KY6801

-20V Dual P-Channel Mosfet

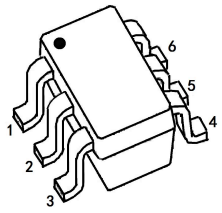
FEATURES

- $R_{DS(ON)} \leq 150m\Omega$($120m\Omega$ Typ.) @V_{GS}=-4.5V
- $R_{DS(ON)} \leq 230m\Omega$($160m\Omega$ Typ.) @V_{GS}=-2.5V

APPLICATIONS

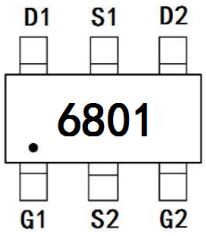
- Load Switch
- DC - DC Converter

SOT-23-6L



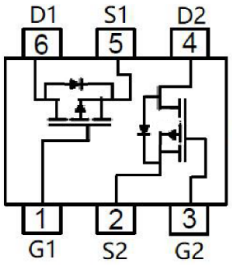
1: G1	3: G2	5: S1
2: S2	4: D2	6: D1

MARKING



6801:Device Code

P-CHANNEL MOSFET



MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DS}	Drain-Source Voltage	T_a = 25 ℃	-20	-	V
V_{GS}	Gate-Source Voltage	T_a= 25 ℃	-	± 12	V
I_D*	Drain Current	T_a= 25 ℃, V_{GS} = -4.5 V	-	-2.0	A
I_{DM}*,**,***	Pulsed Drain Current	T_a = 25 ℃, V_{GS} = -2.5 V	-	-8.0	A
P_{tot}*	Total Power Dissipation	T_a = 25 ℃	-	0.83	W
T_{stg}	Storage Temperature		- 55	150	℃
T_J	Junction Temperature		-	150	℃
$R_{\theta JA}$*	Thermal Resistance- Junction to Ambient		-	150	℃ / W

Notes:

* Surface Mounted on 1 in^2 pad area, t ≤ 10 sec

** Pulse width ≤ 10 μs, duty cycle ≤ 1 %

*** limited by bonding wire

Electrical Characteristics (T_a=25℃ unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0 V, I_{DS} = -250 μA	-20	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_{DS} = -250 μA	-0.4	-0.65	-1.0	V
I_{DSS}	Drain Leakage Current	V_{DS} = -19 V, V_{GS} = 0 V	-	-	-1	μA
I_{GSS}	Gate Leakage Current	V_{GS} = ± 12 V, V_{DS} = 0 V	-	-	± 100	nA
$R_{DS(ON)}$[a]	Channel On-State Resistance	V_{GS} = -4.5 V, I_D = -2.0 A	-	120	150	mΩ
		V_{GS} = -2.5 V, I_D = -1.5 A	-	160	230	
Diode Characteristics						
V_{SD}[a]	Diode Forward Voltage	I_{SD} = -2.0 A, V_{GS} = 0 V	-	-	1.2	V
t_{rr}	Reverse Recovery Time	I_{SD} = -2.0 A, dI_{SD} / dt = 100 A / μs	-	7.5	-	ns
Q_{rr}	Reverse Recovery Charge		-	2.5	-	nC
Dynamic Characteristics[b]						
C_{iss}	Input Capacitance	V_{GS} = 0 V, V_{DS} = -10 V Frequency = 1 MHz	-	250	-	pF
C_{oss}	Output Capacitance		-	38	-	
C_{rss}	Reverse Transfer Capacitance		-	18	-	
t_d(on)	Turn-on Delay Time	V_{DS} = -10 V, V_{GEN} = -4.5 V, R_G = 3 Ω,I_{DS} = -2.0 A	-	11	-	ns
t_r	Turn-on Rise Time		-	52	-	
t_d(off)	Turn-off Delay Time		-	12	-	
t_f	Turn-off Fall Time		-	19	-	
Gate Charge Characteristics[b]						
Q_g	Total Gate Charge	V_{GS} = -4.5 V, V_{DS} = -10 V, I_{DS} = -2.0 A	-	5.3	-	nC
Q_{gs}	Gate-Source Charge		-	1.0	-	
Q_{gd}	Gate-Drain Charge		-	1.3	-	

