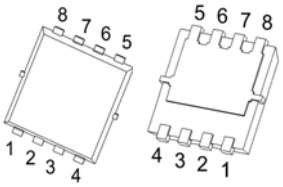
GP18P07P33

18V P-Channel MOSFET

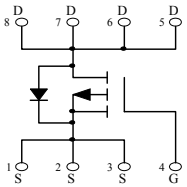
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-18V	5.6mΩ@-4.5V	-34A
	6.0mΩ@-3.7V	
	7.0mΩ@-2.5V	
	10mΩ@-1.8V	

PDFN3.3×3.3-8L



Schematic diagram



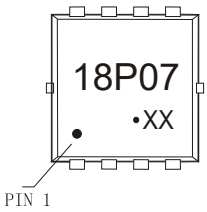
Feature

- High cell density trenched P-ch MOSFETs
- Super low gate charge
- Advanced high cell density Trench technology

Application

- Battery protection applications
- Load switch

MARKING:



18P07 = 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}	-18	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current[1]	I_D	-34	A
Pulsed Drain Current[1]	I_{DM}	-102	A
Power Dissipation[2]	P_D	3	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	42	℃/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
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-18			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-16V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =± 12V, V_{DS} = 0V			±100	nA
Gate threshold voltage[3]	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.35	-0.5	-1	V
Drain-source on-resistance[3]	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-10A		5.6	7.3	mΩ
		V_{GS} =-3.7V, I_D =-10A		6.0	7.8	
		V_{GS} =-2.5V, I_D =-8A		7.0	9.4	
		V_{GS} =-1.8V, I_D =-6A		10	15	
Forward tranconductance[3]	g_{FS}	V_{DS} =-6V, I_D =-10A	5			S
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS} =-6V,V_{GS} =0V,f =1MHz		4850		pF
Output Capacitance	C_{oss}			1520		
Reverse Transfer Capacitance	C_{rss}			1610		
Gate resistance	R_g	f =1MHz			30	Ω
Total Gate Charge	Q_g	V_{DS} =-6V,V_{GS} =-4.5V,I_D=-5A		65		nC
Gate-Source Charge	Q_{gs}			20		
Gate-Drain Charge	Q_{gd}			325		
Turn-on delay time	$t_{d(on)}$	V_{DD}=-6V,V_{GEN}=-4.5V,I_D=-4A R_L=6Ω,R_{GEN}=1Ω		22		ns
Turn-on rise time	t_r			50		
Turn-off delay time	$t_{d(off)}$			100		
Turn-off fall time	t_f			30		
Source-Drain Diode characteristics						
Diode forward current[4]	I_S	T_C=25℃			-34	A
Diode pulsed forward curren[4]	I_{SM}				-102	A
Diode Forward voltage[3]	V_{DS}	V_{GS} =0V, I_S=-10A			-1.2	V

Notes:

1.Device mounted on FR-4 substrate board, with minimum recommended pad layout, single side.

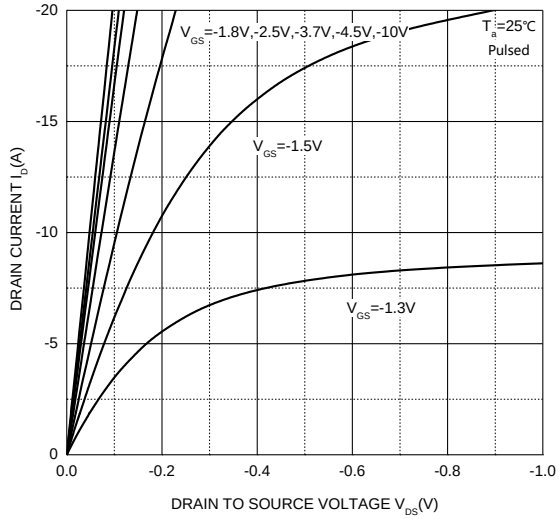
2.The power dissipation is limited by 150℃ junction temperature

3.Pulse Test : Pulse width≤300μs, duty cycle≤2%.

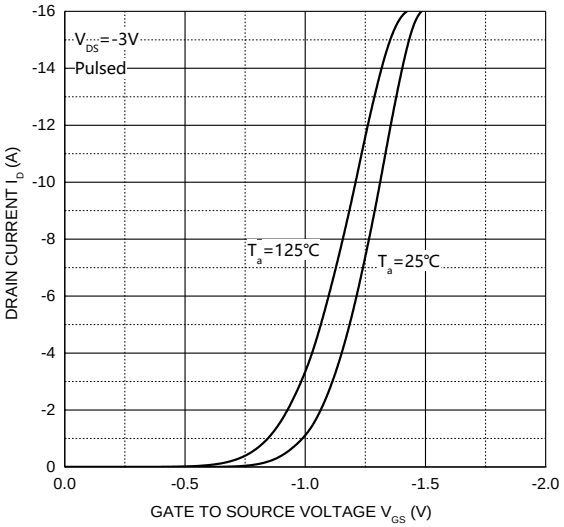
4.The data is theoretically the same as I_D, in real applications , should be limited by total power dissipation.

