

Product Summary

V _{(BR)DSS}	R _{DS(on)} TYP	I _D
30V	0.8mΩ@10V	200A
	1.2mΩ@4.5V	

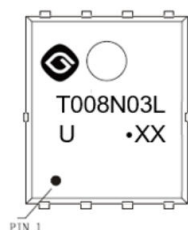
Feature

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

Application

- Power Switching Application

MARKING:

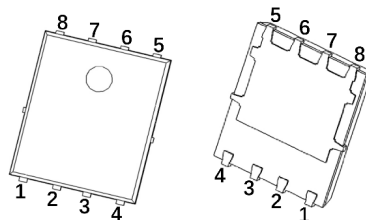


T008N03LU = Device Code

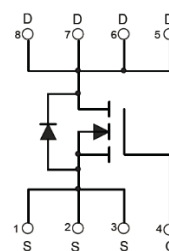
XX = Date Code

Solid Dot = Green Indicator

PDFN5x6-8L



Schematic diagram



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V _{DS}	30	V
Gate - Source Voltage		V _{GS}	±20	V
Continuous Drain Current ¹	T _C = 25°C	I _D	200	A
	T _C = 100°C	I _D	130	A
Pulsed Drain Current ²		I _{DM}	800	A
Single Pulsed Avalanche Current ³		I _{AS}	47	A
Single Pulsed Avalanche Energy ³		E _{AS}	906	mJ
Power Dissipation ⁵		P _D	96	W
Thermal Resistance from Junction to Ambient ⁶		R _{θJA}	51	°C/W
Thermal Resistance from Junction to Case		R _{θJC}	1.3	°C/W
Junction Temperature		T _J	150	°C
Storage Temperature		T _{STG}	-55~ +150	°C

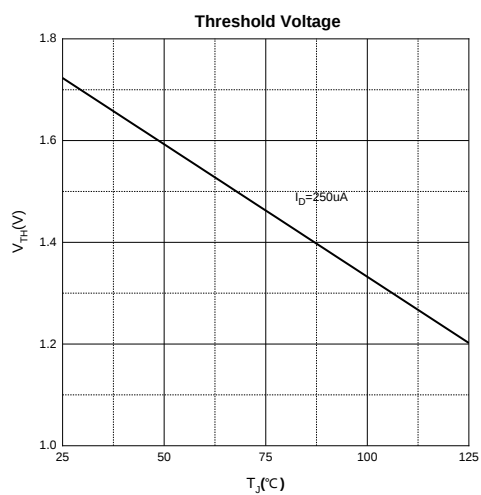
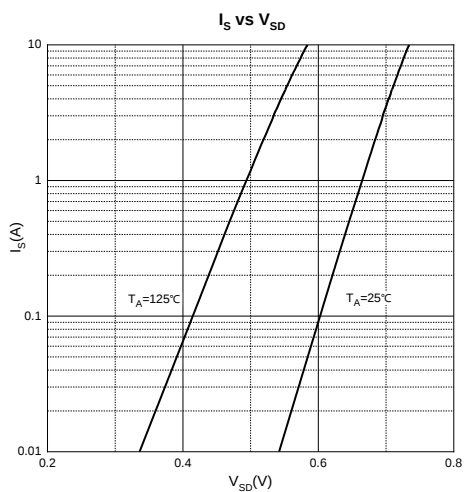
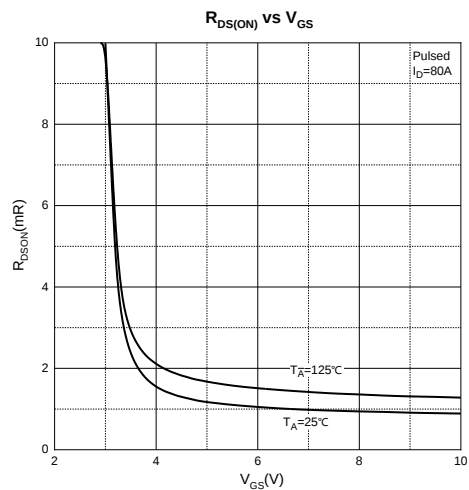
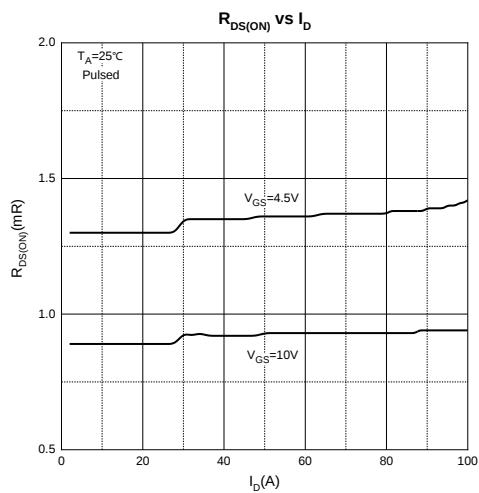
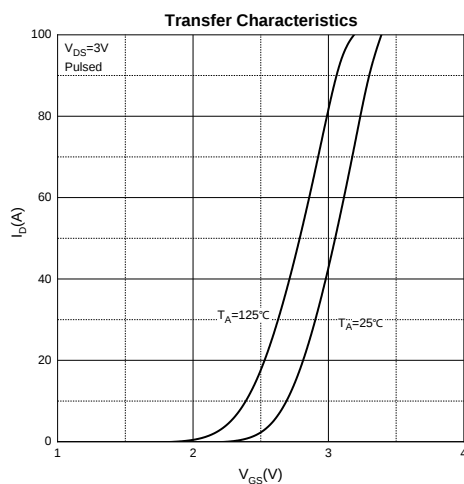
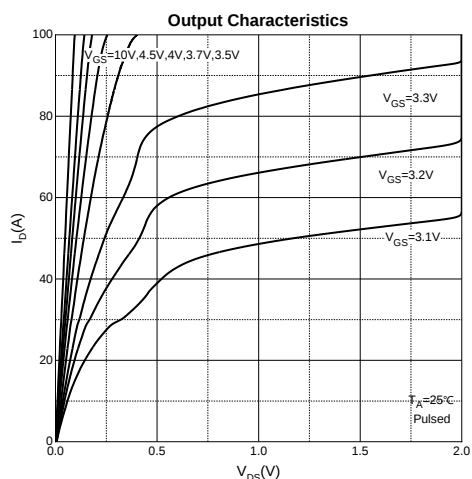
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

