



#### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
100V	46mΩ@10V	25A

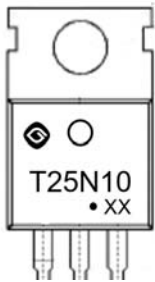
#### Feature

- Excellent package for good heat dissipation
- Low reverse transfer capacitance
- Fast switching capability

#### Application

- Power switching application

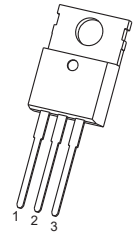
#### MARKING:



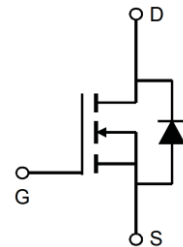
T25N10 = Device Code  
 Solid dot = Green molding compound device,  
 if none, the normal device  
 XX = Date Code

#### TO-220-3L-C

1. GATE
2. DRAIN
3. SOURCE



#### Schematic diagram



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	25	A
Pulsed Drain Current	$I_{DM}$	75	A
Single Pulsed Avalanche Energy <sup>1</sup>	$E_{AS}$	256	mJ
Power Dissipation	$P_D$	50	W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	2.5	$^{\circ}C/W$
Junction Temperature	$T_J$	150	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55~ +150	$^{\circ}C$

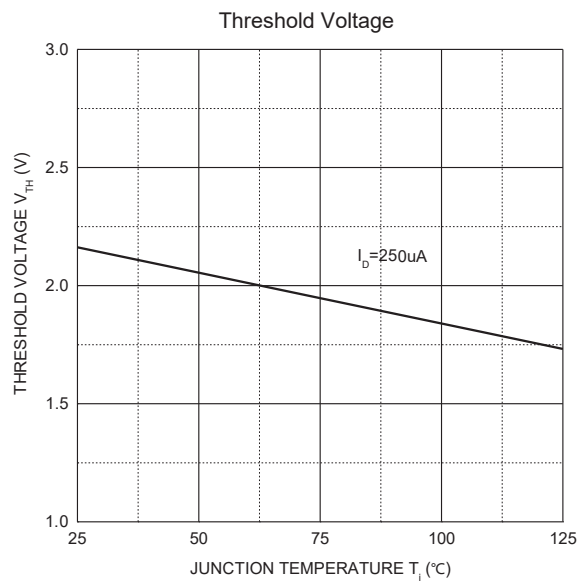
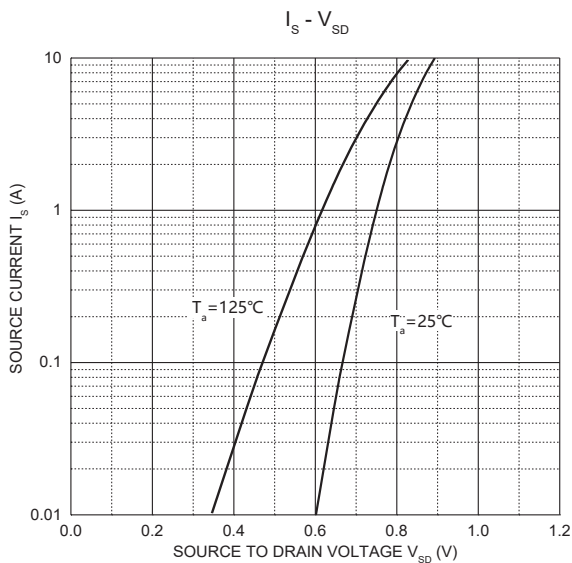
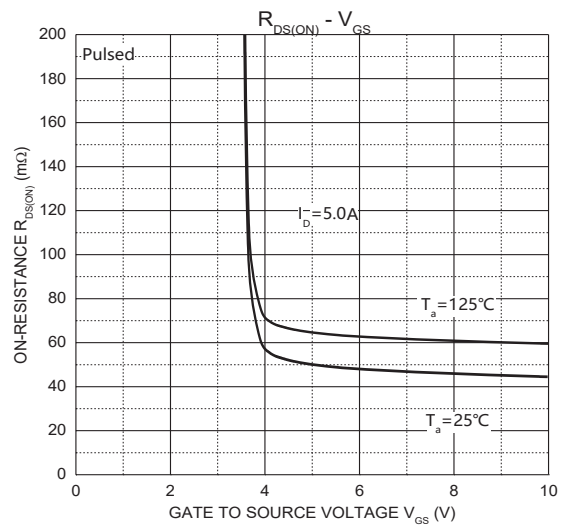
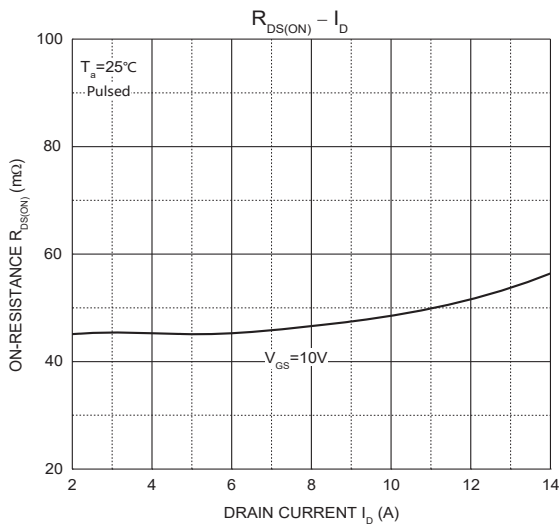
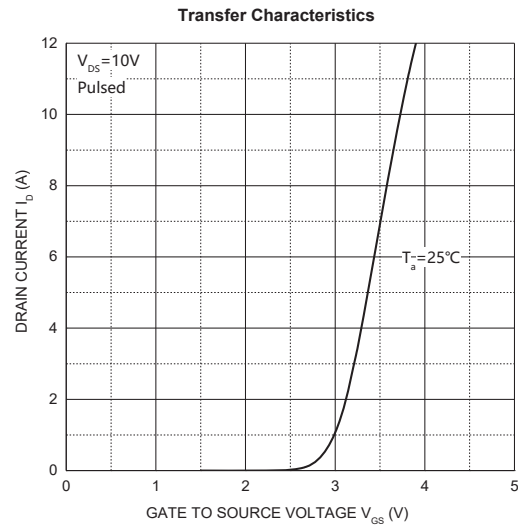
