KY6802

20V Dual N-Channel Mosfet

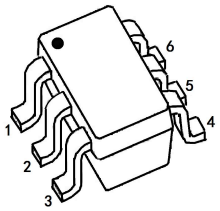
FEATURES

- $R_{DS(ON)}$ ≤ 55mΩ(42mΩ Typ.) @V_{GS}=4.5V
- $R_{DS(ON)}$ ≤ 85mΩ(60mΩ Typ.) @V_{GS}=2.5V

APPLICATIONS

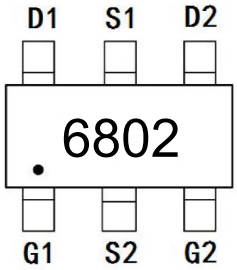
- DC - DC Converter
- Load Switch

SOT-23-6L



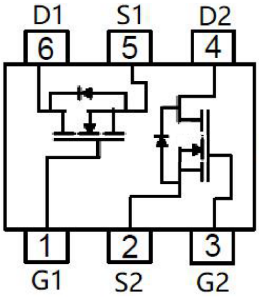
1: G1 3: G2 5: S1
2: S2 4: D2 6: D1

MARKING



6802:Device Code

N-CHANNEL MOSFET



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

Symbol	Parameter	Max.	Units
V_{DSS}	Drain-Source Voltage	20	V
V_{GSS}	Gate-Source Voltage	±12	V
I_D	Continuous Drain Current	3	A
I_{DM}	Pulsed Drain Current	12	A
P_{tot}	Total Power Dissipation	0.83	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	150	℃/W
T_J	Junction Temperature	150	℃
T_{STG}	Storage Temperature Range	-55 to +150	℃

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MOSFET ELECTRICAL CHARACTERISTICS T_a=25 °C unless otherwise specified

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS} = 0V,I_D = 250μA	20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 19V, V_{GS} = 0V	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	V_{GS} = ±12V,V_{DS} = 0V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} =V_{GS},I_D = 250μA	0.4	0.7	1.0	V
$R_{DS(ON)}$	Gate Drain-Source On-State Resistance note1	V_{GS}=4.5V, I_D=3A	-	42	55	mΩ
		V_{GS}=2.5V, I_D=2A	-	60	85	
Dynamic Characteristics note2						
C_{iss}	Input Capacitance	V_{DS} =10V, V_{GS} = 0V, f = 1.0MHz	-	240	-	pF
C_{oss}	Output Capacitance		-	45	-	pF
C_{rss}	Reverse Transfer Capacitance		-	22	-	pF
Q_g	Total Gate Charge	V_{DS}=10V, I_D=3A, V_{GS}=4.5V	-	4.0	-	nC
Q_{gs}	Gate-Source Charge		-	0.4	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	0.6	-	nC
Switching Characteristics note2						
$t_{d(on)}$	Turn-On Delay Time	V_{GS} = 4.5V, V_{DS}=10V, R_G =6Ω, I_D=1A	-	5	-	ns
t_r	Turn-On Rise Time		-	10	-	ns
$t_{d(off)}$	Turn-Off Delay Time		-	24	-	ns
t_f	Turn-Off Fall Time		-	8	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0V, I_{SD}=3A, T_J = 25℃	-	-	1.2	V
t_{rr}	Reverse Recovery Time	V_{GS} = 0V, I_S =3A, di/dt =100A/μs	-	-	10	ns
Q_{rr}	Reverse Recovery Charge		-	-	3	nC

