

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
40V	6m Ω @10V	40A
	11m Ω @4.5V	

Feature

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

Application

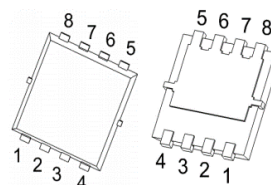
- Power Switching Application

MARKING:

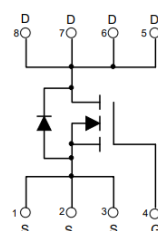


T060N04L = Device Code
XX = Date Code
Solid Dot = Green Indicator

PDFN3.3X3.3-8L



Schematic diagram



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

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	40	V
Gate - Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ¹	$T_C = 25^\circ\text{C}$	I_D	40	A
	$T_C = 100^\circ\text{C}$	I_D	26	A
Pulsed Drain Current ²		I_{DM}	160	A
Single Pulsed Avalanche Current ³		I_{AS}	16	A
Single Pulsed Avalanche Energy ³		E_{AS}	64	mJ
Power Dissipation ⁵	$T_C = 25^\circ\text{C}$	P_D	28	W
Thermal Resistance from Junction to Ambient ⁶		$R_{\theta JA}$	61	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case		$R_{\theta JC}$	4.5	$^\circ\text{C/W}$
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55~ +150	$^\circ\text{C}$

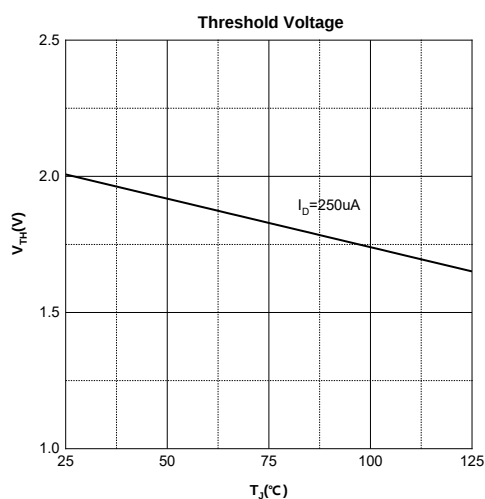
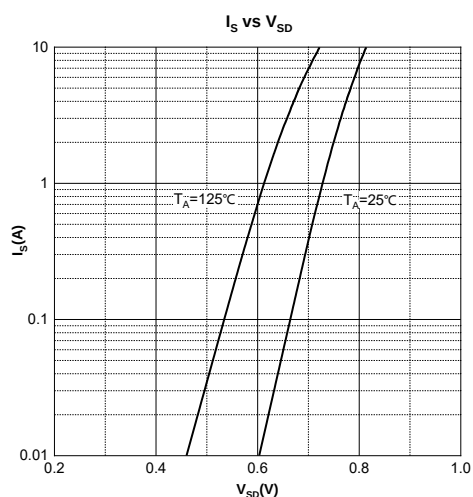
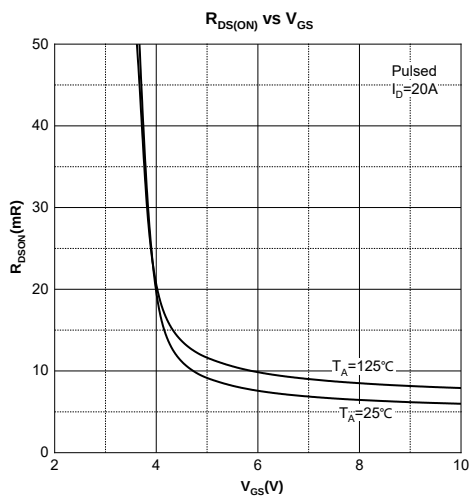
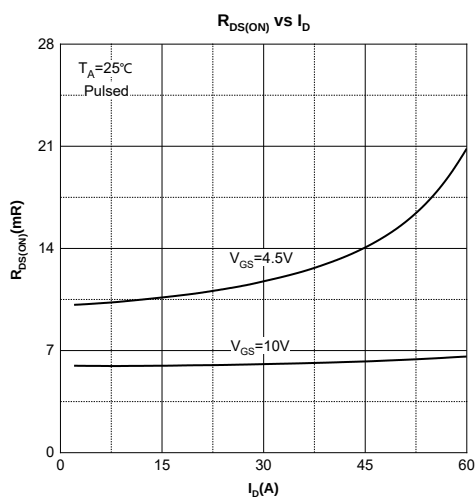
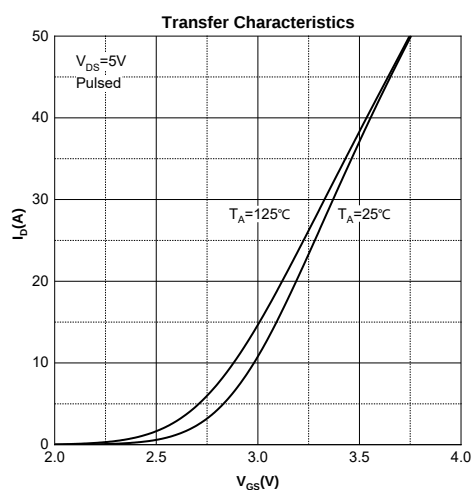
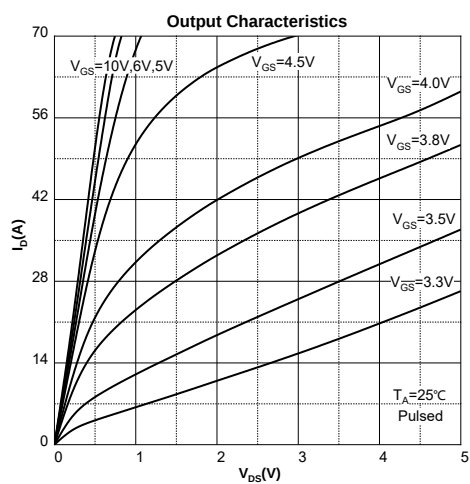
MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