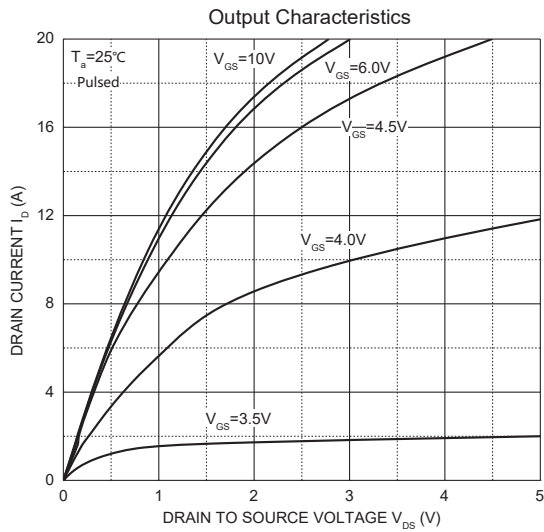
## MOSFET ELECTRICAL CHARACTERISTICS( $T_C=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Static 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
Gate threshold voltage <sup>2</sup>	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	2.0	3.0	V
Drain-source on-resistance <sup>2</sup>	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 8A$		46	60	m $\Omega$
<b>Dynamic characteristics<sup>3</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 30V, V_{GS} = 0V, f = 1MHz$		1680		pF
Output Capacitance	$C_{oss}$			61		
Reverse Transfer Capacitance	$C_{rss}$			54		
<b>Switching Characteristics<sup>3</sup></b>						
Total Gate Charge@10V	$Q_g$	$V_{DS} = 30V, V_{GS} = 10V, I_D = 3A$		27		nC
Gate-Source Charge	$Q_{gs}$			4		
Gate-Drain Charge	$Q_{gd}$			5		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 30V, V_{GS} = 10V, R_G = 2.5\Omega, I_D = 2A, R_L = 15\Omega$		13		ns
Turn-on rise time	$t_r$			8		
Turn-off delay time	$t_{d(off)}$			25		
Turn-off fall time	$t_f$			11		
<b>Diode Characteristics<sup>2</sup></b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS} = 0V, I_S = 8A,$		0.85	1.2	V

