TECH PUBLIC
台舟电子

FS8205A

Dual N-Channel Enhancement Power Mosfet

www.sot23.com.tw

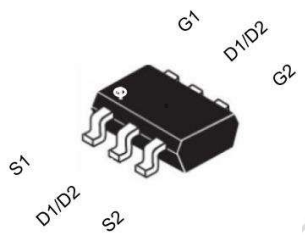
Product Summary

- V_{DS} = 20V,ID =6A
  $R_{DS(ON)}$,19.5mΩ (Typ) @ VGS =4.5V
  $R_{DS(ON)}$, 25mΩ (Typ) @ VGS =2.5V
- Trench Power Technology
- Low RDS(ON)
- Low Gate Charge
- Optimized for Fast-switching Applications

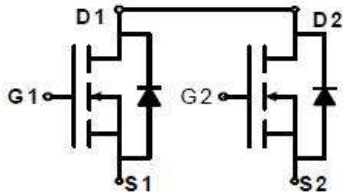
Application

- Synchronous Rectification in DC/DC and AC/DC Converters
- Isolated DC/DC Converters in Telecom and Industrial

Package and Pin Configuration



Circuit diagram



TECHPUBLIC

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±10	V
Drain Current-Continuous[Note3]	TC=25℃	I_D	6	A
	TC=70℃		4.8	A
Drain Current-Pulsed[Note1]		I_{DM}	24	A
Avalanche Energy[Note4]		E_{AS}	7.4	mJ
Maximum Power Dissipation	TC=25℃	P_D	1.5	W
Storage Temperature Range		T_{STG}	-55 to +150	℃
Operating Junction Temperature Range		T_J	-55 to +150	℃

Thermal Resistance

Parameter	Symbol	Min.	Typ.	Max	Unit
Thermal Resistance,Junction-to-Case	$R_{\theta JC}$	-	14.4	-	℃/W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	-	83	-	℃/W

Electrical Characteristics (T_A = 25°C unless otherwise noted)

OFF CHARACTERISTICS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_{DS}=250uA	20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V,V_{GS}=0V	-	-	1	uA
Gate-Body Leakage	I_{GSS}	V_{GS}=±10V,V_{DS}=0V	-	-	±100	nA

ON CHARACTERISTICS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Gate Threshold Voltage	VGS(TH)	V_{DS}=V_{GS},I_{DS}=250uA	0.5	0.7	1.2	V
Drain-Source On-State Resistance	RDS(ON)	V_{GS}=4.5V,I_{DS}=3A	-	19.5	25	mΩ
		V_{GS}=2.5V,I_{DS}=3A	-	25	31.5	

DYNAMIC CHARACTERISTICS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input Capacitance	C_{iss}	VDS =10V, VGS = 0V, f=1MHz	-	466	-	pF
Output Capacitance	C_{oss}		-	65	-	
Reverse Transfer Capacitance	C_{rss}		-	58	-	

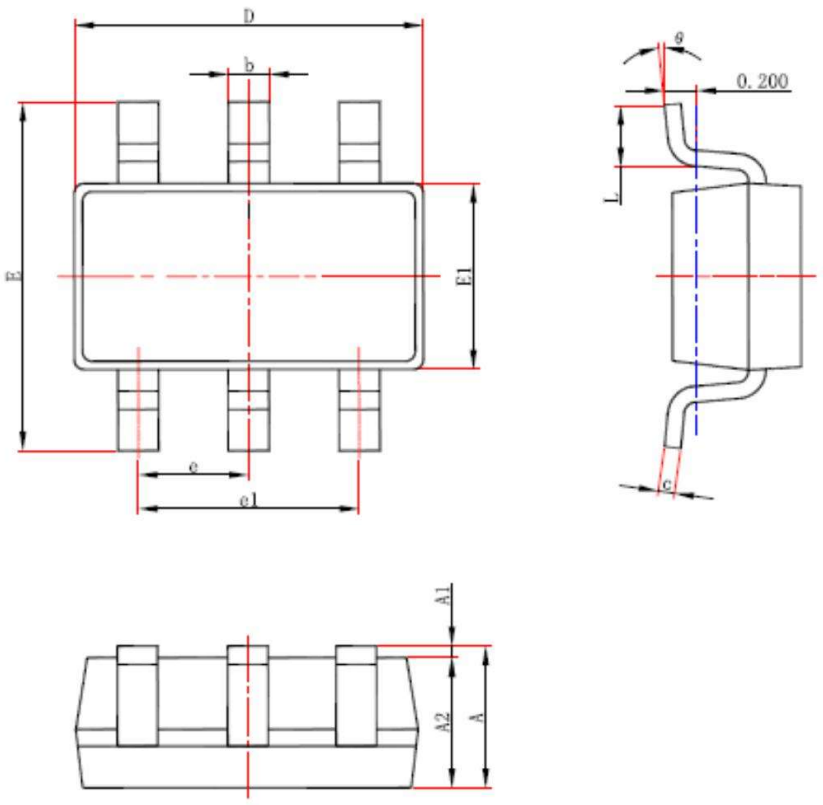
SWITCHING CHARACTERISTICS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Turn-On Delay Time	$T_{d(on)}$	V_{GS}=4.5V,V_{Ds}=10V, R_{GEN}=2.5Ω I_D=6A	-	15	-	ns
Rise Time	t_r		-	17	-	
Turn-Off Delay Time	$T_{d(off)}$		-	42	-	
Fall Time	t_f		-	10	-	
Total Gate Charge at 10V	Q_g	V_{DS}=10V,I_{DS}=6A, V_{GS}=10V	-	5.7	-	nC
Gate to Source Gate Charge	Q_{gs}		-	0.8	-	
Gate to Drain“Miller”Charge	Q_{gd}		-	1.4	-	

DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_{DS}=6A	-	-	1.2	V

TECHPUBLIC

台舟电子版权所有

SOT23-6 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°