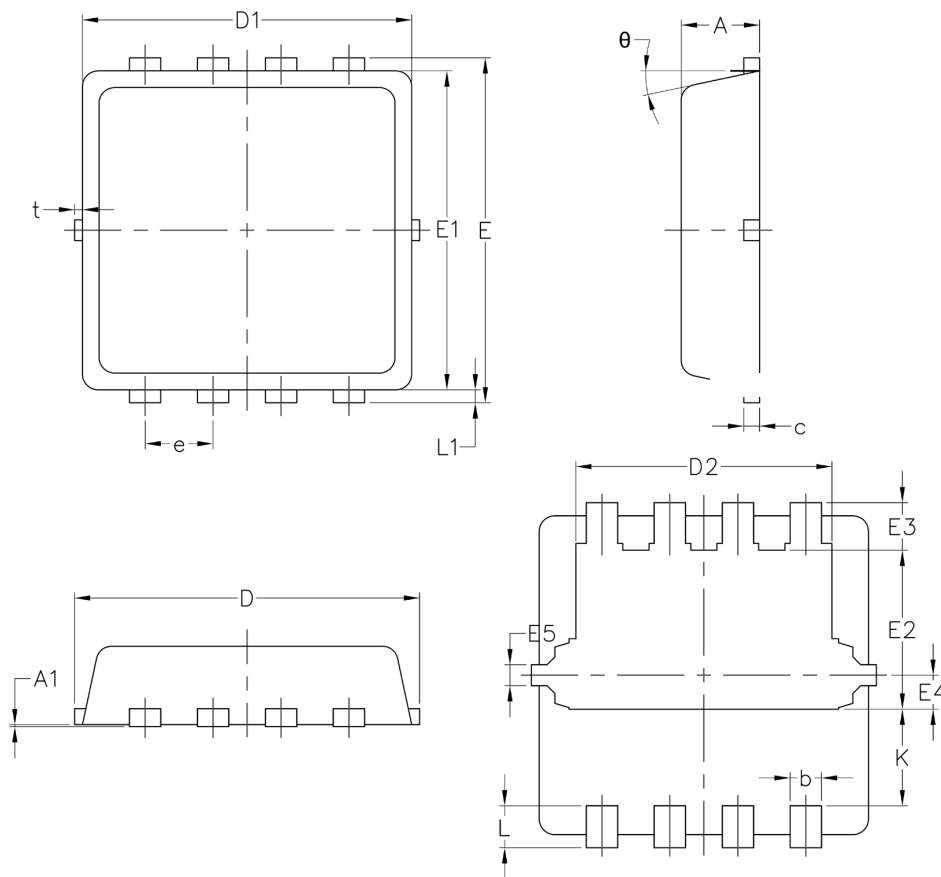
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	40			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 40V, V _{GS} = 0V			1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics ⁴						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1	1.6	3	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 20A		6	7.5	mΩ
		V _{GS} = 4.5V, I _D = 20A		11	14	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 20V, V _{GS} = 0V, f = 1MHz		718		pF
Output Capacitance	C _{oss}			235		
Reverse Transfer Capacitance	C _{rss}			15		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		2		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = 20V, V _{GS} = 10V, I _D = 20A		11		nC
Gate-source Charge	Q _{gs}			2.4		
Gate-drain Charge	Q _{gd}			1.8		
Turn-on Delay Time	t _{d(on)}	V _{DD} = 15V, V _{GS} = 10V, I _D = 1A, R _G = 3.3Ω		15		ns
Turn-on Rise Time	t _r			7		
Turn-off Delay Time	t _{d(off)}			21		
Turn-off Fall Time	t _f			12		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁴	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 ≤ 10μs, duty cycle ≤ 1%.
- 3.EAS condition: V_{DD} = 20V, V_{GS} = 10V, L = 0.5mH, R_G = 25Ω Starting T_J = 25°C.
- 4.Pulse Test : Pulse Width ≤ 400μs, duty cycle ≤ 2%.
- 5.The power dissipation P_D is limited by T_{J(MAX)} = 150°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°C.

Typical Characteristics



PDFN3.3X3.3-8L Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.850	0.028	0.033
A1	0.050MAX		0.002MAX	
b	0.200	0.400	0.008	0.016
c	0.100	0.250	0.004	0.010
D	3.150	3.450	0.124	0.136
D1	3.000	3.250	0.118	0.128
D2	2.290	2.650	0.090	0.104
E	3.150	3.450	0.124	0.136
E1	2.900	3.200	0.114	0.126
E2	1.320	1.720	0.052	0.068
E3	0.280	0.650	0.011	0.026
E4	0.180	0.480	0.007	0.019
E5	0.100	0.300	0.004	0.012
e	0.600	0.700	0.024	0.028
K	0.780	1.130	0.031	0.044
L	0.300	0.500	0.012	0.020
L1	0.060	0.200	0.002	0.008
t	0.000	0.130	0.000	0.005
θ	10°	14°	10°	14°