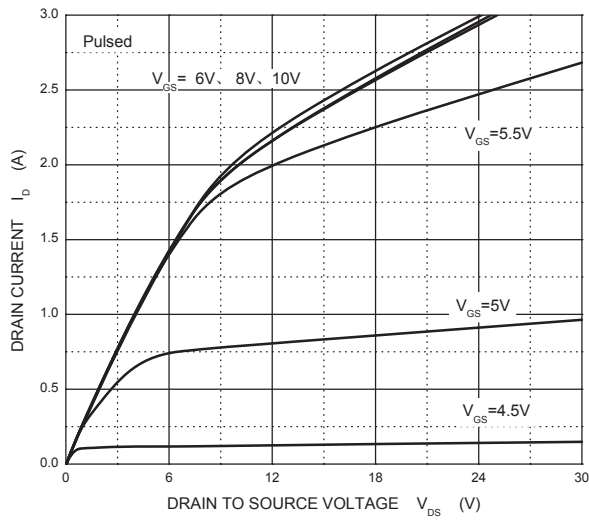
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Off characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	600			V
Drain-source diode forward voltage(note2)	$V_{SD}$	$V_{GS} = 0V, I_S = 2A$			1.6	
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 600V, V_{GS} = 0V$			25	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$			$\pm 100$	nA
<b>On characteristics (note2)</b>						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.0		4.0	V
Static drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 1A$			4.4	$\Omega$
Forward Transconductance (note1)	$g_{fs}$	$V_{DS} = 50V, I_D = 1A$	1			S
<b>Dynamic characteristics (note 3)</b>						
Input capacitance	$C_{iss}$	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$		435		pF
Output capacitance	$C_{oss}$			56		
Reverse transfer capacitance	$C_{rss}$			9.2		
<b>Switching characteristics (note 3)</b>						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 300V, V_{GS} = 10V, R_G = 18\Omega, I_D = 2A$		12		ns
Turn-on rise time	$t_r$			21		
Turn-off delay time	$t_{d(off)}$			30		
Turn-off fall time	$t_f$			24		

#### Notes :

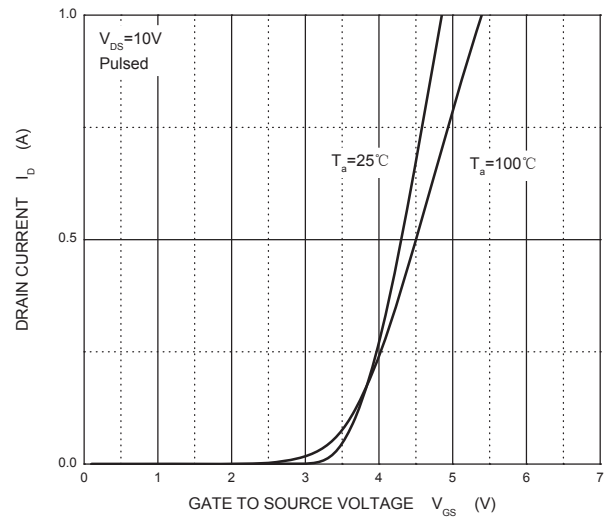
1.  $L = 16mH, I_L = 5A, V_{DD} = 50V, R_G = 25\Omega, \text{Starting } T_J = 25^\circ C.$
2. Pulse Test : Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
3. These parameters have no way to verify.

## Typical Characteristics

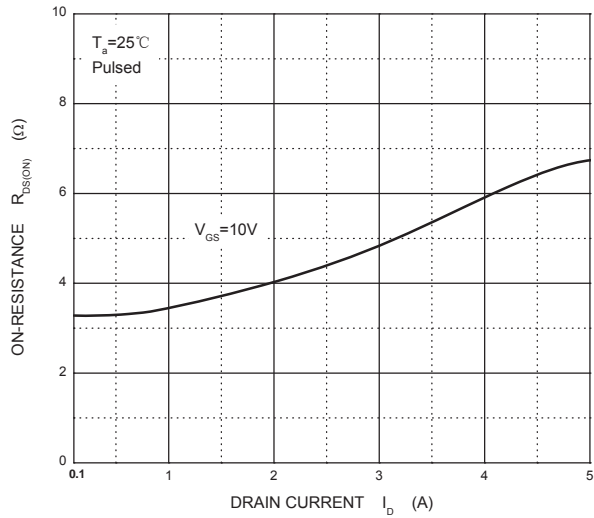
### Output Characteristics



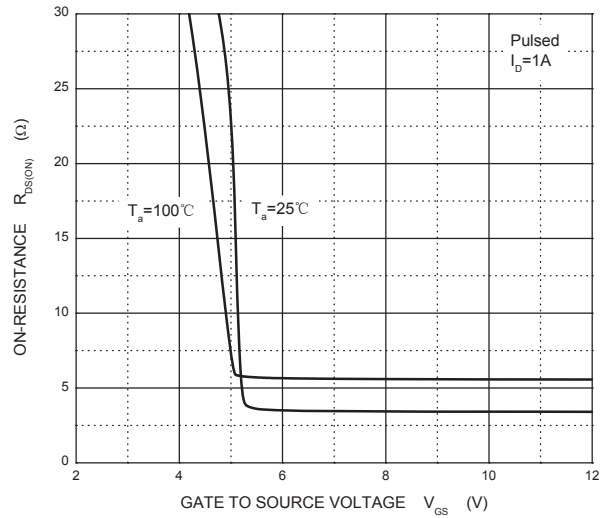
### Transfer Characteristics



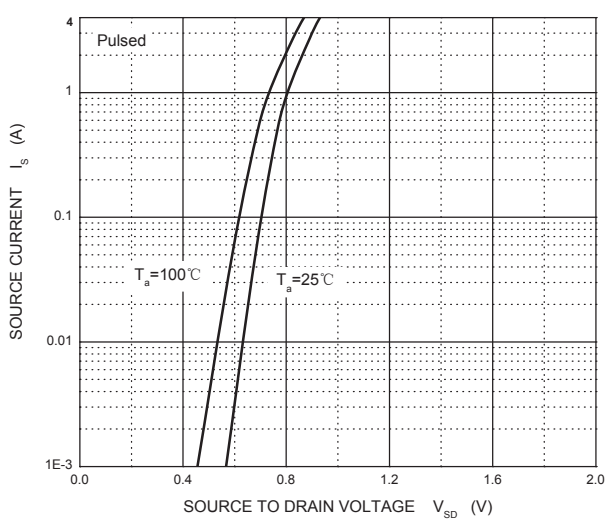
### $R_{DS(ON)}$ — $I_D$



### $R_{DS(ON)}$ — $V_{GS}$



### $I_S$ — $V_{SD}$



### Threshold Voltage

