20V Dual N-Channel Mosfet

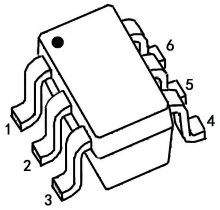
FEATURES

- $R_{DS(ON)}$ ≤ 21.5mΩ(19.8mΩ Typ.) @V_{GS}=4.5V
- $R_{DS(ON)}$=27.5mΩ(24.0mΩ Typ.) @V_{GS}=2.5V

APPLICATIONS

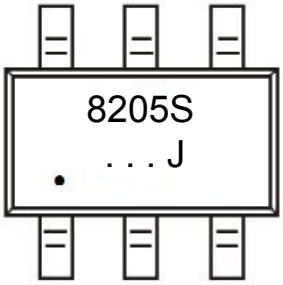
- Load Switch for Portable Devices
- Battery Protection
- Power Management

SOT-23-6L

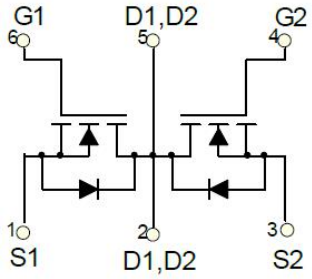


1: S1	3: S2	5: D1/D2
2: D1/D2	4: G2	6: G1

MARKING



N-CHANNEL MOSFET



MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	±12	
I_D	Continuous Drain Current	4.8	A
I_{DM}	Pulsed Drain Current	12	
P_D	Maximum Power Dissipation	1.25	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient(t ≤5s)	357	℃/W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55 ~+150	

MOSFET ELECTRICAL CHARACTERISTICS Ta=25 °C unless otherwise specified

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
Static						
$V_{(BR)DSS}$	Drain-source breakdown voltage	VGS = 0V, ID =250μA	20	21.6		V
$V_{GS(th)}$	Gate-source threshold voltage	VDS =VGS, ID =250μA	0.5	0.72	1.0	
I_{GSS}	Gate-source leakage	VDS =0V, VGS =±12V			±100	nA
I_{DSS}	Zero gate voltage drain current	VDS =19V, VGS =0V			1	μA
$R_{DS(on)}$	Drain-source on-state resistance note1	VGS =4.5V, ID =4.8A		19.8	21.5	mΩ
		VGS =2.5V, ID =4A		24	27.5	
V_{SD}	Body diode voltage	IS=1.7A		0.8	1.2	V
Dynamic note2						
C_{iss}	Input capacitance	VDS =8V,VGS =0V f =1MHz		600		pF
C_{oss}	Output capacitance			330		
C_{rss}	Reverse transfer capacitance			140		
Q_g	Total gate charge	VDS =10V,VGS =4.5V ID =4A		11		nC
Q_{gs}	Gate-source charge			2.3		
Q_{gd}	Gate-drain charge			2.5		
$t_{d(on)}$	Turn-on delay time	VDS=10V,ID =1A, VGS=4V,RGEN=10Ω		18		nS
t_r	Rise time			5		
$t_{d(off)}$	Turn-off delay time			43		
t_f	Fall time			20		

Notes: 1. Pulse Test : Pulse Width < 300μs, Duty Cycle ≤2%.

2 . Guaranteed by design, not subject to productiontesting.

