



Product Summary

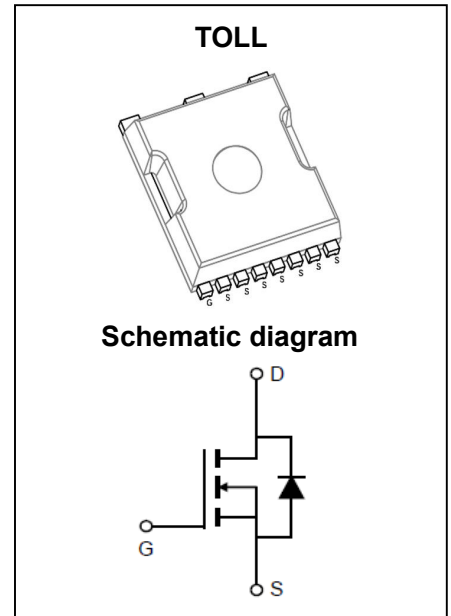
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	1.5m Ω @10V	290A

Feature

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

Application

- Power Switching Application
- DC/DC Converter
- Motor Driver



MARKING:



T015N10N = Device Code
 XX = Date Code
 Solid Dot = Green Indicator

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 ¹	$T_C = 25^\circ\text{C}$	I_D	290	A
	$T_C = 100^\circ\text{C}$	I_D	189	A
Pulsed Drain Current ²	I_{DM}	1160	A	
Single Pulsed Avalanche Current ³	I_{AS}	74	A	
Single Pulsed Avalanche Energy ³	E_{AS}	1369	mJ	
Power Dissipation ⁵	$T_C = 25^\circ\text{C}$	P_D	391	W
Thermal Resistance from Junction to Ambient ⁶	$R_{\theta JA}$	39	$^\circ\text{C}/\text{W}$	
Thermal Resistance from Junction to Case	$R_{\theta JC}$	0.32	$^\circ\text{C}/\text{W}$	
Junction Temperature	T_J	150	$^\circ\text{C}$	
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$	

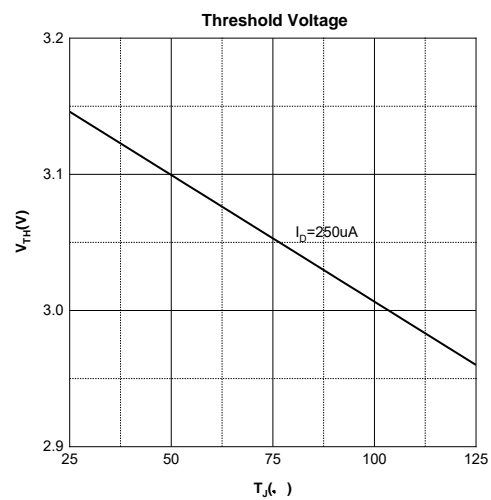
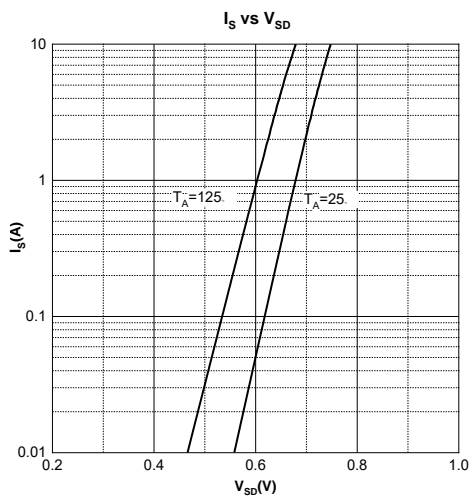
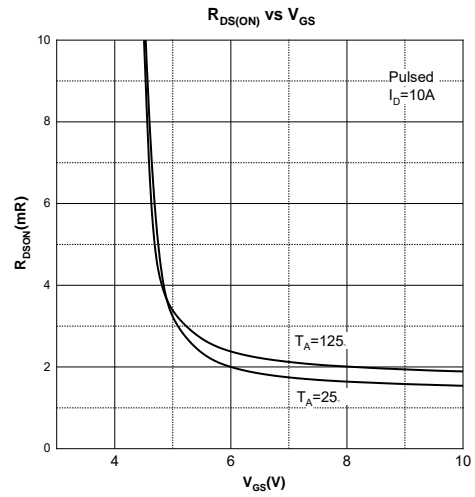
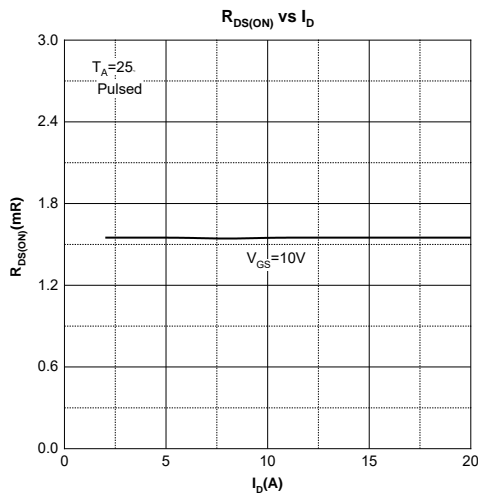
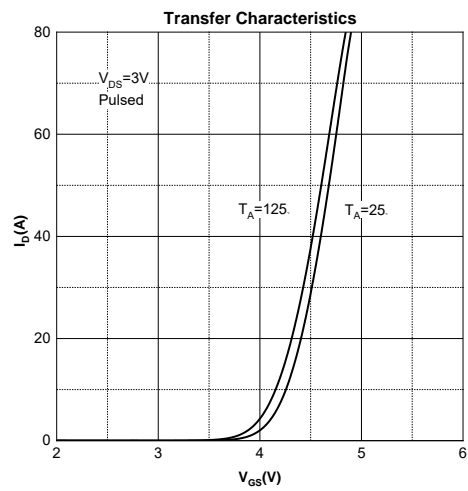
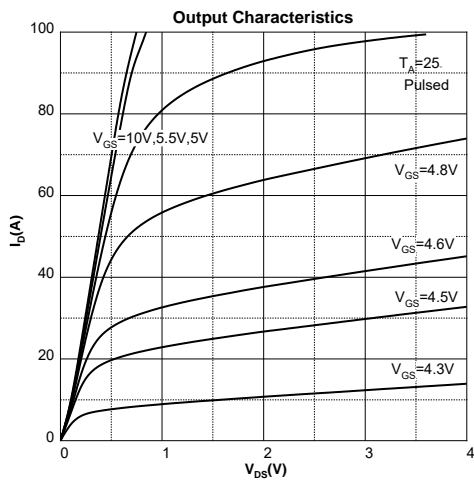
MOSFET ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

