WP3407DP3

Enhancement Mode P-Channel Power MOSFET

PDFN3x3/PMOS/-30V/±20V/-1.7V/-7A/34mΩ

Rev0.6

-30V, 34mΩ, -7A, P-Channel MOSFET

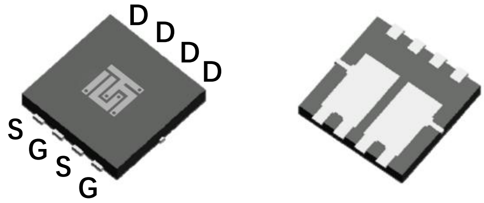
1.Features

- Advanced Trench Technology
- Surface mount package

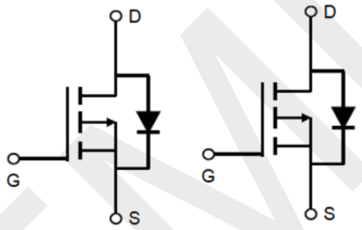
V_{DS}	$R_{DS(on)}$ Typ.	I_D.
-30V	34mΩ @ -10V	-7A
	47mΩ @ -4.5V	

2.Applications

- Power Management
- Load Switching



PDFN3x3
Pin Description



Schematic Diagram

3.Package Marking and Ordering Information

Part no.	Marking	Package	PCS/Reel	PCS/CTN.
WP3407DP3	WP3407DP3	PDFN3X3	5,000	50,000

4.Absolute Max Ratings at Ta=25℃ (Note1)

Parameter	Symbol	Maximum	Units
Drain to Source Voltage	V_{DSS}	-30	V
Gate to Source Voltage	V_{GSS}	±20	V
Drain Current (DC)	I_D	-7	A
Drain Current (Pulse), PW≤300μs	I_{DP}	-28	A
Total Dissipation	P_D	3	W
Junction Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-55 to +150	℃

Note 1: Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

5.Thermal Resistance Ratings (Note 2)

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	41.7	℃/W

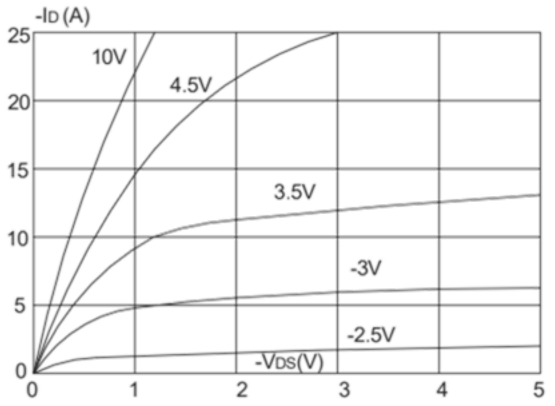
Note 2: When mounted on 1 inch square copper board t ≤ 10sec The value in any given application depends on the user's specific board design.

5.Electrical Characteristics at Ta=25℃ (Note 3)

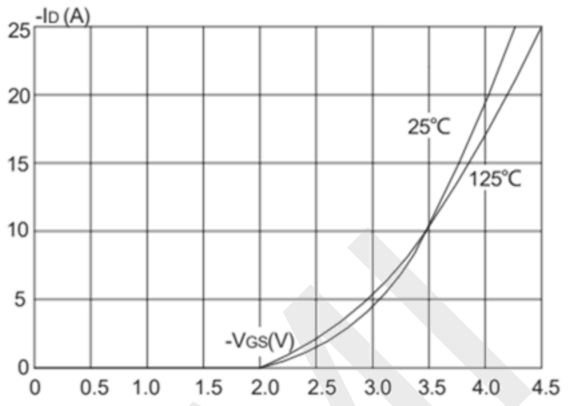
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = -250μA, V_{GS} = 0V	-30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS} = -30V, V_{GS} = 0V			-1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_{DS}=-250μA	-1.0	-1.7	-2.5	V
Static Drain to Source On-State Resistance	$R_{DS(on)}$	I_D =-6.5A, V_{GS} =-10V		34	45	mΩ
		I_D =-4.2A, V_{GS} =-4.5V		47	65	mΩ
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-15V, Frequency=1.0MHz		580		pF
Output Capacitance	C_{oss}			98		pF
Reverse Transfer Capacitance	C_{rss}			74		pF
Turn-ON Delay Time	$t_{d(on)}$	V_{DS} =-15V, I_D =-1A, R_G = 2.5Ω, V_{GS} = -10V		7		ns
Rise Time	t_r			4		ns
Turn-OFF Delay Time	$t_{d(off)}$			18		ns
Fall Time	t_f			13		ns
Total Gate Charge	Q_g	V_{DS} = -15V, V_{GS} = -10V, I_D = -4A		11		nC
	Q_{gs}			1.9		nC
	Q_{gd}			2		nC
Diode Forward Voltage	V_{FSD}	I_S = -6.5A, V_{GS} = 0			-1.2	V