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

2 . Guaranteed by design, not subject to production testing

Typical Characteristics

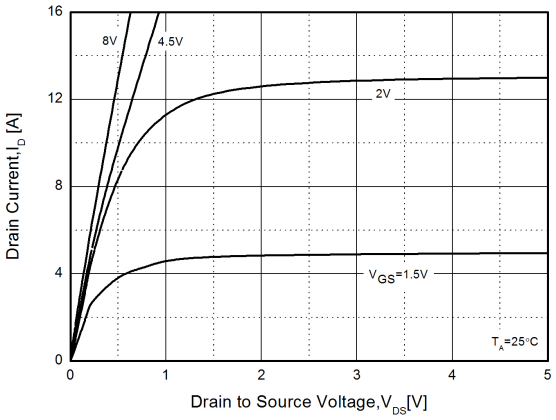

Figure1. Output Characteristics

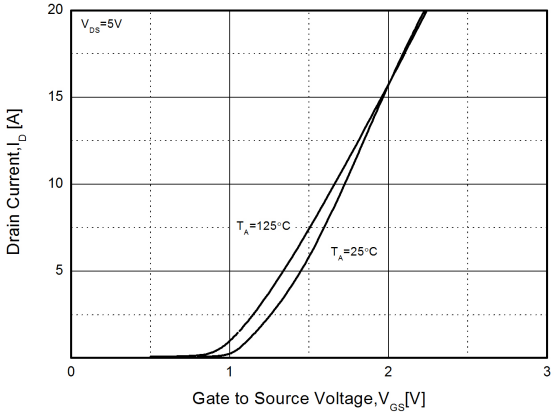

Figure2. Transfer Characteristics

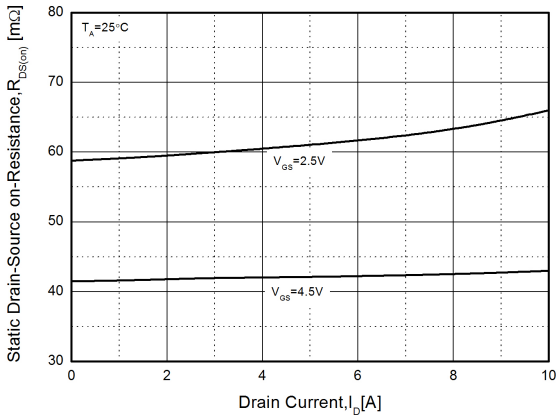

Figure3. Rdson-Drain Current

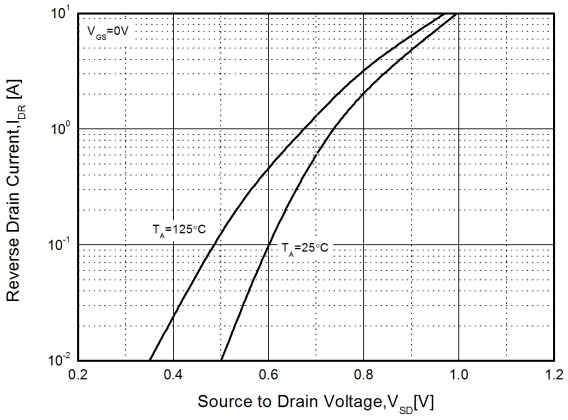

Figure4. Typical Source-Drain Diode Forward Voltage

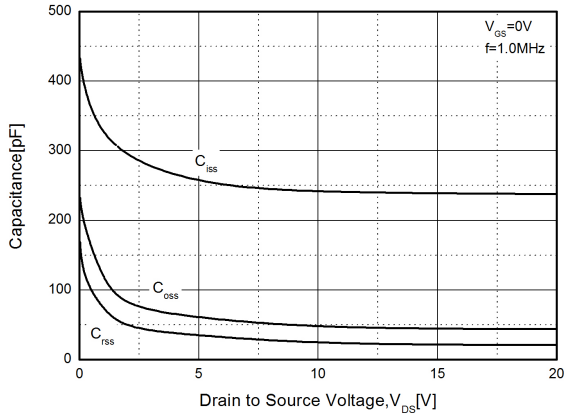

Figure5. Capacitance Characteristics

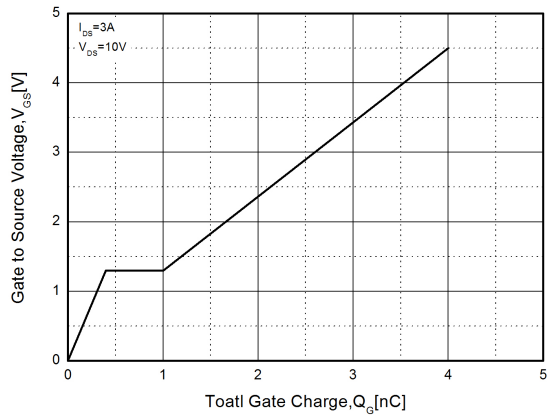

Figure6. Gate Charge

Typical Performance Characteristics (cont.)