Notes:

a : Pulse test ; pulse width ≤ 300 μs, duty cycle ≤ 2 %

b : Guaranteed by design, not subject to production testing

Typical Characteristics

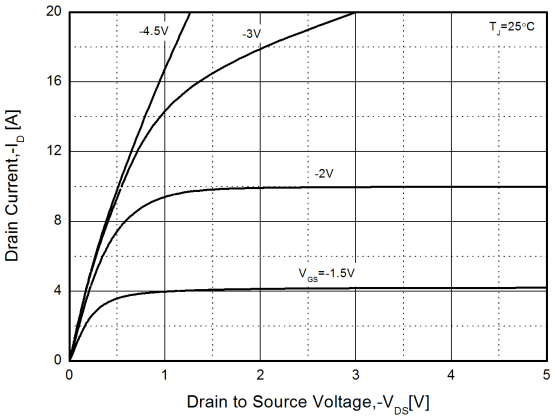


Figure1. Output Characteristics

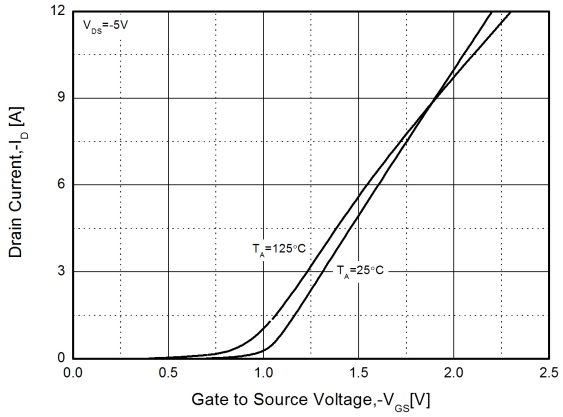


Figure2. Transfer Characteristics

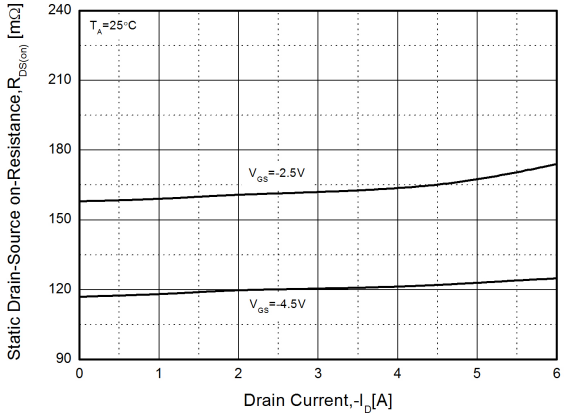


Figure3. Rdson-Drain Current

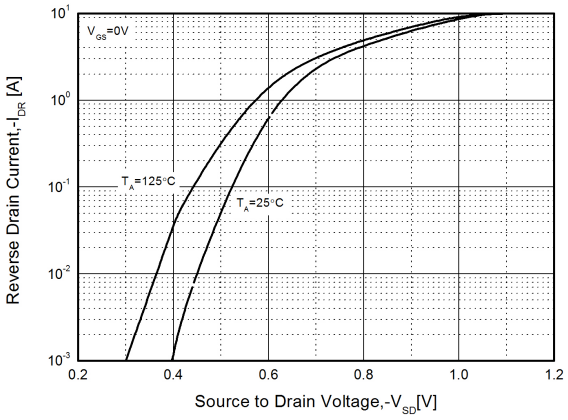


