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WP8205AT8

Enhancement Mode N-Channel Power MOSFET

TSSOP8/NMOS/20V/±12V/0.7V/6A/20mΩ

Rev1.6

20V, 20mΩ, 6A, N-Channel MOSFET

1.Features

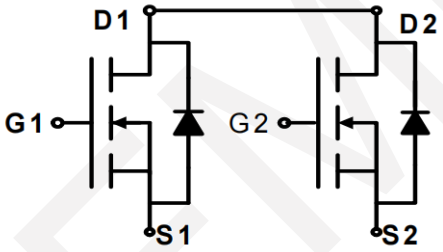
- 20V MOSFET technology
- Low on-state resistance
- Fast switching
- Vgs±12V

V_{DS}	$R_{DS(on)}$ Typ.	I_D Max.
20V	20mΩ @ 4.5V	6A
	24.4mΩ @ 2.5V	

2.Applications

- Power Switching Application
- Load Switching

TSSOP8
Pin Description



Schematic Diagram

3.Package Marking and Ordering Information

Part no.	Marking	Package	PCS/Reel	PCS/CTN.
WP8205AT8	8205A	TSSOP8	5,000	80,000

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

Parameter	Symbol	Maximum	Units
Drain to Source Voltage	V_{DSS}	20	V
Gate to Source Voltage	V_{GSS}	±12	V
Drain Current (DC)	I_D	6	A
Drain Current (Pulse), PW≤300μs	I_{DP}	25	A
Total Dissipation	P_D	1.5	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
Junction to Ambient	$R_{\theta JA}$	83	℃/W

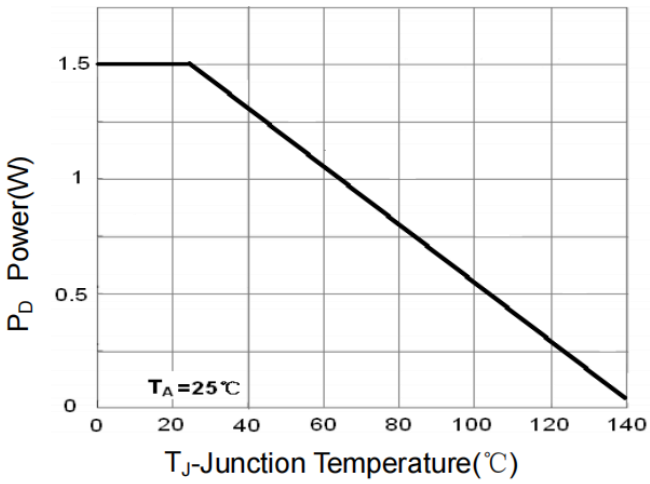
Note 2：When mounted on 1 inch square copper board t ≤ 10sec The value in any given application depends on the user's specific board design.

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

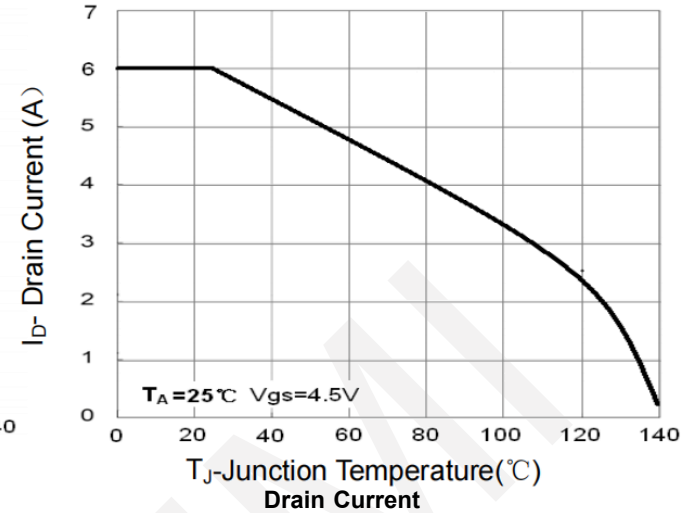
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = 250μA, V_{GS} = 0V	20	-	-	V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS} = 19V, V_{GS} = 0V	-	-	1	uA
Gate to Source Leakage Current	I_{GSS}	V_{GS} = ±12V, V_{SS} = 0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_{DS}=250μA	0.4	0.7	1.1	V
Static Drain to Source On-State Resistance	$R_{DS(on)}$	I_D = 6A, V_{GS} = 4.5V	-	20	23	mΩ
		I_D = 3A, V_{GS} = 2.5V	-	24.4	30	mΩ
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=10V, Frequency=1.0MHz	-	900	-	pF
Output Capacitance	C_{oss}		-	220	-	pF
Reverse Transfer Capacitance	C_{rss}		-	100	-	pF
Turn-ON Delay Time	$t_{d(on)}$	V_{DD} = 10V, I_D = 1A, V_{GS} = 4.5V, R_G = 6Ω	-	10	-	ns
Rise Time	t_r		-	11	-	ns
Turn-OFF Delay Time	$t_{d(off)}$		-	35	-	ns
Fall Time	t_f		-	30	-	ns
Total Gate Charge	Q_g	V_{DS} = 10V, V_{GS} = 4.5V, I_D = 6A	-	12	-	nC
	Q_{gs}		-	2.5	-	nC
	Q_{gd}		-	1.5	-	nC
Diode Forward Voltage	V_{FSD}	I_S = 6A, V_{GS} = 0V	0.4	0.8	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.