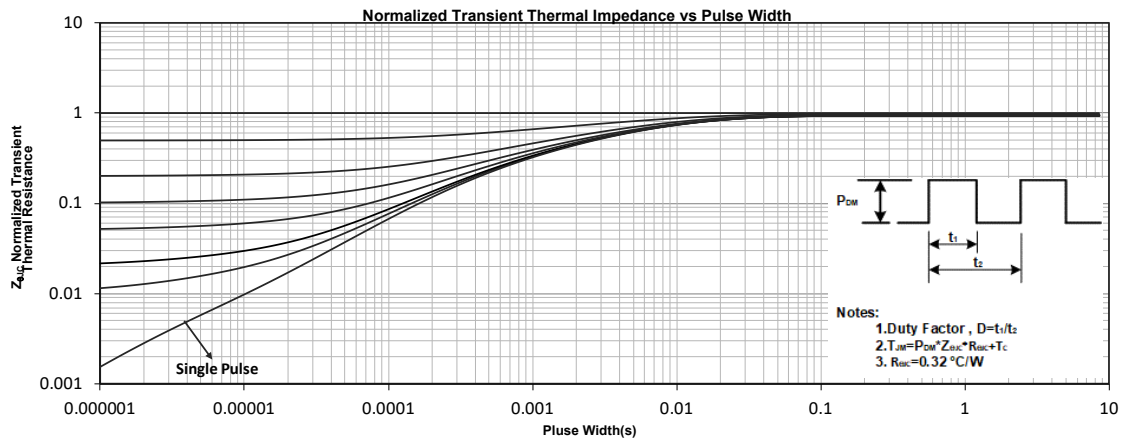
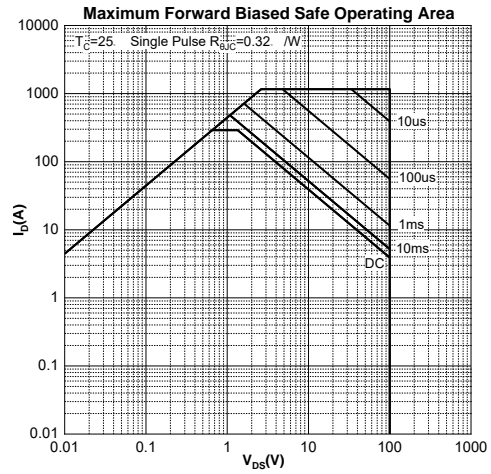
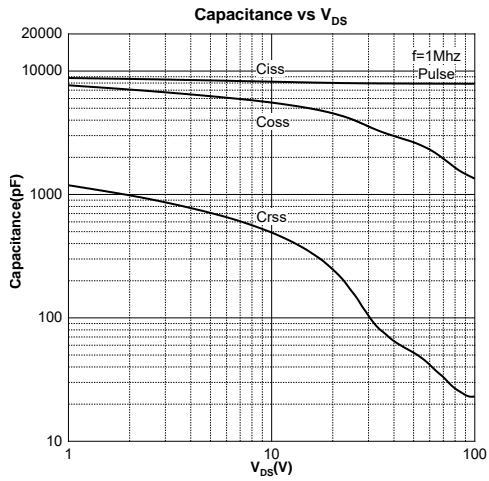
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics⁴						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	3.1	4	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$		1.5	2.1	$m\Omega$
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0V, f = 0.1MHz$		8012		pF
Output Capacitance	C_{oss}			2684		
Reverse Transfer Capacitance	C_{rss}			52		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 0.1MHz$		1.3		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 50V, V_{GS} = 10V, I_D = 20A$		115		nC
Gate-source Charge	Q_{gs}			33		
Gate-drain Charge	Q_{gd}			23		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 50V, V_{GS} = 10V, I_D = 20A,$ $R_G = 3\Omega$		26		ns
Turn-on Rise Time	t_r			51		
Turn-off Delay Time	$t_{d(off)}$			88		
Turn-off Fall Time	t_f			62		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁴	V_{SD}	$V_{GS} = 0V, I_S = 20A$			1.2	V

