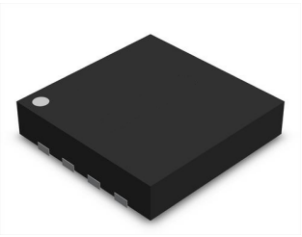
GPT015N04LMA

40V N-Channel MOSFET

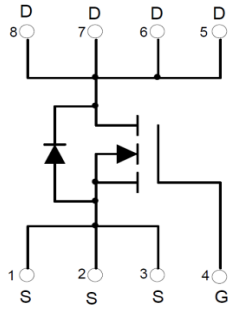
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
40V	1.5mΩ@10V	160A
	2.0mΩ@4.5V	

PLP3.3X3.3-8L



Schematic diagram



Feature

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

Application

- Current Switching in DC/DC & AC/DC (SR) Sub-systems

MARKING:

T015N04L = Device Code

XX = Date Code

Solid Dot = Green Indicater

ABSOLUTE MAXIMUM RATINGS (T_A = 25℃ 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℃	I_D	160	A
	T_C = 100℃	I_D	101	A
Pulsed Drain Current[2]		I_{DM}	640	A
Single Pulsed Avalanche Current[3]		I_{AS}	36	A
Single Pulsed Avalanche Energy[3]		E_{AS}	324	mJ
Power Dissipation[5]	T_C = 25℃	P_D	104	W
Thermal Resistance from Junction to Ambient[6]		$R_{\theta JA}$	67	℃/W
Thermal Resistance from Junction to Case		$R_{\theta JC}$	1.2	℃/W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25℃ 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	1.5	3	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 20A		1.5	2	mΩ
		V_{GS} = 4.5V, I_D = 10A		2	3	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = 20V, V_{GS} = 0V, f = 1MHz		3280		pF
Output Capacitance	C_{oss}			1058		
Reverse Transfer Capacitance	C_{rss}			73		
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz		3.5		Ω
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS} = 30V, V_{GS} = 10V, I_D = 20A		54.4		nC
Gate-Source Charge	Q_{gs}			8.0		
Gate-Drain Charge	Q_{gd}			9.7		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 20V, V_{GS} = 10V, I_D= 20A, R_G = 1.6Ω		10		ns
Turn-On Rise Time	t_r			5		
Turn-Off Delay Time	$t_{d(off)}$			45		
Turn-Off Fall Time	t_f			10		
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%.

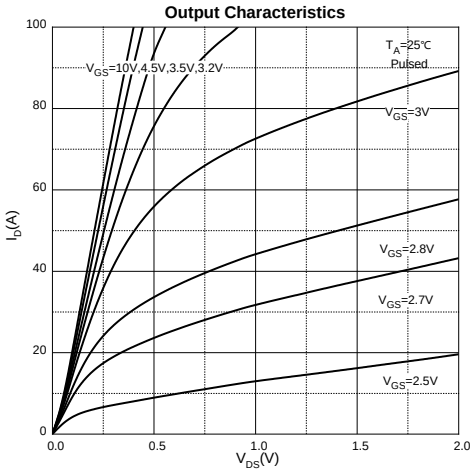
3.E_{AS} condition: V_{DD} = 20V, V_{GS} = 10V, L = 0.5mH, R_G = 25Ω Starting T_J = 25°C.

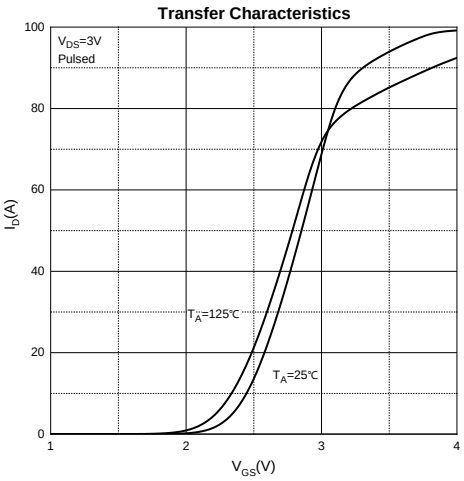
4.Pulse Test: Pulse Width ≤ 300μs, duty cycle ≤ 2%.