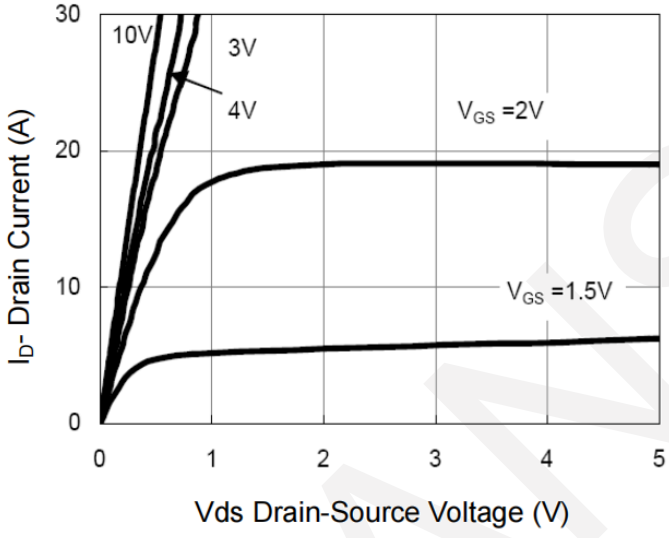
7.Typical electrical and thermal characteristics



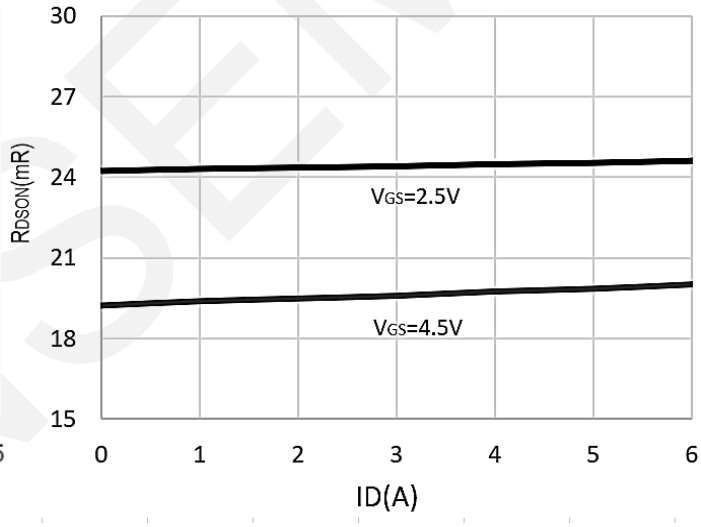
Power Dissipation



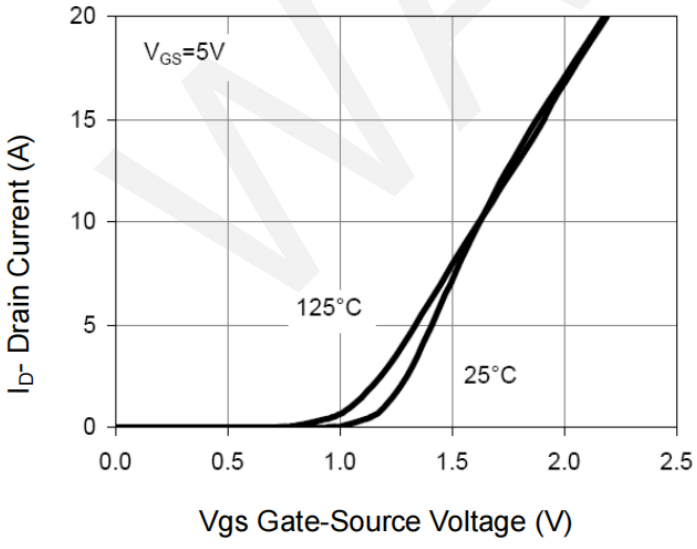
Drain Current



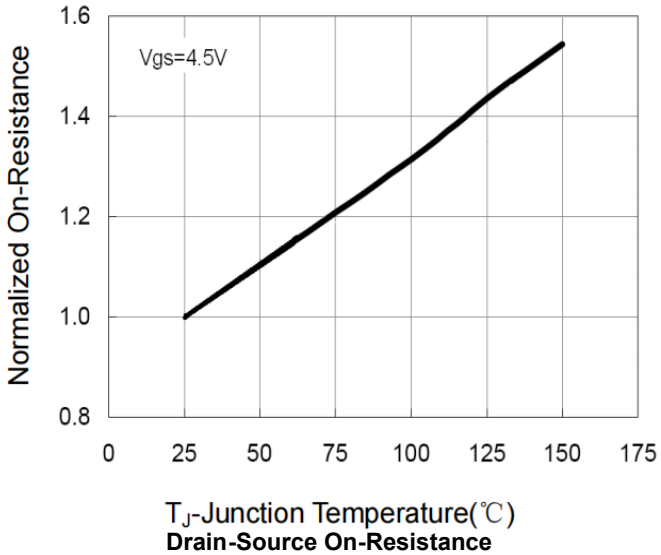
Output Characteristics



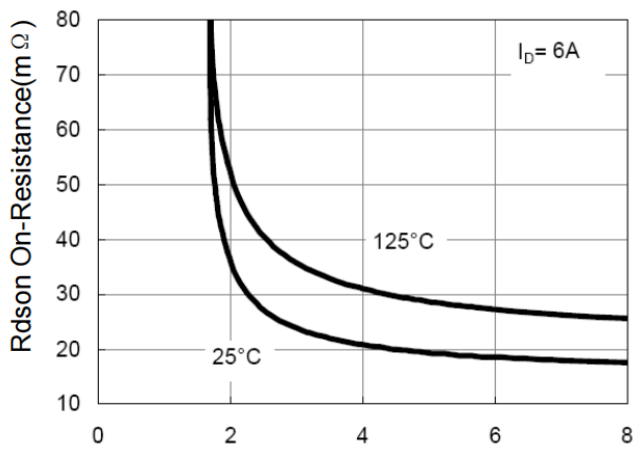