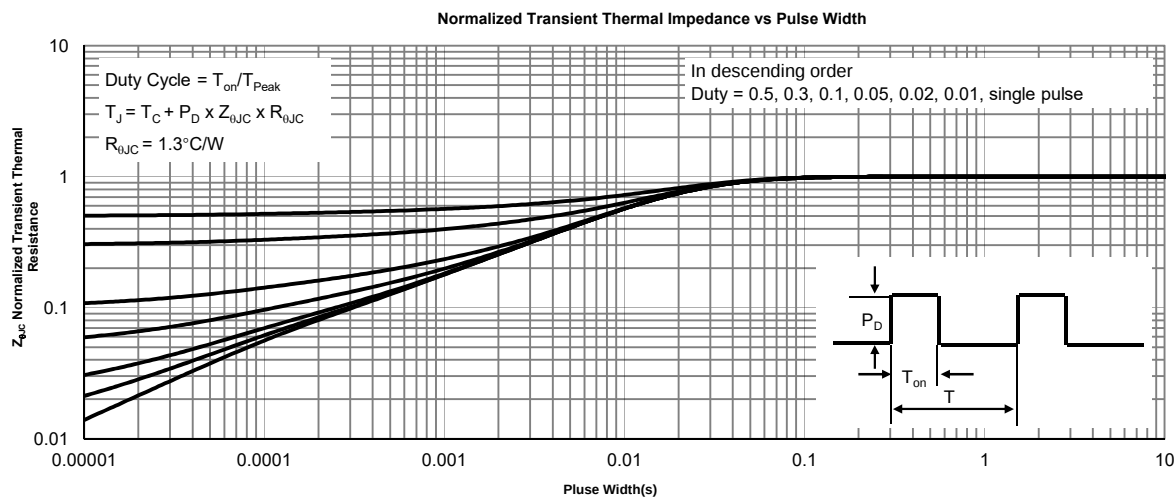
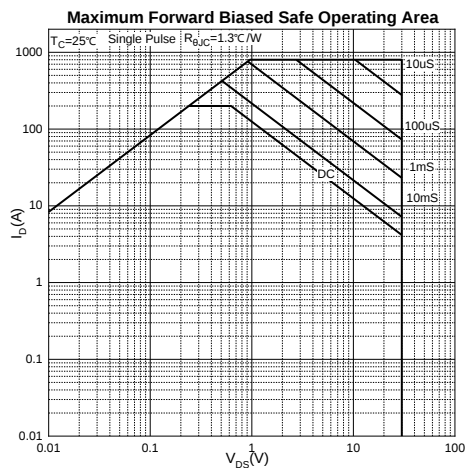
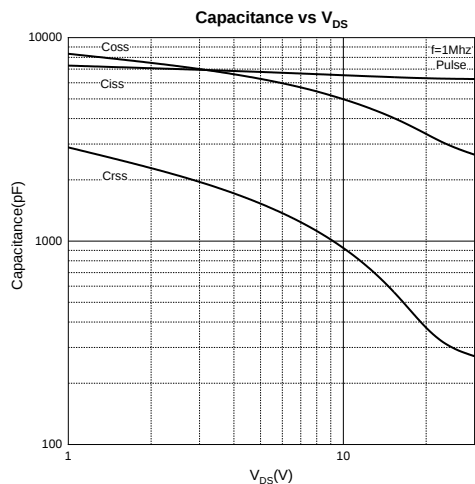
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$			1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics ⁴						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.7	3	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$		0.8	1.1	m Ω
		$V_{GS} = 4.5V, I_D = 20A$		1.2	1.6	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		6426		pF
Output Capacitance	C_{oss}			3632		
Reverse Transfer Capacitance	C_{rss}			520		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		4.0		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DD} = 15V, V_{GS} = 10V, I_D = 20A$		115.1		nC
Gate-source Charge	Q_{gs}			16.8		
Gate-drain Charge	Q_{gd}			28.4		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 15V, V_{GS} = 10V, R_L = 15\Omega$ $R_G = 2.5\Omega$		18		ns
Turn-on Rise Time	t_r			200		
Turn-off Delay Time	$t_{d(off)}$			85		
Turn-off Fall Time	t_f			125		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁴	V_{SD}	$V_{GS} = 0V, I_S = 20A$			1.0	V