Figure4. Typical Source-Drain Diode Forward Voltage

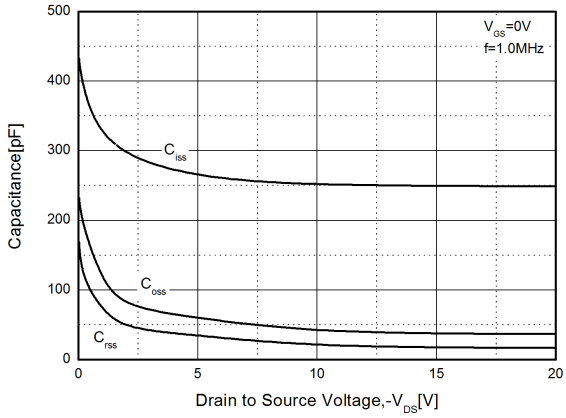


Figure5. Capacitance Characteristics

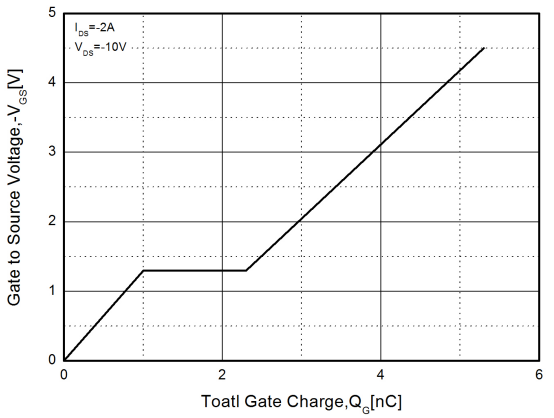


Figure6. Gate Charge

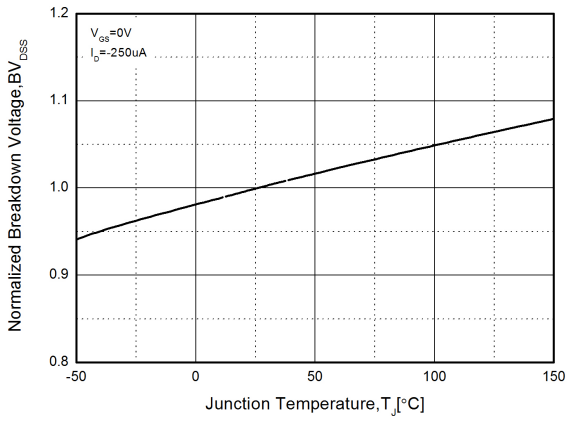


Figure7. Normalized Breakdown Voltage vs. Temperature

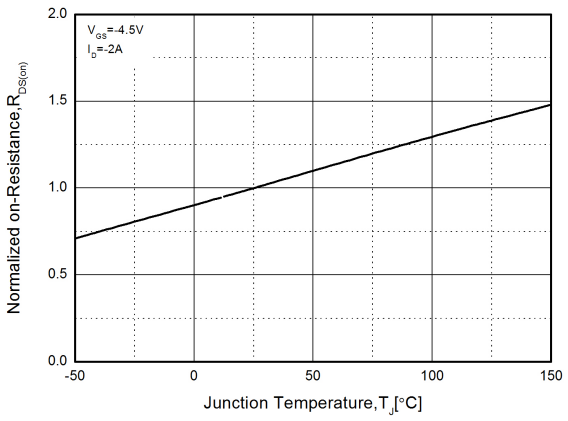


Figure8. Normalized on Resistance vs. Temperature