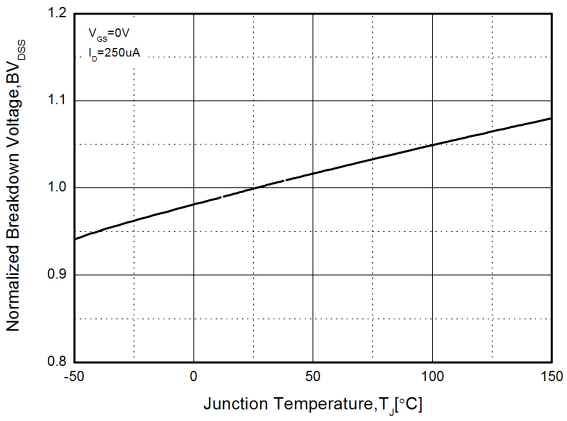

Figure7. Normalized Breakdown Voltage vs. Temperature

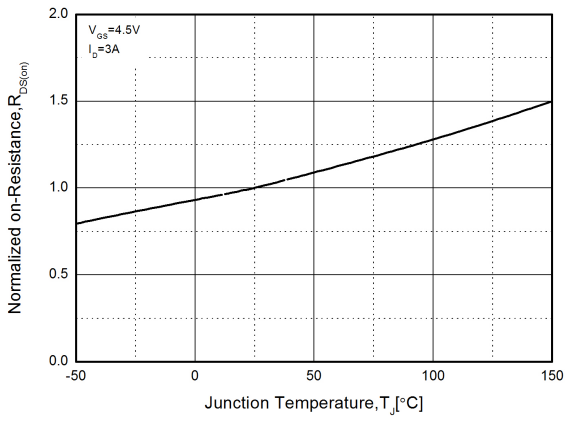

Figure8. Normalized on Resistance vs. Temperature

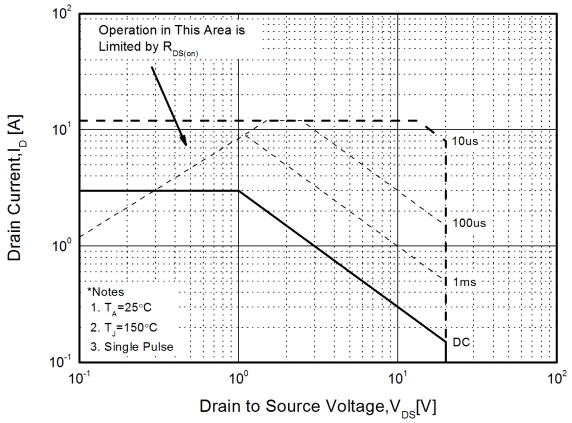

Figure9. Safe Operation Area

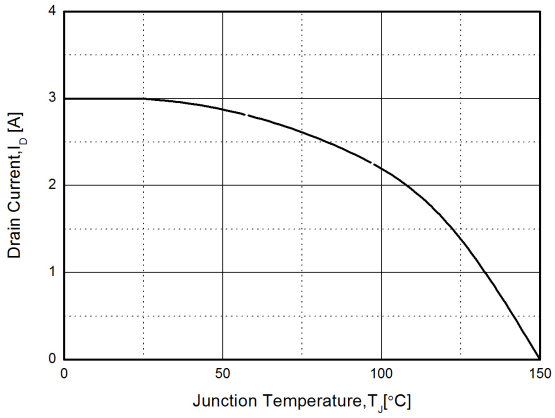

