



#### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
100V	6.7mΩ@10V	87A

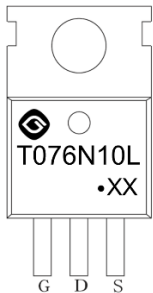
#### Feature

- Split Gate Trench Technology
- Low  $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% UIS Tested

#### Application

- Industrial Power Supply
- Load Switch

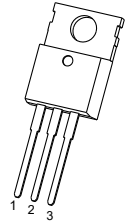
#### MARKING:



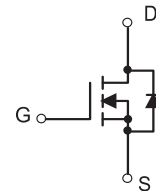
T076N10L = Device Code  
XX = Date Code  
Solid Dot = Green Indicator

#### TO-220-3L

1. GATE
2. DRAIN
3. SOURCE



#### Schematic diagram



#### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	$V_{DS}$	100	V
Gate - Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current <sup>1</sup>	$I_D$	87	A
Pulsed Drain Current <sup>2</sup>	$I_{DM}$	350	A
Single Pulsed Avalanche Current <sup>3</sup>	$I_{AS}$	36	A
Single Pulsed Avalanche Energy <sup>3</sup>	$E_{AS}$	324	mJ
Power Dissipation <sup>5</sup>	$P_D$	138	W
Thermal Resistance from Junction to Ambient <sup>6</sup>	$R_{\theta JA}$	60	$^\circ\text{C}/\text{W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	0.9	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^\circ\text{C}$

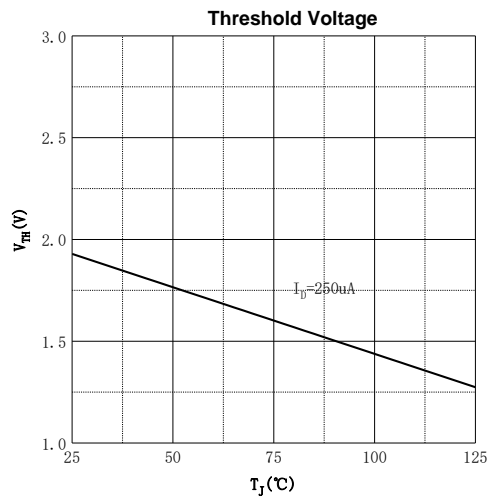
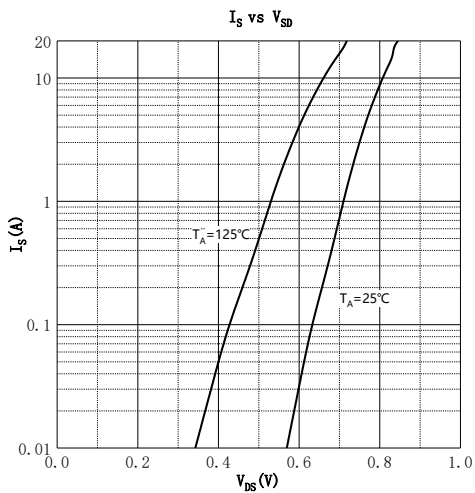
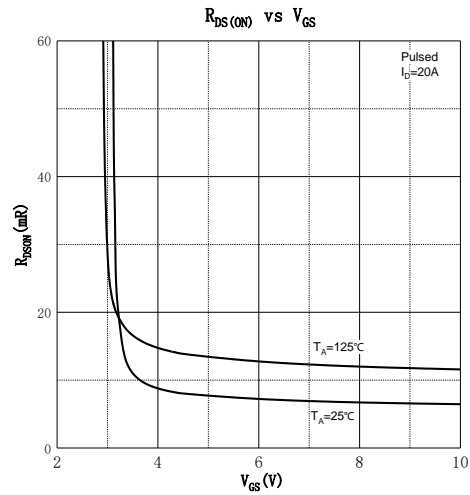
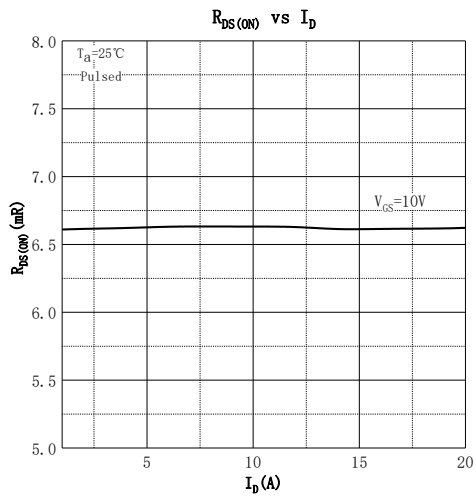
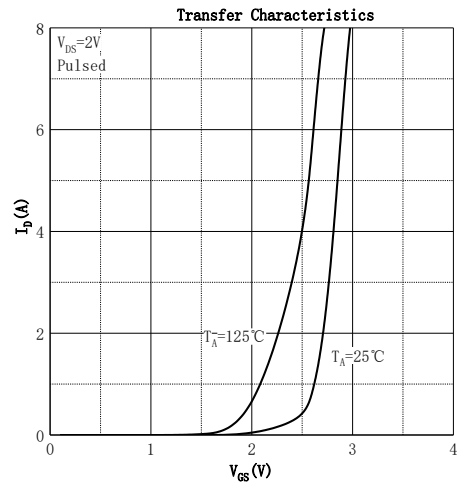
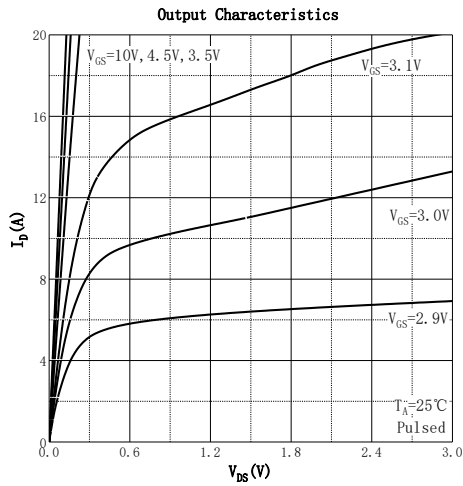
## MOSFET ELECTRICAL CHARACTERISTICS ( $T_J = 25^\circ\text{C}$ unless otherwise noted)