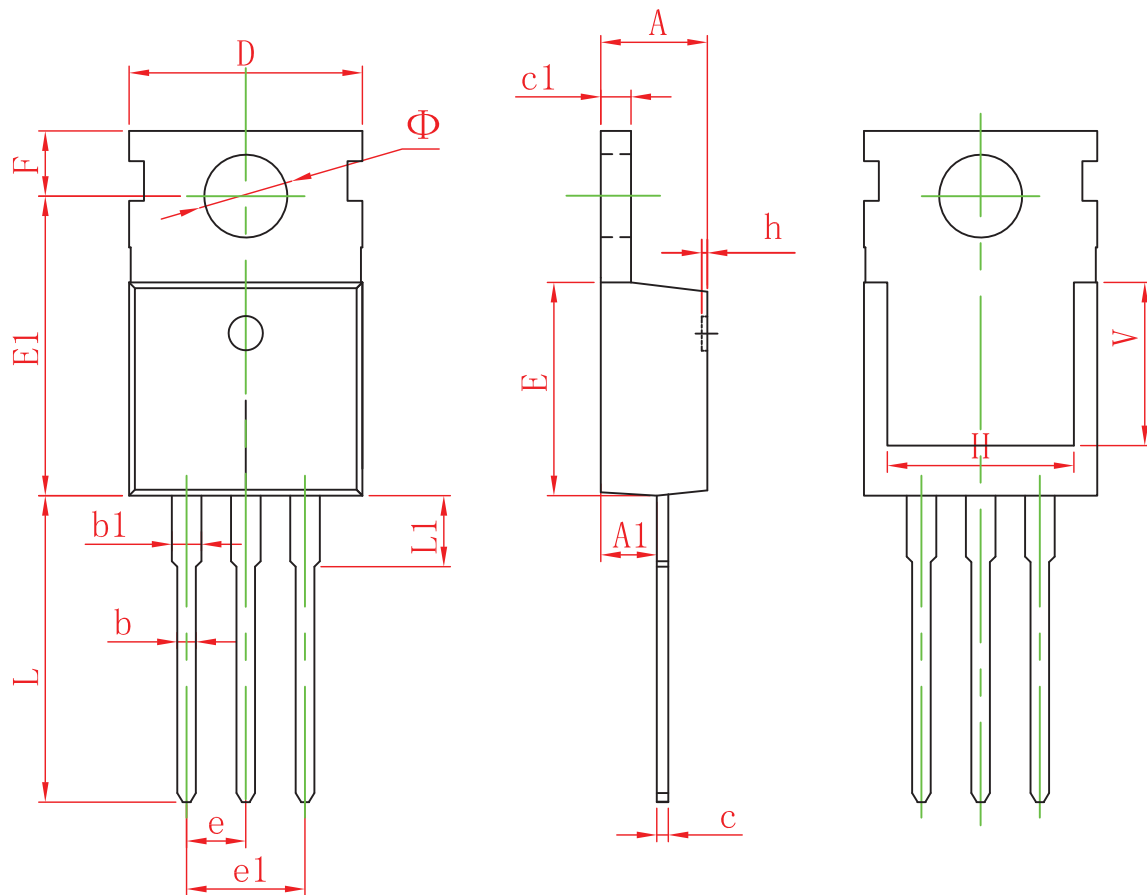
Note :

- $V_{DD} = 25V, V_{GS} = 10V, L = 0.5mH, I_{AS} = 7A, \text{Starting } T_J = 25^\circ\text{C}.$
- Pulse Test : Pulse width  $\leq 300\mu s,$  duty cycle  $\leq 2\%.$
- Guaranteed by design, not subject to production

**Typical Electrical and Thermal Characteristics**



## TO-220-3L-C Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.400	4.600	0.173	0.181
A1	2.250	2.550	0.089	0.100
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.330	0.650	0.013	0.026
c1	1.200	1.400	0.047	0.055
D	9.910	10.250	0.390	0.404
E	8.950	9.750	0.352	0.384
E1	12.650	12.950	0.498	0.510
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
F	2.650	2.950	0.104	0.116
H	7.900	8.100	0.311	0.319
h	0.000	0.300	0.000	0.012
L	12.900	13.400	0.508	0.528
L1	2.850	3.250	0.112	0.128
V	7.500 REF.		0.295 REF.	
Φ	3.400	3.800	0.134	0.150