Figure10. Maximum Drain Current vs. Junction Temperature

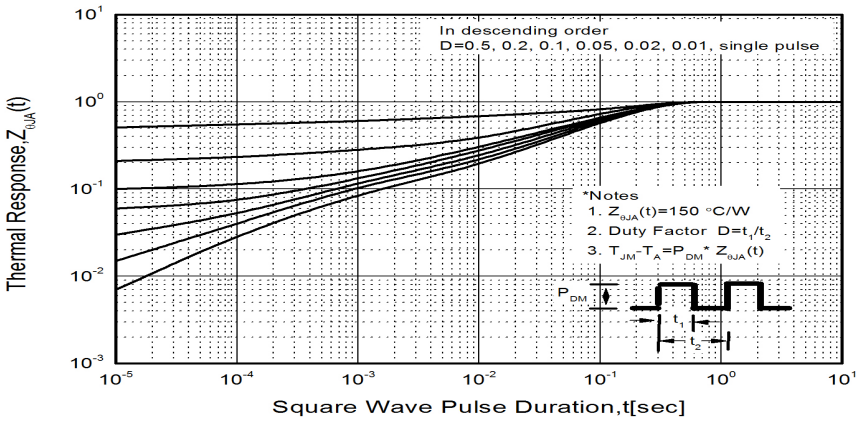

Figure11. Transient Thermal Response Curve

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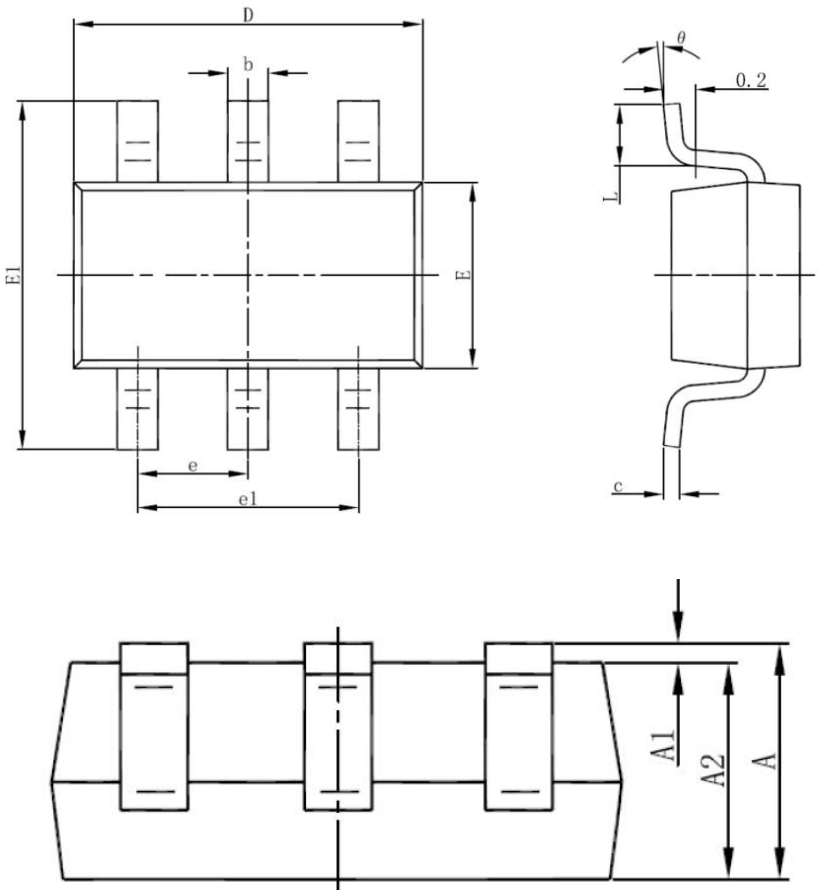
SOT-23-6L PACKAGE OUTLINE DRAWING



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°