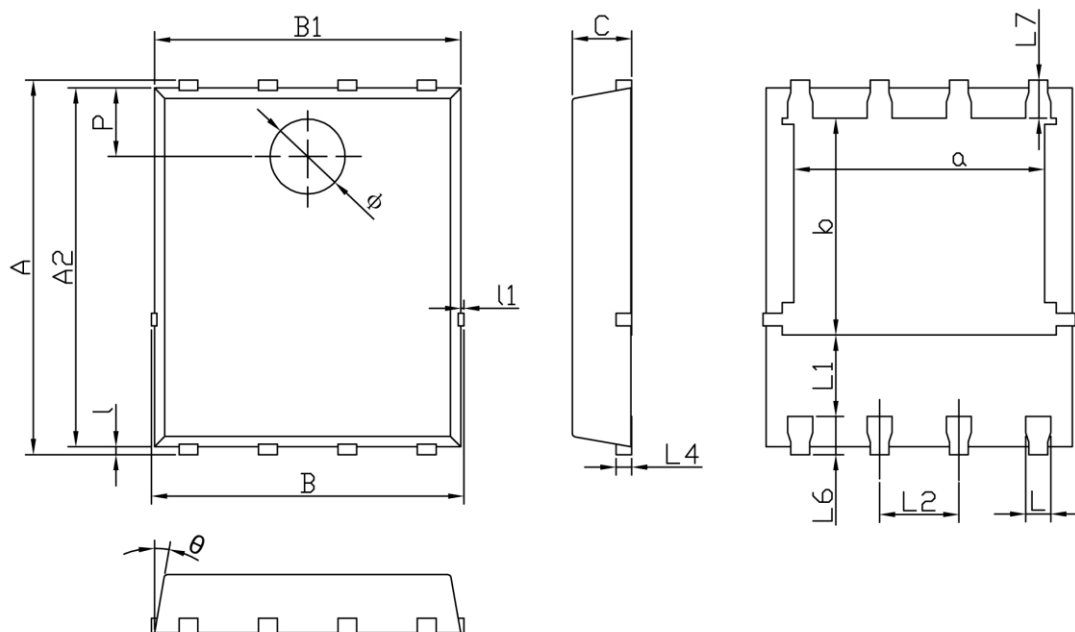
Notes :

- 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: $V_{DD} = 30V, V_{GS} = 10V, L = 1mH, R_G = 25\Omega$ 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 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics





PDFN5x6-8L Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	5.900	6.100	0.232	0.240
a	3.910	4.110	0.154	0.162
A2	5.700	5.800	0.224	0.228
B	4.900	5.100	0.193	0.201
b	3.370	3.570	0.133	0.141
B1	4.800	5.000	0.189	0.197
C	0.900	1.000	0.035	0.039
L	0.350	0.450	0.014	0.018
l	0.060	0.200	0.002	0.008
L1	1.100	-	0.043	-
l1	-	0.100	-	0.004
L2	1.170	1.370	0.046	0.054
L4	0.210	0.340	0.008	0.013
L6	0.510	0.710	0.020	0.028
L7	0.510	0.710	0.020	0.028
P	1.000	1.200	0.039	0.047
ũ	1.100	1.300	0.043	0.051
‰	8 $\tilde{A}$	12 $\tilde{A}$	8 $\tilde{A}$	12 $\tilde{A}$