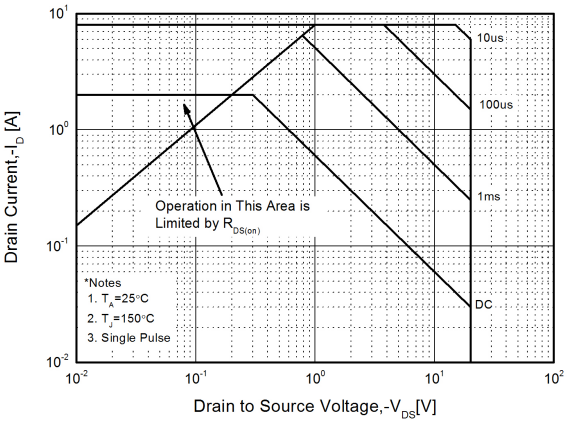


Figure9. Safe Operation Area

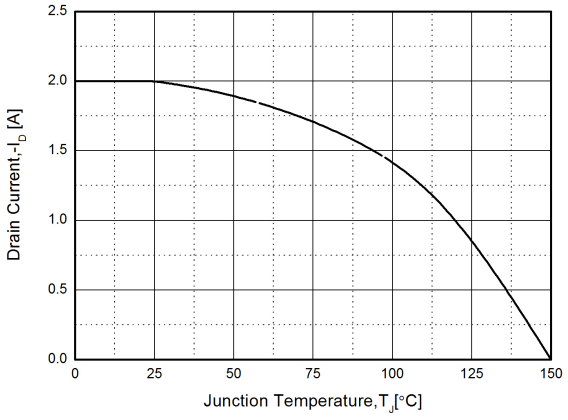


Figure10. Maximum Drain Current vs. Junction Temperature

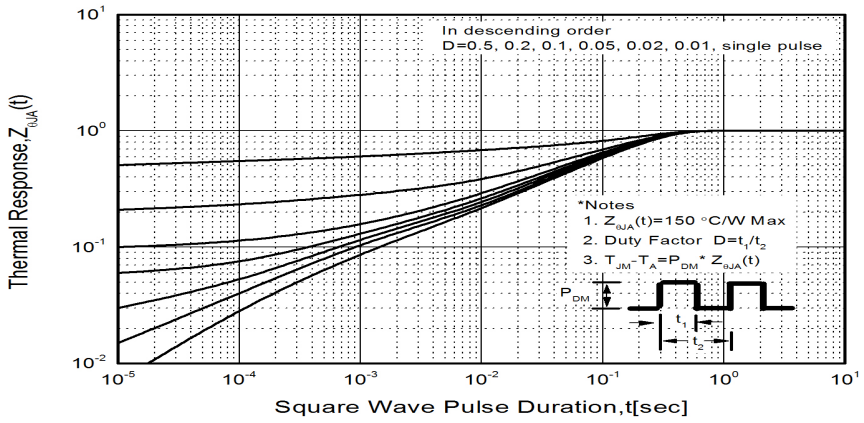


Figure11. Transient Thermal Response Curve

Typical Performance Characteristics

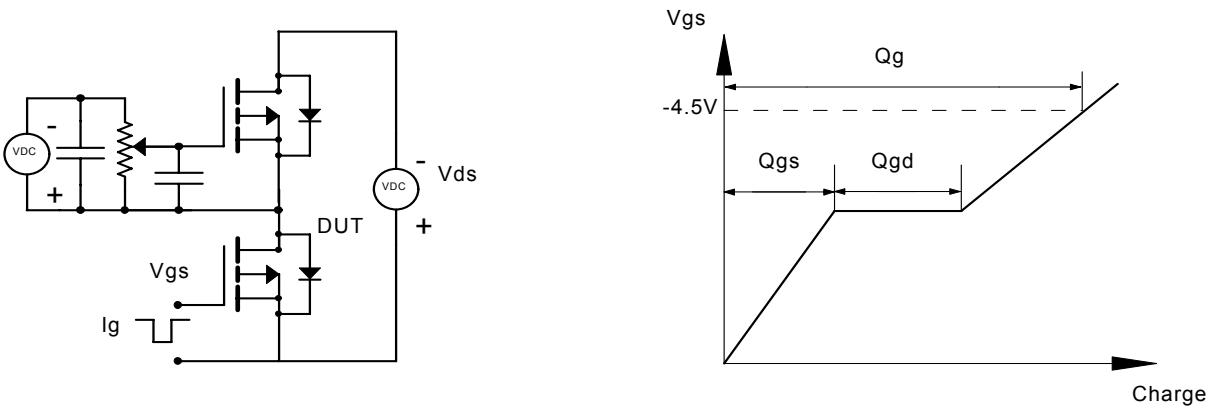


Figure1:Gate Charge Test Circuit & Waveform

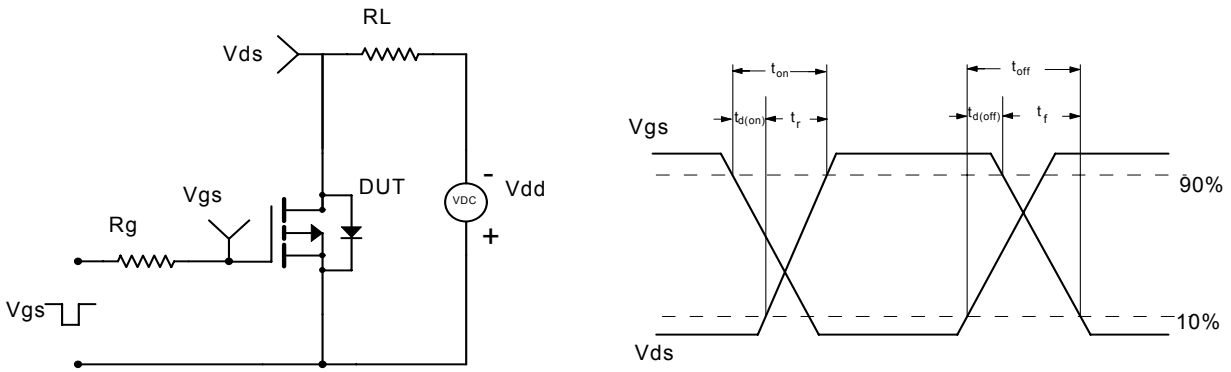


