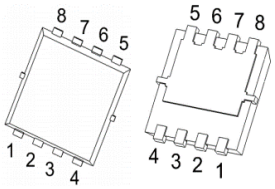
GPM065N03SNA

30V N-Channel MOSFET

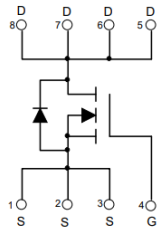
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	5.5mΩ@10V	50A
	6.5mΩ@4.5V	
	13.9mΩ@2.5V	

PDFN3.3X3.3-8L



Schematic diagram



Feature

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

Application

- Power Switching Application

MARKING:

M065N03S = 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}	30	V
Gate - Source Voltage		V_{GS}	±20	V
Continuous Drain Current[1]	T_C = 25℃	I_D	50	A
	T_C = 100℃	I_D	33	A
Pulsed Drain Current[2]		I_{DM}	200	A
Single Pulsed Avalanche Current[3]		I_{AS}	19	A
Single Pulsed Avalanche Energy[3]		E_{AS}	90	mJ
Power Dissipation[5]	T_C = 25℃	P_D	25	W
Thermal Resistance from Junction to Ambient[6]		$R_{\theta JA}$	35	℃/W
Thermal Resistance from Junction to Case		$R_{\theta JC}$	5	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature		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	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} = ±12V, V_{DS} = 0V			±100	nA
On Characteristics[4]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.5	1.1	1.5	V
Drain-source On-resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 10A		5.5	7.2	mΩ
		V_{GS} = 4.5V, I_D = 10A		6.5	9.5	
		V_{GS} = 2.5V, I_D = 10A		13.9	21	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz		1187		pF
Output Capacitance	C_{oss}			139		
Reverse Transfer Capacitance	C_{rss}			127		
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz		1.6		Ω
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS} = 20V, V_{GS} = 10V, I_D = 10A		30		nC
Gate-source Charge	Q_{gs}			2.3		
Gate-drain Charge	Q_{gd}			6.8		
Turn-on Delay Time	$t_{d(on)}$	V_{DD} = 15V, V_{GS} = 10V, R_L = 0.75Ω, R_G = 3Ω		6		ns
Turn-on Rise Time	t_r			3		
Turn-off Delay Time	$t_{d(off)}$			15		
Turn-off Fall Time	t_f			4		
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%.

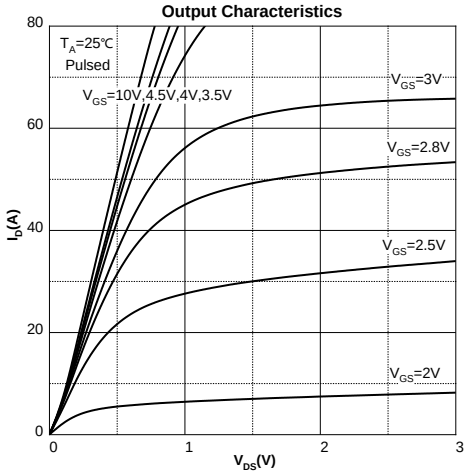
3.E_{AS} condition: V_{DD} = 15V,V_{GS} = 10V, L = 0.5mH, R_G = 25Ω Starting T_J = 25°℃.

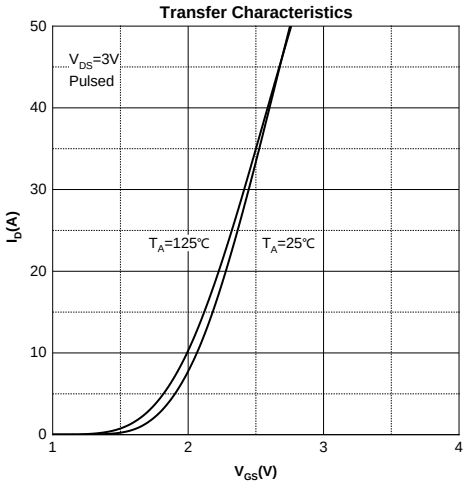
4.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.

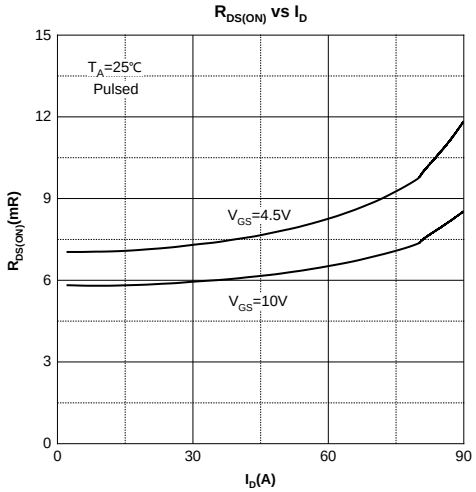
5.The power dissipation P_D is limited by $T_{J(MAX)}$ = 150°C.And device mounted on a large heatsink