N-Channel 20V (D-S) MOSFET Typical Characteristics

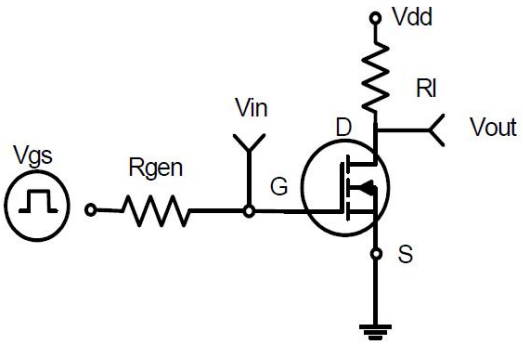


Figure 1:Switching Test Circuit

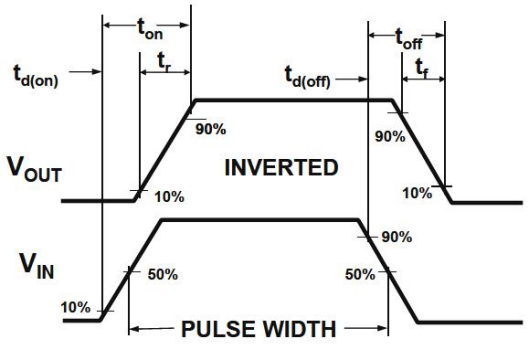


Figure 2:Switching Waveforms

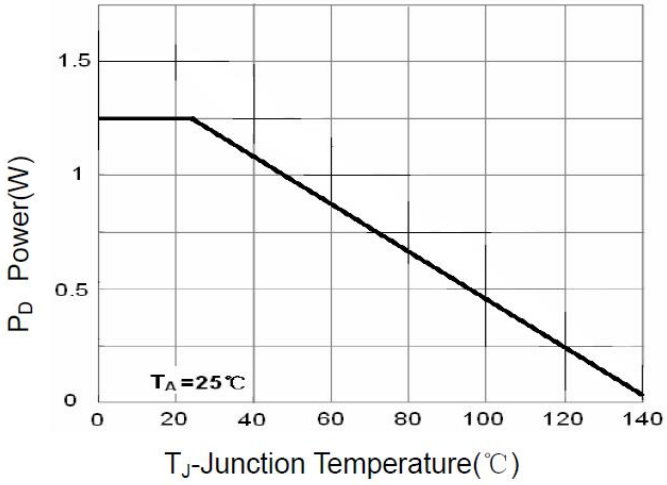


Figure 3 Power Dissipation

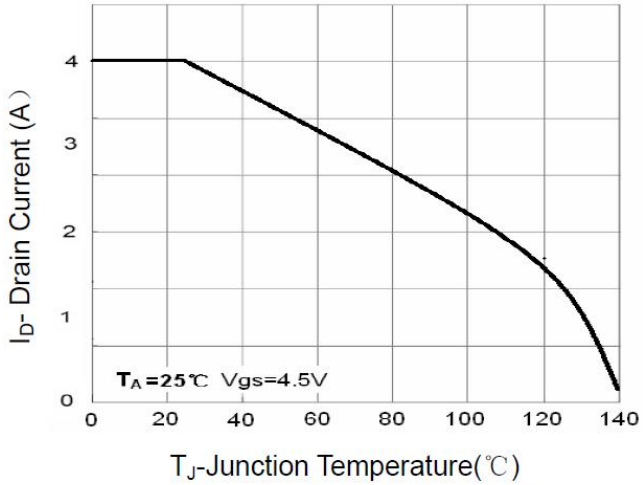


Figure 4 Drain Current