Drain-Source On-Resistance



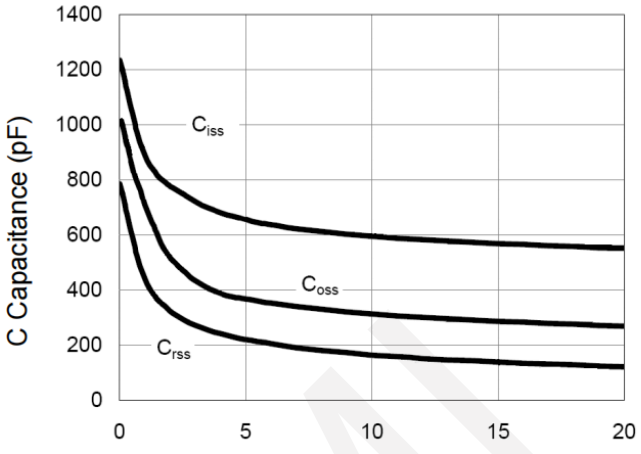
Transfer Characteristics



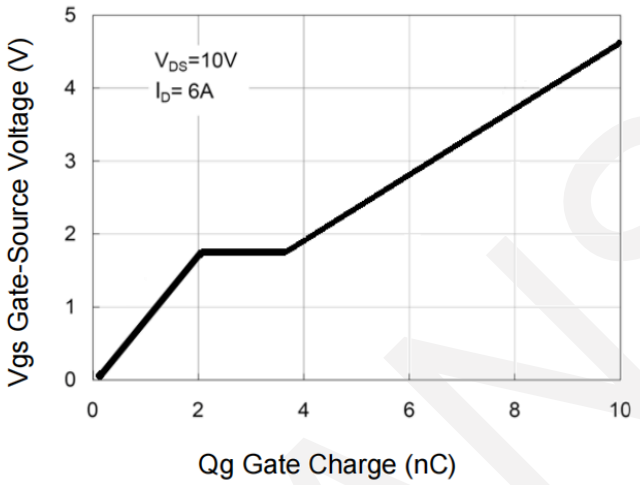
Drain-Source On-Resistance



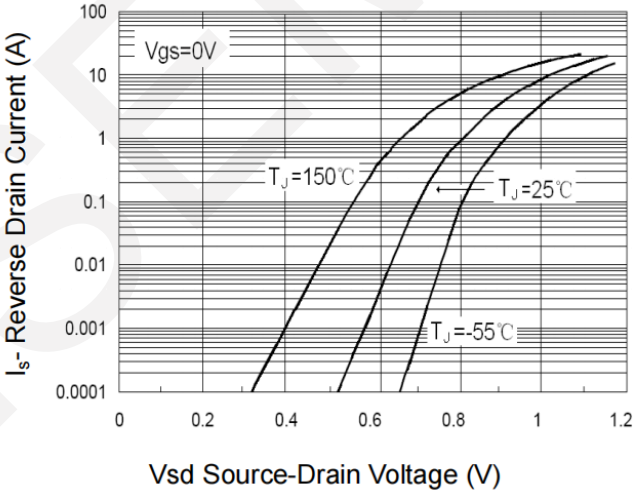
Rdson vs Vgs



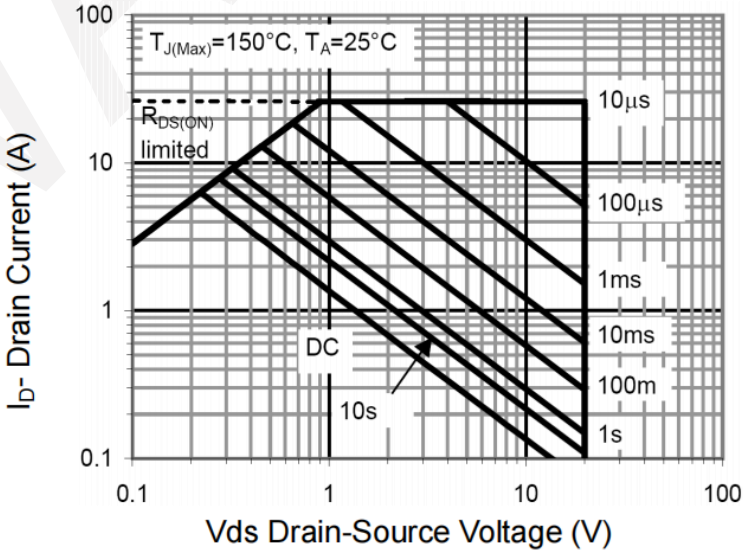
Capacitance vs Vds