Typical Electrical and Thermal Characteristics

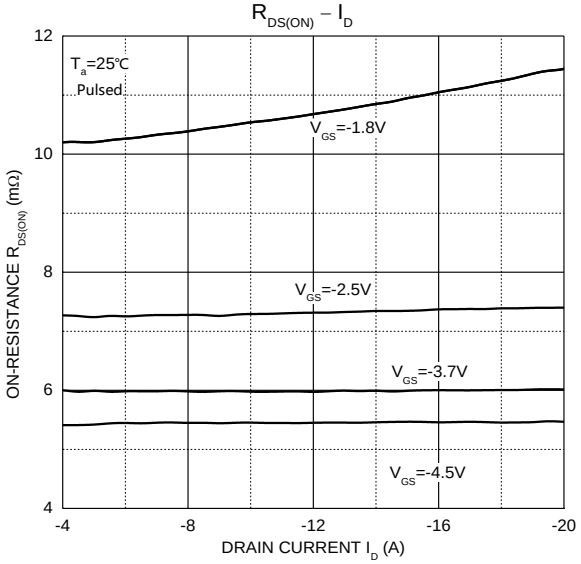
Output Characteristics



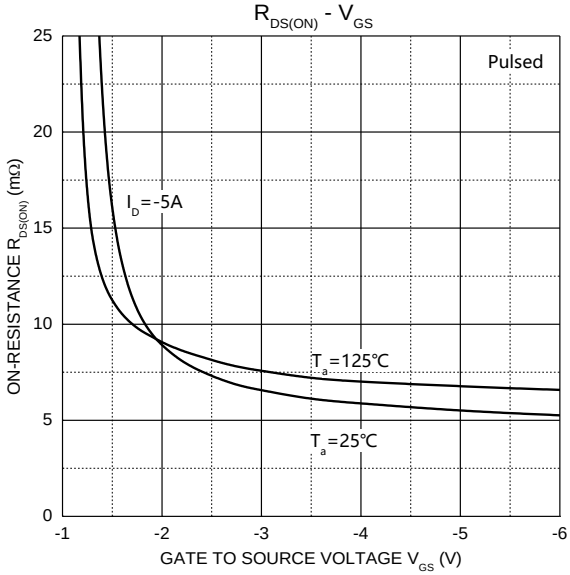
Transfer Characteristics



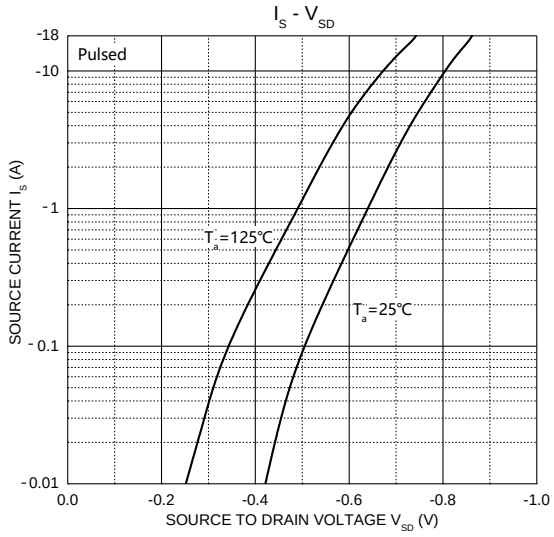
$R_{DS(ON)}$ – I_D



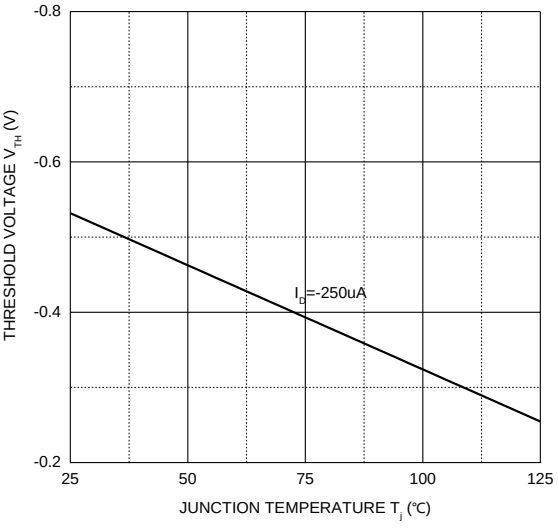
$R_{DS(ON)}$ - V_{GS}



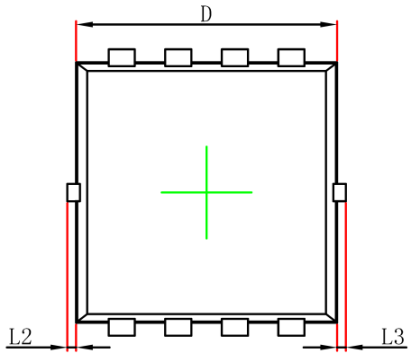
I_S - V_{SD}



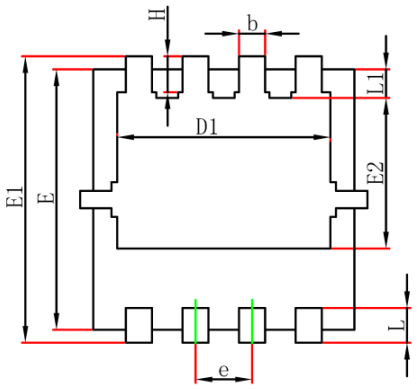
Threshold Voltage



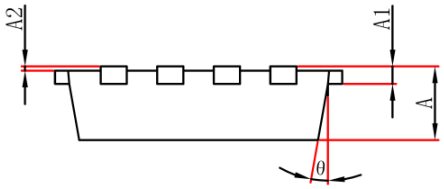
PDFN3.3×3.3-8L Package Information



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.152REF		0.006REF	
A2	0.000	0.050	0.000	0.002
D	2.900	3.200	0.114	0.126
D1	2.300	2.600	0.091	0.102
E	2.900	3.200	0.114	0.126
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0.000	0.100	0.000	0.004
L3	0.000	0.100	0.000	0.004
H	0.315	0.515	0.012	0.020
θ	0°	12°	0°	12°