Note 3：Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

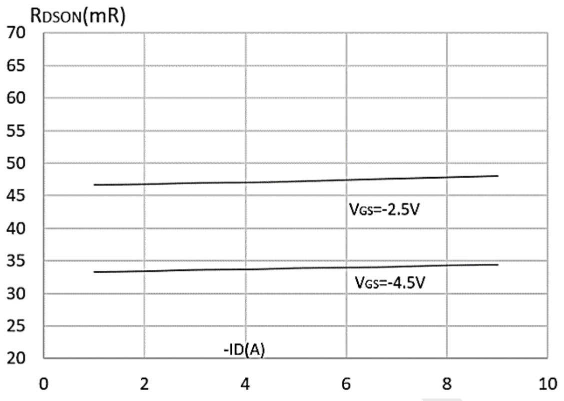
6.Typical Electrical and Thermal Characteristics



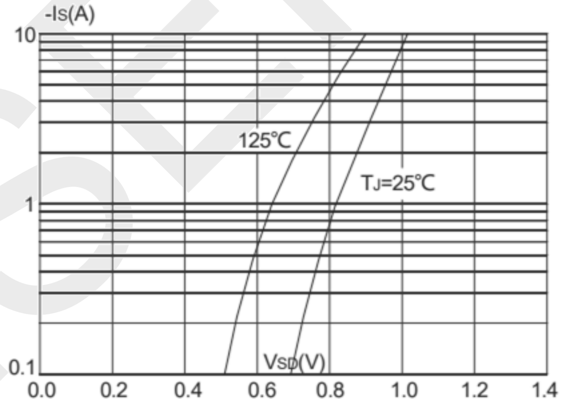
Output Characteristics



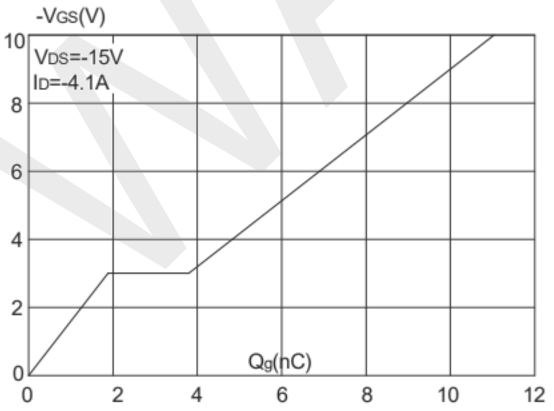
Typical Transfer Characteristics



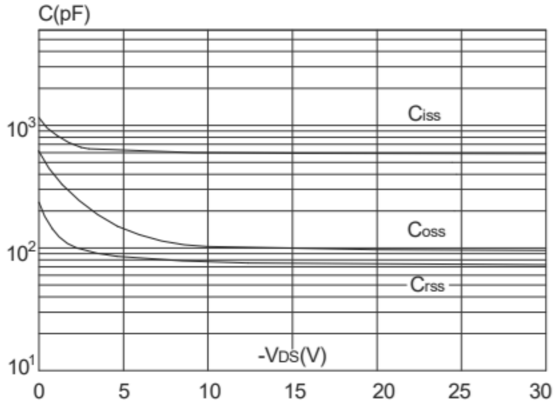
On-resistance vs. Drain Current



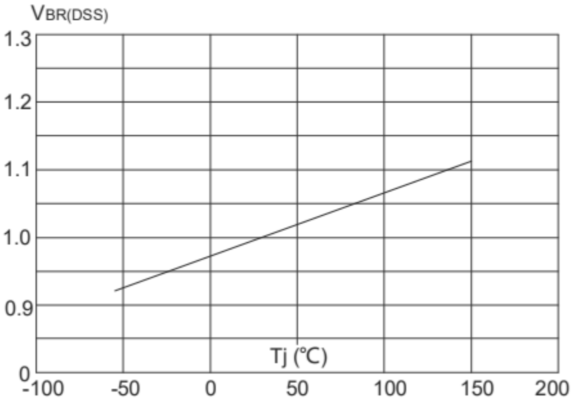
Body Diode Characteristics



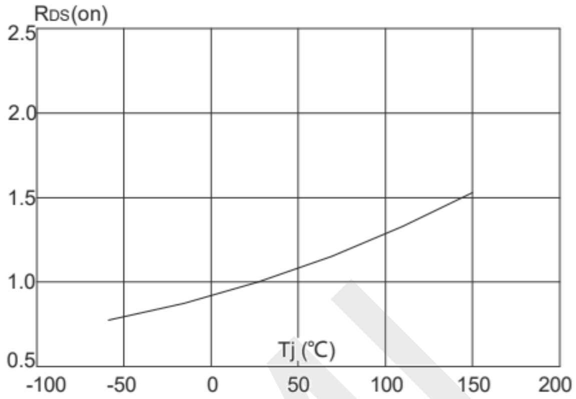
Gate Charge Characteristics



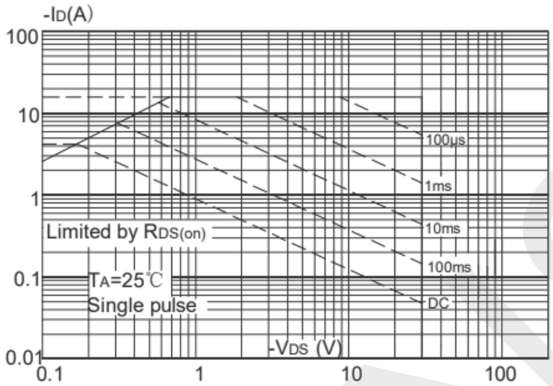
Capacitance Characteristics



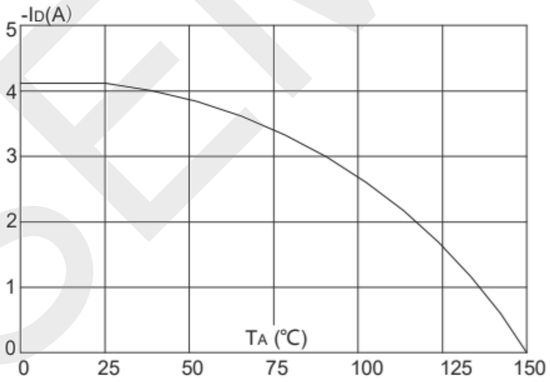
Normalized Breakdown Voltage vs. Junction Temperature