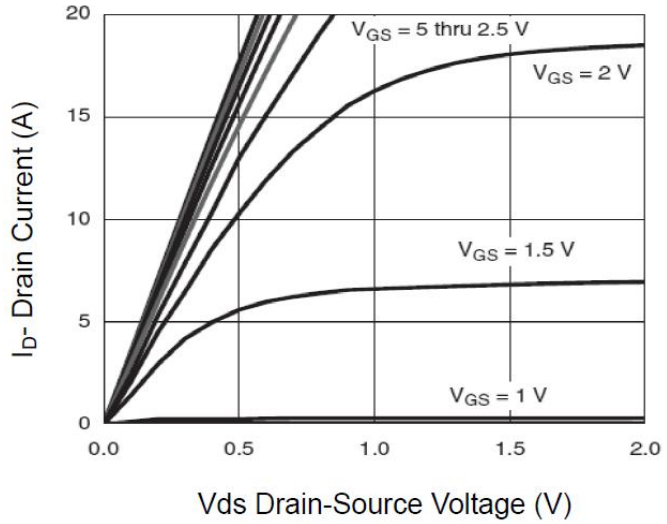


Figure 5 Output Characteristics

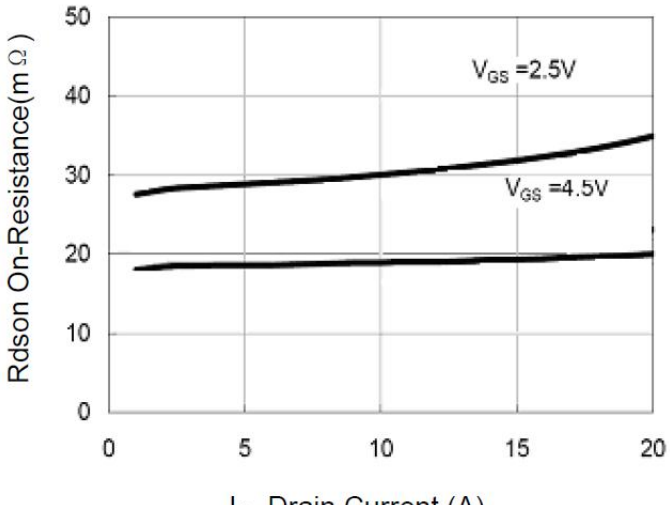


Figure 6 Drain-Source On-Resistance

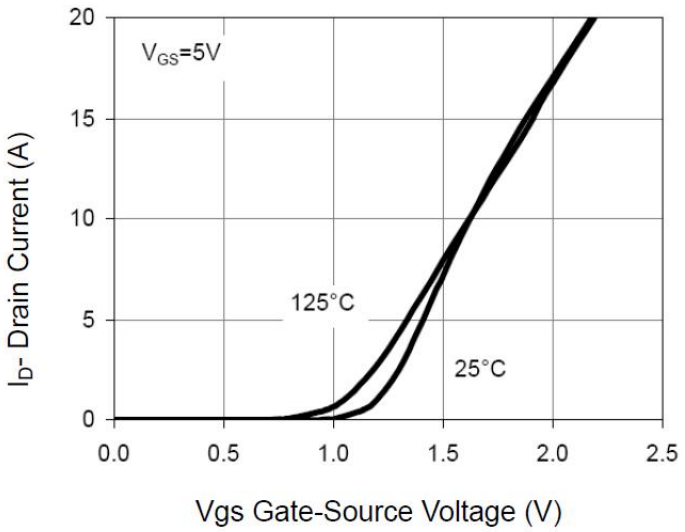


Figure 7 Transfer Characteristics

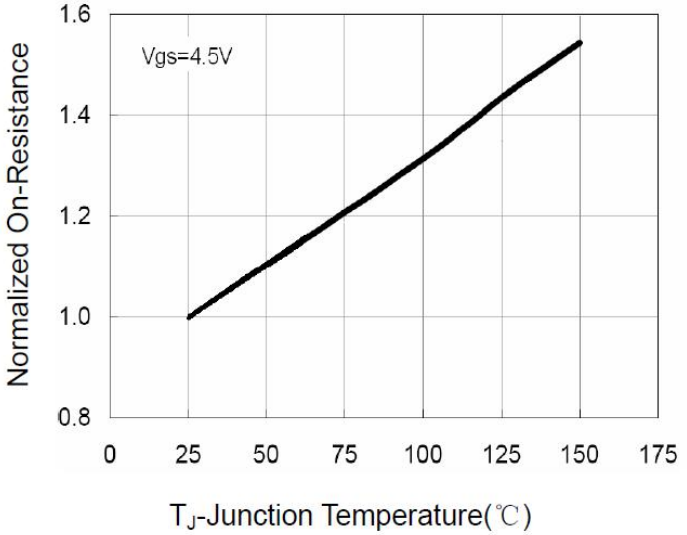


Figure 8 Drain-Source On-Resistance

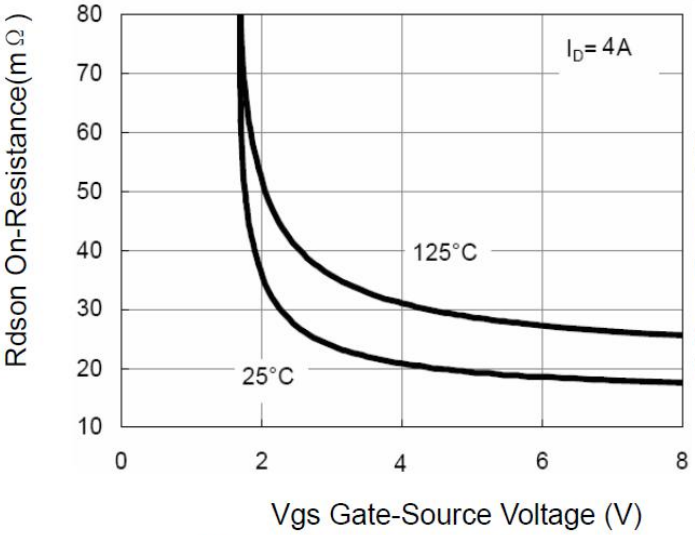