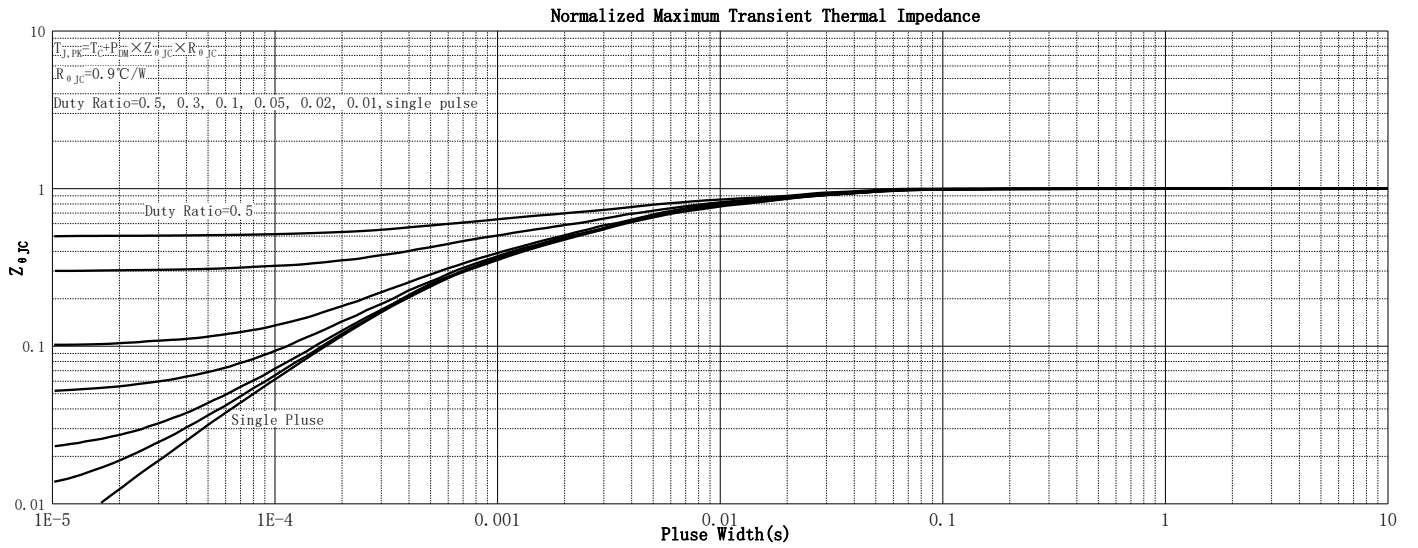
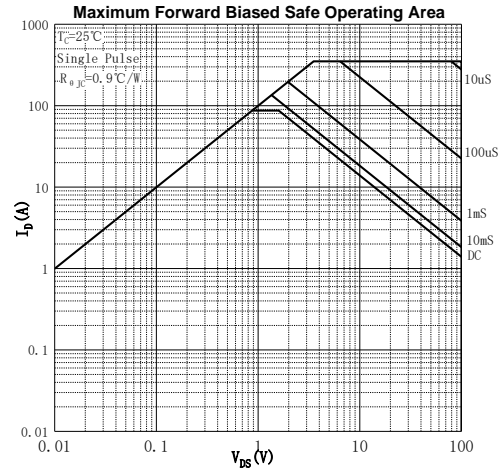
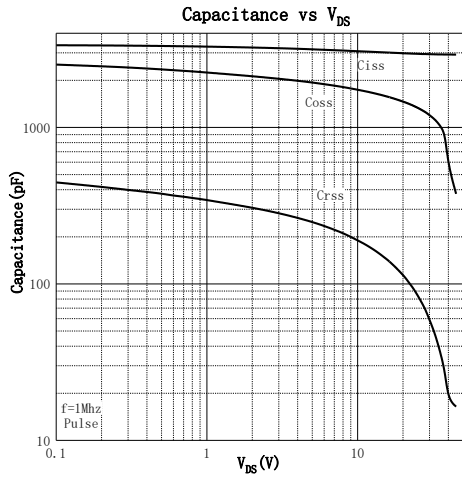
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 80V, V_{GS} = 0V$			1	$\mu A$
Gate - Body Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 100$	nA
<b>On Characteristics<sup>4</sup></b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	2	3	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$		6.7	7.7	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS} = 10V, I_D = 10A$		29		S
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 50V, V_{GS} = 0V, f = 1MHz$		2915		pF
Output Capacitance	$C_{oss}$			370		
Reverse Transfer Capacitance	$C_{rss}$			16		
Gate Resistance	$R_g$	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		1.2		$\Omega$
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS} = 50V, V_{GS} = 10V, I_D = 45A$		55		nC
Gate-source Charge	$Q_{gs}$			18		
Gate-drain Charge	$Q_{gd}$			14		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 50V, V_{GS} = 10V, R_L = 1.2\Omega$ $R_G = 3\Omega$		15		ns
Turn-on Rise Time	$t_r$			10		
Turn-off Delay Time	$t_{d(off)}$			32		
Turn-off Fall Time	$t_f$			10		
<b>Source - Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>4</sup>	$V_{SD}$	$V_{GS} = 0V, I_S = 10A$			1.2	V