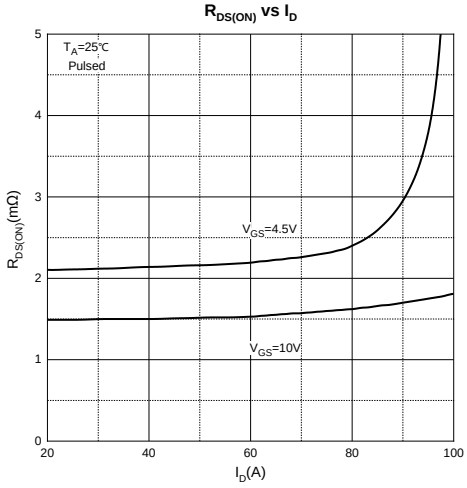
5.The power dissipation P_D is limited by $T_{J(MAX)}$ = 150°C. And device mounted on a large heatsink.

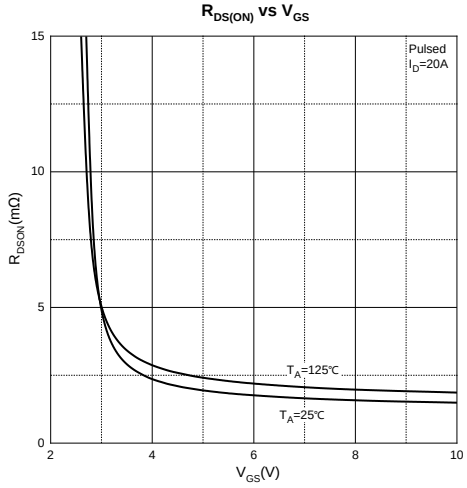
6.Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

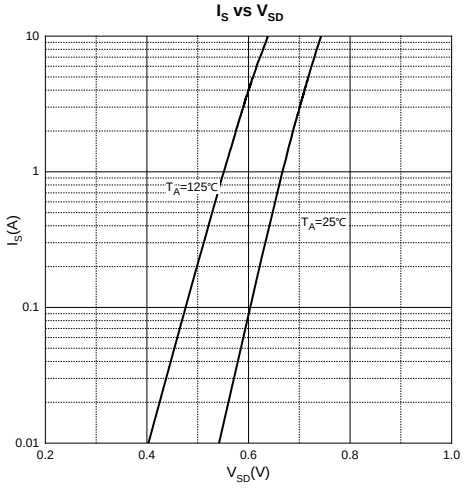
Typical Characteristics

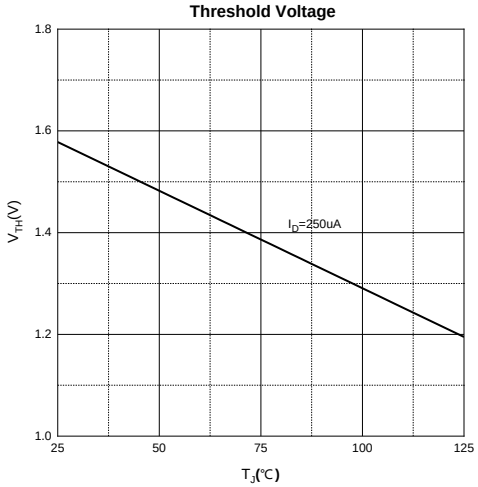




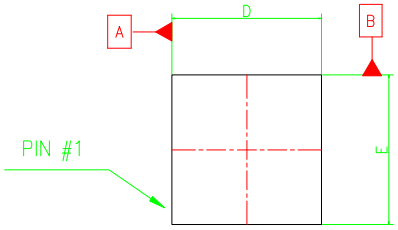




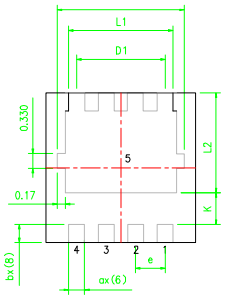




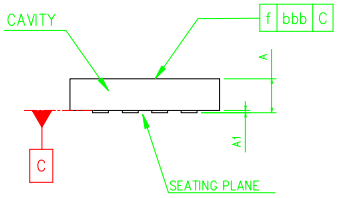
PLP3.3X3.3-8L Package Information



Top View



Bottom View



Side View

symbol	Dimension in mm		
	MIN	NOM	MAX
A	0.650	0.700	0.750
A1	0.025	0.050	0.075
D	3.200	3.300	3.400
E	3.200	3.300	3.40
D1	--	1.950	--
e	--	0.650	--
ax(6)	0.300	0.350	0.400
bx(8)	0.350	0.400	0.450
L1	2.250	2.300	2.350
L2	2.150	2.200	2.250
L3	2.750	2.800	2.850
K	0.600	0.700	0.800
bbb	0.100		
N	5		
MD/ME	4/2		

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