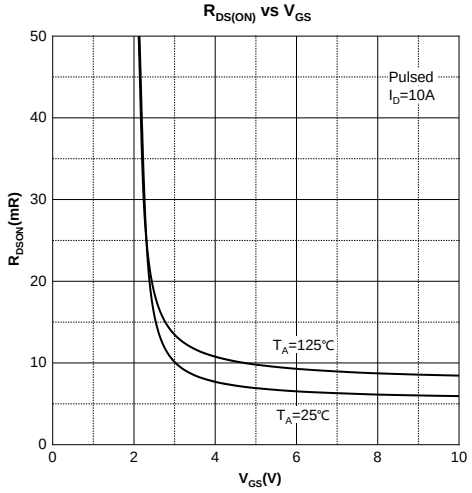
6.Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

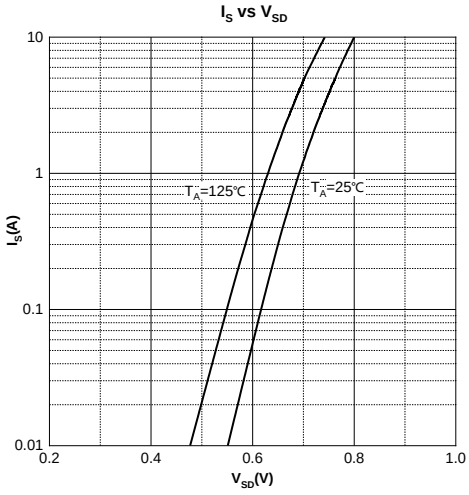
Typical Characteristics

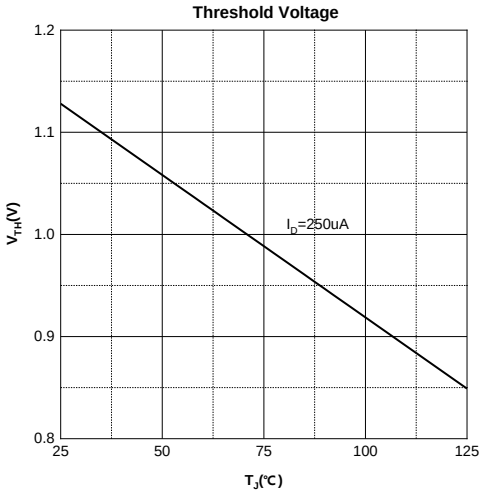




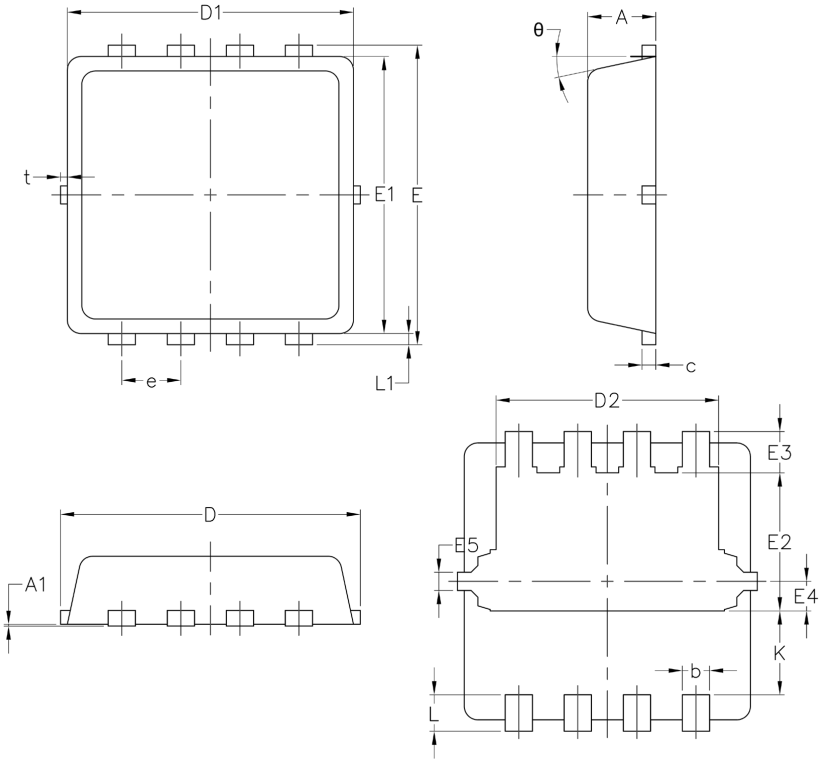








PDFN3.3X3.3-8L Package Information



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°