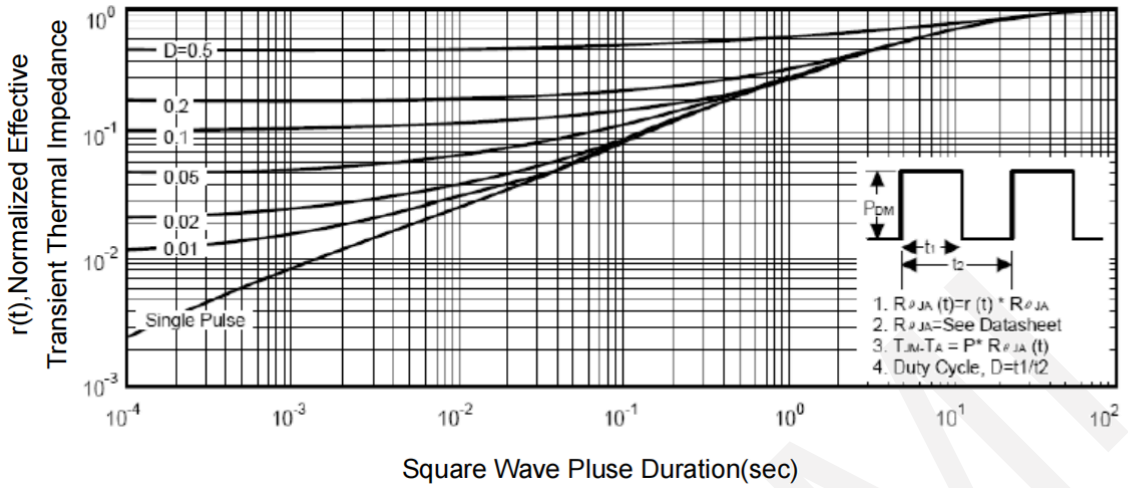
Gate Charge



Source- Drain Diode Forward

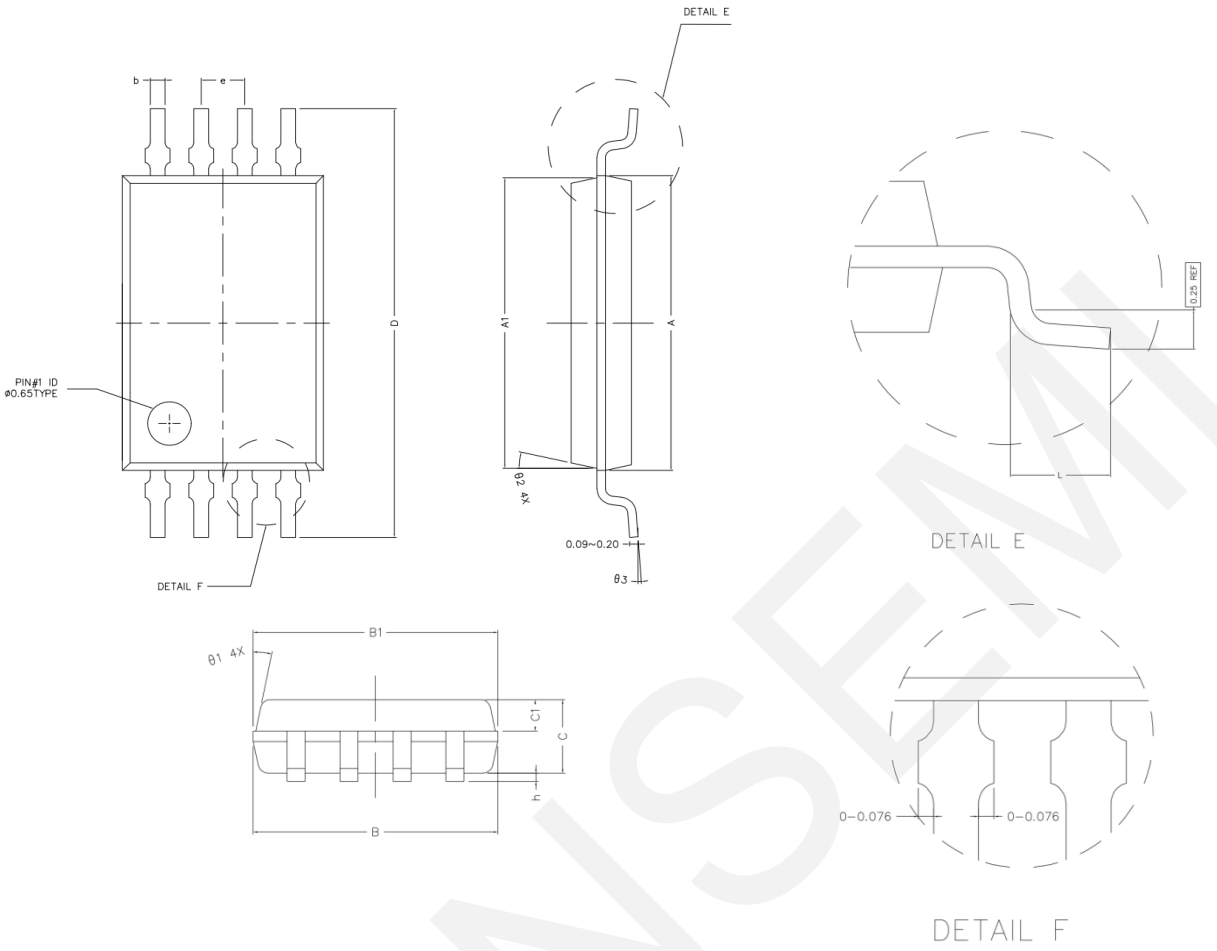


Safe Operation Area



Normalized Maximum Transient Thermal Impedance

8.Package Dimensions



COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A	4.300	4.400	4.500
A1	4.240	4.340	4.440
B	3.050	3.150	3.250
B1	2.840	2.940	3.040
⚠B C	0.850	0.900	0.950
C1	0.337	0.387	0.437
D	6.250	6.400	6.550
L	0.450	0.600	0.750
b	0.170	0.220	0.300
⚠B h	0.050	0.100	0.150
e	0.650TYPE		
θ_1	12° TYPE		
θ_2	12° TYPE		
θ_3	0° ~ 7°		

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