Notes :

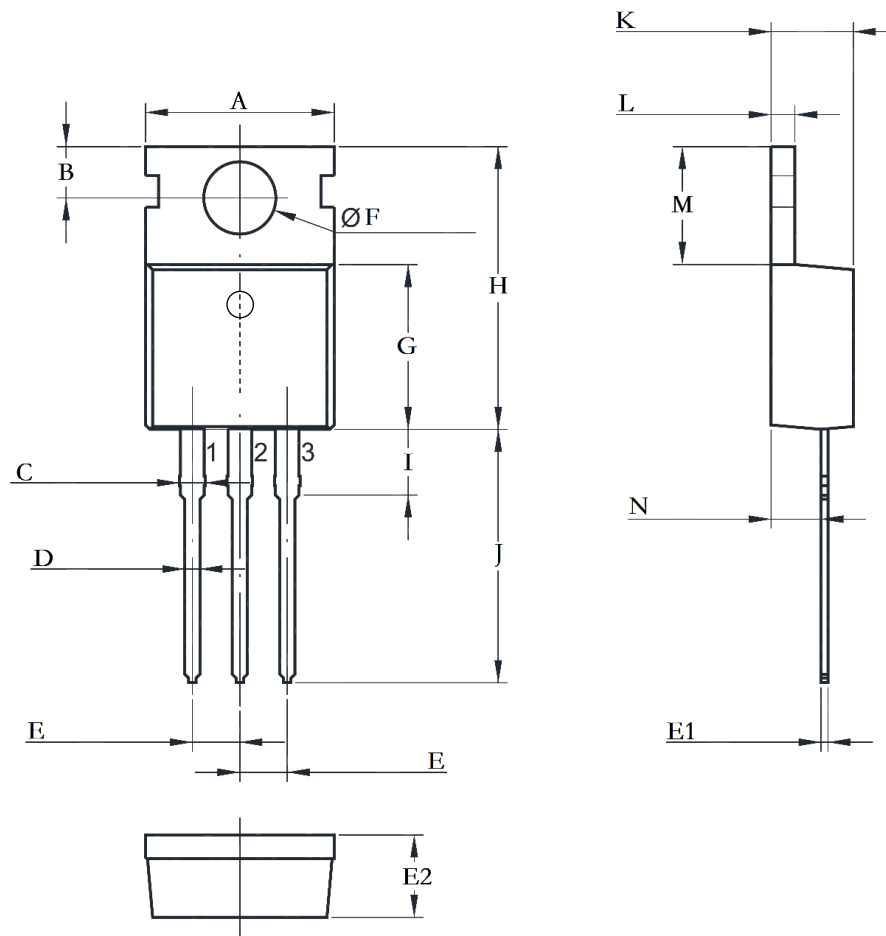
- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width  $\leq 10\mu s$ , duty cycle  $\leq 1\%$ .
- 3.EAS condition:  $V_{DD} = 50V, V_{GS} = 10V, L = 0.5mH, R_G = 25\Omega$  Starting  $T_J = 25^\circ\text{C}$ .
- 4.Pulse Test : Pulse Width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
- 5.The power dissipation  $P_D$  is limited by  $T_{J(MAX)} = 150^\circ\text{C}$ .And device mounted on a large heatsink
- 6.Device mounted on  $1in^2$  FR-4 board with 2oz. Copper, in a still air environment with  $T_A = 25^\circ\text{C}$ .

## Typical Characteristics





## TO-220-3L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	9.600	10.400	0.378	0.409
B	2.800TYP		0.110TYP	
C	1.200	1.600	0.047	0.063
D	0.600	1.000	0.024	0.039
E	2.540TYP		0.100TYP	
E1	0.300	0.700	0.012	0.028
E2	4.300	4.700	0.169	0.185
F	3.400	4.000	0.134	0.157
G	8.850	9.350	0.348	0.368
H	14.600	16.100	0.575	0.634
I	2.800	4.200	0.110	0.165
J	12.600	14.800	0.496	0.583
K	4.300	4.700	0.169	0.185
L	1.000	1.400	0.039	0.055
M	5.840	7.000	0.230	0.276
N	1.800	2.900	0.071	0.114