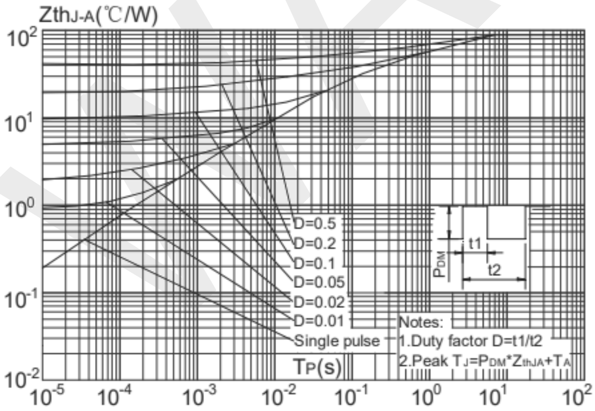
Normalized on Resistance vs.Junction Temperature



Maximum Safe Operating Area

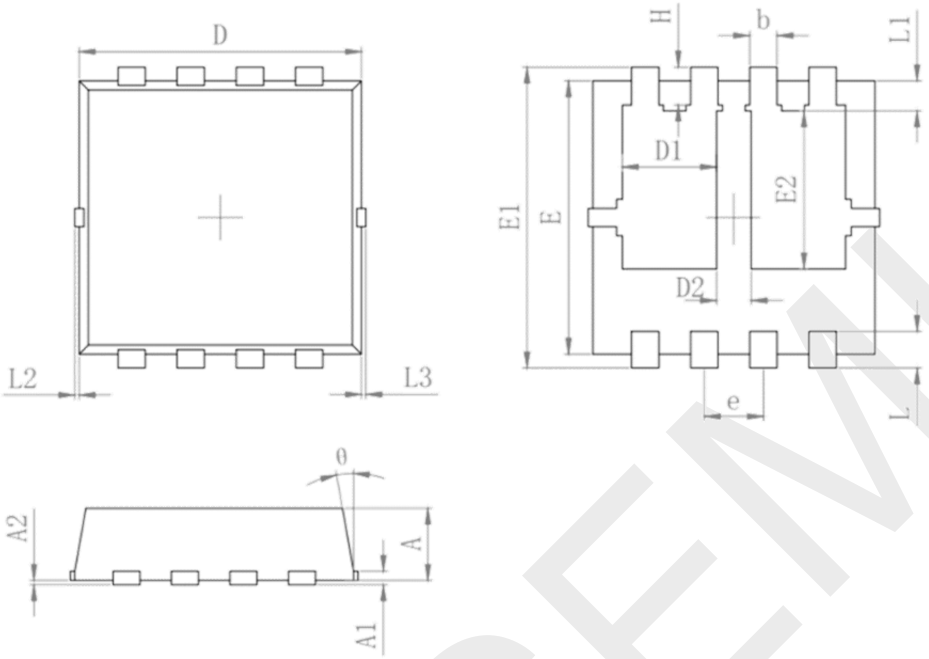


Maximum Continuous Drain Current vs. Ambient Temperature



Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

7.Package Dimensions



SYMBOL	MILLIMETER	
	MIN	MAX
A	0.700	0.900
A1	0.152 REF.	
A2	0~0.05	
D	3.000	3.200
D1	0.935	1.135
D2	0.280	0.480
E	2.900	3.100
E1	3.150	3.450
E2	1.535	1.935
b	0.200	0.400
e	0.550	0.750
L	0.300	0.500
L1	0.180	0.480
L2	0~0.100	
L3	0~0.100	
H	0.315	0.515
θ	8°	12°

8.Important Notice

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