Figure 9 Rdson vs Vgs

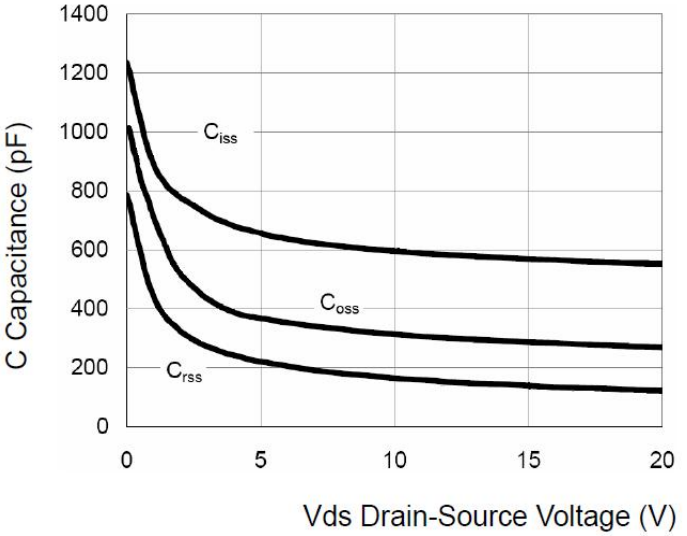


Figure 10 Capacitance vs Vds

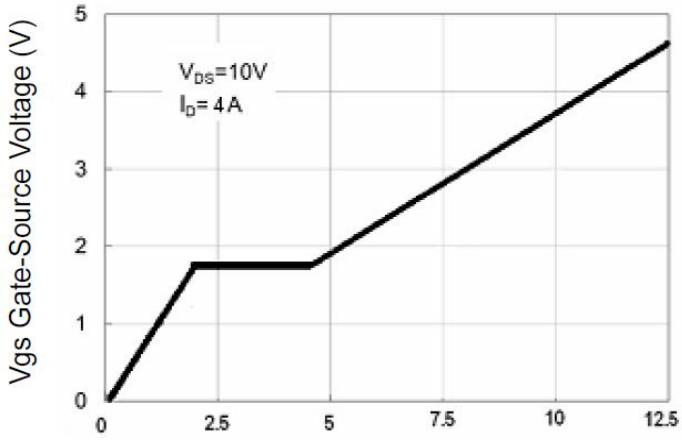
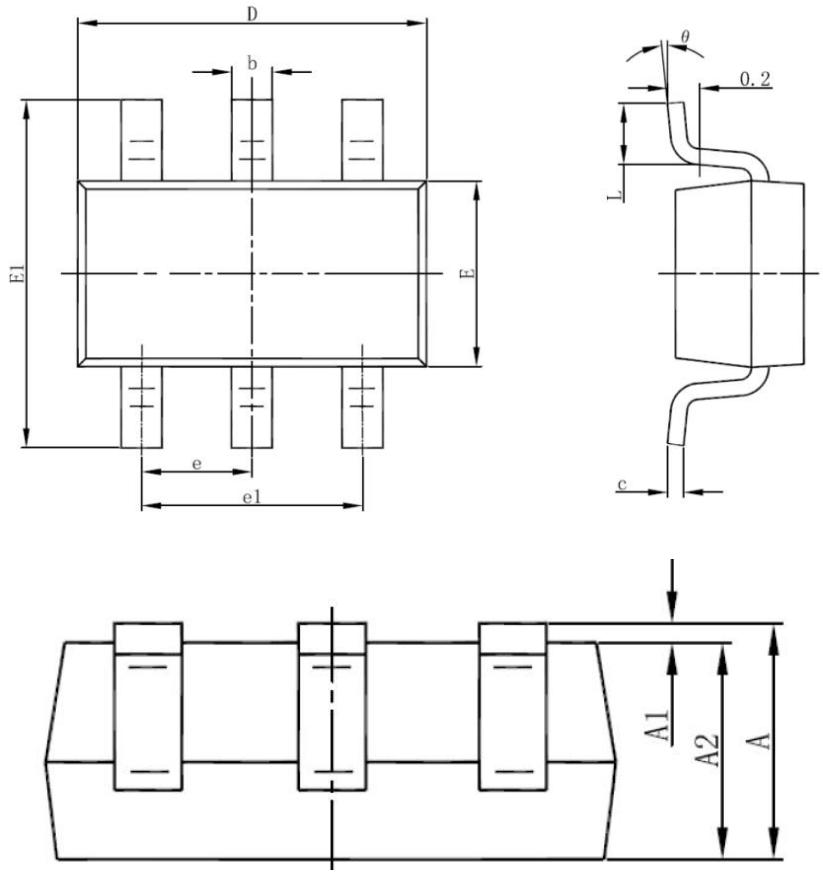


Figure 11 Gate Charge

SOT-23-6L PACKAGE OUTLINE DRAWING



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
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°