Notes :

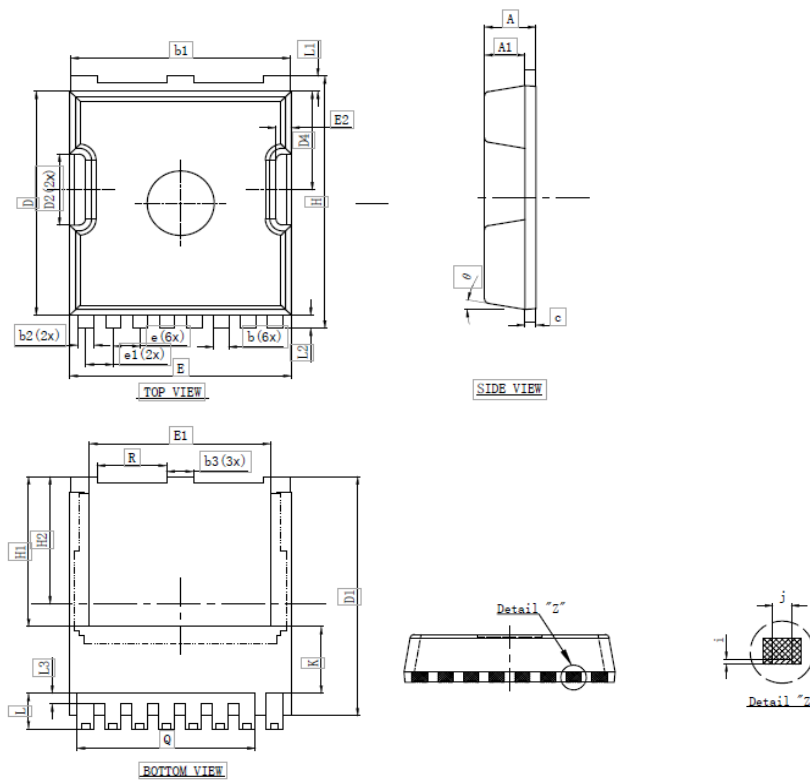
1. The maximum current rating is limited by package. And device mounted on a large heatsink
2. Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
3. EAS condition: $V_{DD} = 50V, V_{GS} = 10V, L = 0.5mH, R_G = 25\Omega$ Starting $T_J = 25^\circ\text{C}$.
4. Pulse Test : Pulse Width $\leq 300\mu s$, 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





TOLL Package Information



SYMBOL	MILLIMETER		Dimensions In Inches	
	MIN.	MAX.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	1.700	1.900	0.067	0.075
b	0.600	0.800	0.024	0.031
b1	9.700	9.900	0.382	0.390
b2	0.650	0.850	0.026	0.033
b3	1.100	1.300	0.043	0.051
c	0.400	0.600	0.016	0.024
D	10.300	10.500	0.406	0.413
D1	11.000	11.200	0.433	0.441
D2	3.200	3.400	0.126	0.134
D4	4.470	4.670	0.176	0.184
E	9.800	10.000	0.386	0.394
E1	8.000	8.200	0.315	0.323
E2	0.500	0.700	0.020	0.028
e	1.200 BSC		0.047BSC	
e1	1.225 BSC		0.048BSC	
H	11.600	11.800	0.457	0.465
H1	6.950 BSC		0.247BSC	
H2	5.900 BSC		0.232BSC	
i	0.100 REF		0.004REF	
j	0.350 REF		0.014REF	
K	3.100 REF		0.122REF	
L	1.550	1.750	0.061	0.069
L1	0.600	0.800	0.024	0.031
L2	0.500	0.700	0.020	0.028
L3	0.400	0.600	0.016	0.024
Q	7.950 REF		0.313REF	
R	3.000	3.200	0.118	0.126
θ	10°			