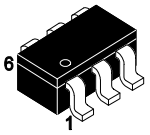
DN8205F

N-Channel Enhancement Mode Power MOSFET



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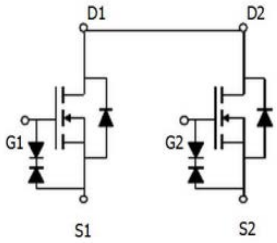
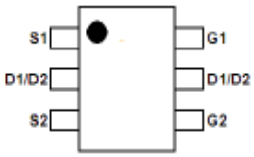




1. FEATURES

- VDS = 20V,ID=6.5A
- RDS(ON)≤15mΩ,VGS=4.5V,IDS=6A
- RDS(ON)≤22.5mΩ,VGS=2.5V,IDS=3A
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- High power and current handing capability
- Lead free product is acquired
- Surface mount package

2. APPLICATIONS

- Battery protection
- Load switch
- Power management

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
DN8205F	211	3000/Tape&Reel

4. Absolute Maximum Ratings (TA =25 ℃unless otherwise noted)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDS	20	V
Gate–Source Voltage	VGS	±10	V
Drain Current-Continuous	ID	6.5	A
Drain Current-Pulsed (Note1)	IDM	26	A
Maximum Power Dissipation	PD	1.5	W
Operating Junction and Storage Temperature Range	TJ ,TSTG	-55 ~ +150	℃

Note:1. Repetitive Rating: Pulse width limited by maximum junction temperature.

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Thermal Resistance,Junction-to-Ambient (Note 2)	RθJA	83	℃/W

Note:2. Surface Mounted on FR4 Board, t ≤ 10 sec.

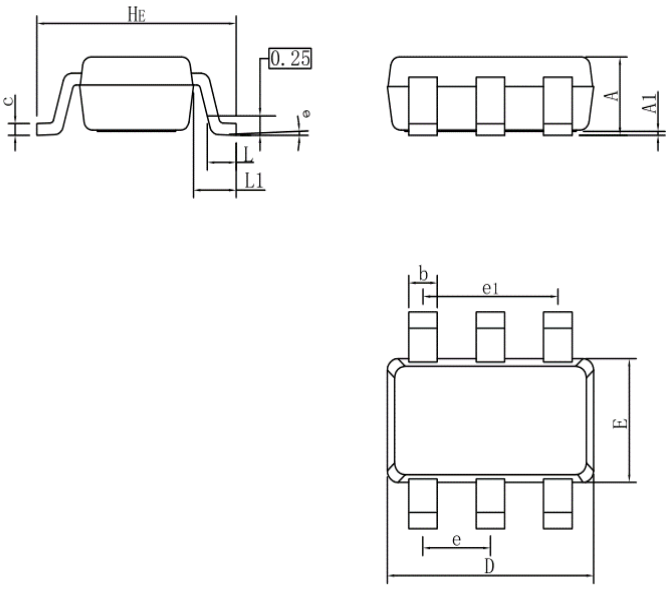
6. ELECTRICAL CHARACTERISTICS (Ta= 25ºC)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Off Characteristics					
Drain-Source Breakdown Voltage (VGS =0V ID =250μA)	BVDSS	20	-	-	V
Zero Gate Voltage Drain Current (VDS =16V,VGS =0V)	IDSS	-	-	1	μA
Gate-Body Leakage Current (VGS =± 10V,VDS =0V)	IGSS	-	-	±10	μA
On Characteristics (Note 3)					
Gate Threshold Voltage (VDS =VGS ,ID =250μA)	VGS(th)	0.5	0.7	1.2	V
Drain-Source On-State Resistance (VGS =4.5V, ID =6A) (VGS =3.1 V, ID =5A) (VGS =2.5V, ID =3A)	RDS(ON)	- - -	13 14 16.5	15 17 22.5	mΩ mΩ mΩ
Forward Transconductance (VDS =5V,ID =4.5A)	gFS	-	10	-	S
Dynamic Characteristics (Note4)					
Input Capacitance (VDS =10V,VGS =0V,F=1.0MHz)	Clss	-	1300	-	PF
Output Capacitance (VDS =10V,VGS =0V,F=1.0MHz)	Coss	-	290	-	PF
Reverse Transfer Capacitance (VDS =10V,VGS =0V,F=1.0MHz)	Crss	-	150	-	PF
Switching Characteristics (Note 4)					
Turn-on Delay Time (VDD =10V,ID =1A VGS =4.5V,RGEN =6Ω)	td(on)	-	30	-	nS
Turn-on Rise Time (VDD =10V,ID =1A VGS =4.5V,RGEN =6Ω)	tr	-	21	-	nS
Turn-Off Delay Time (VDD =10V,ID =1A VGS =4.5V,RGEN =6Ω)	td(off)	-	75	-	nS
Turn-Off Fall Time (VDD =10V,ID =1A VGS =4.5V,RGEN =6Ω)	tf	-	40	-	nS
Total Gate Charge (VDS =10V,ID =6A, VGS =4.5V)	Qg	-	12	-	nC
Gate-Source Charge (VDS =10V,ID =6A, VGS =4.5V)	Qgs	-	2.3	-	nC
Gate-Drain Charge (VDS =10V,ID =6A, VGS =4.5V)	Qgd	-	1	-	nC
Drain-Source Diode Characteristics					
Turn-On Delay Time (VGS =0V,IS =1.0A)	VSD	-	0.75	1.5	V
Diode Forward Current (Note2)	IS	-	-	1.0	A

Note: 3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

4. Guaranteed by design, not subject to production

7.OUTLINE AND DIMENSIONS



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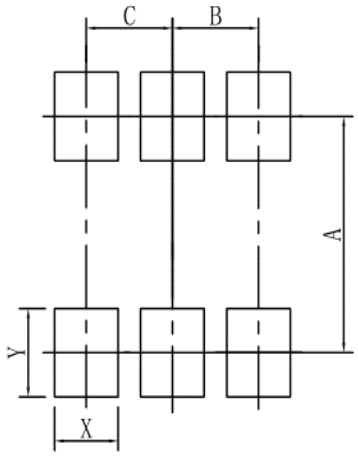
DIM	MIN	NOR	MAX
A	0.90	1.00	1.10
A1	0.01	0.06	0.10
b	0.30	0.40	0.50
c	0.10	0.17	0.20
D	2.80	2.90	3.00
E	1.50	1.60	1.70
e	0.85	0.95	1.05
e1	1.80	1.90	2.00
L	0.20	0.40	0.60
L1	0.60REF		
HE	2.60	2.80	3.00
θ	0 °	-	10°

8.SOLDERING FOOTPRINT



SOT23-6L	
DIM	(mm)
X	0.70
Y	0.90
A	2.40
B	0.95
C	0.95