Figure 2: Resistive Switching Test Circuit & Waveforms

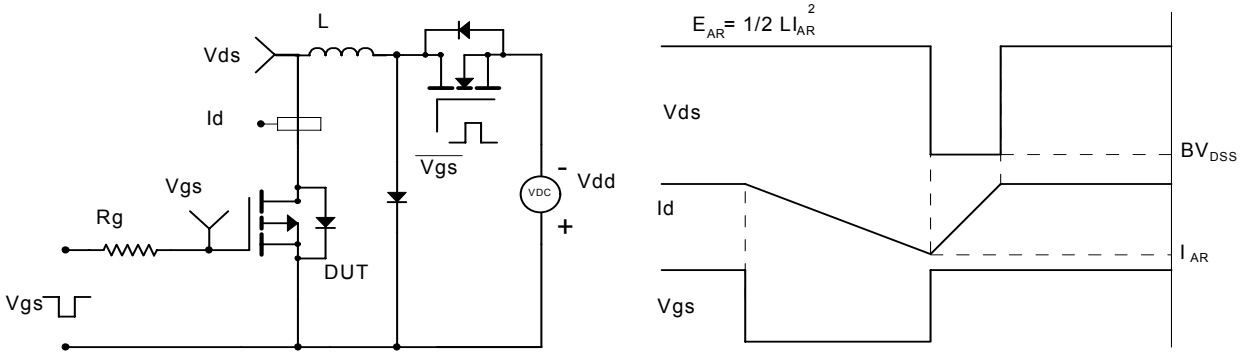
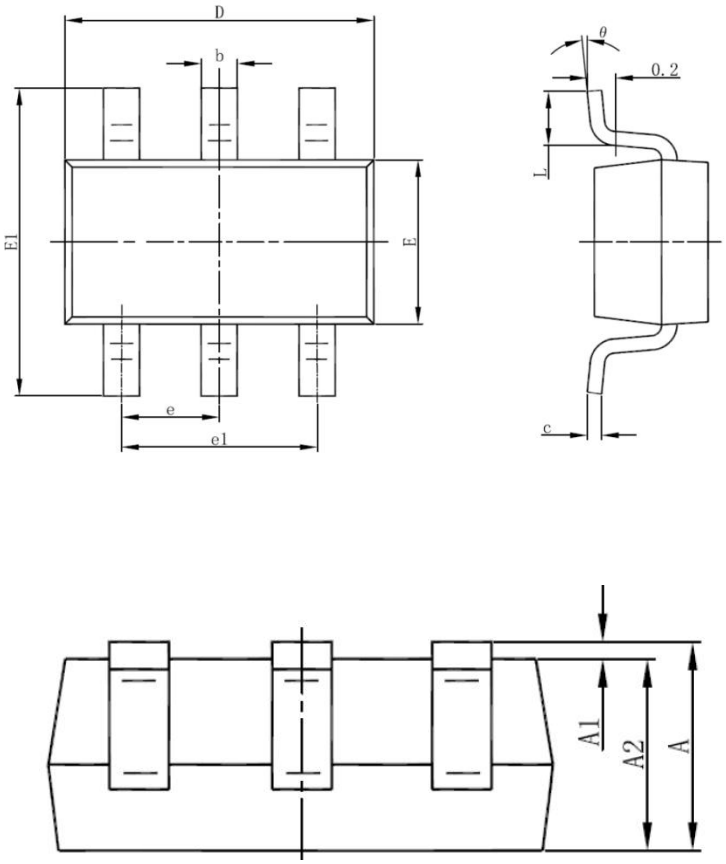


Figure 3:Unclamped Inductive Switching Test Circuit & Waveforms

KY6801

SOT-23-6L package



DIM	MILLIMETERS		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(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°

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