

Feature

- Surface Mount Package
- Lead free product is acquired
- High Power and current handing capability

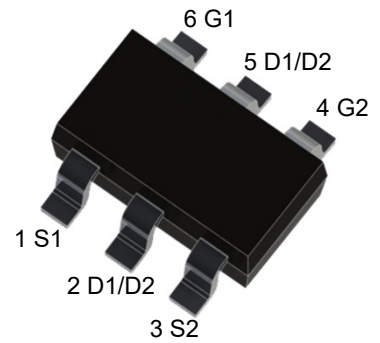
MOSFET Product Summary		
$V_{DS}(V)$	$R_{DS(on)}(m\Omega)$	$I_D(A)$
19.5	18@ $V_{GS} = 4.5V$	6.0

Applications

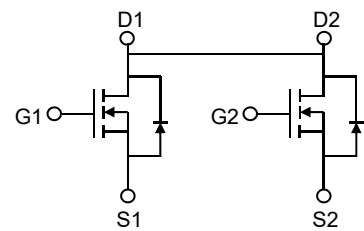
- Battery Protection
- Battery Powered Systems
- Power Management in Notebook Computer

Mechanical Data

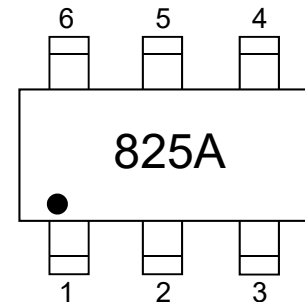
- Case: SOT23-6L
- Case Material: "Green" Molding Compound.
UL-Flammability Classification Rating 94V-0.
- Weight: 0.15 grams (approximate) .



SOT-23-6L(Top View)



Circuit Diagram



Marking (Top View)

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	19.5	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous ¹⁾	I_D	6.0	A
Pulsed Drain Current ²⁾	I_{DM}	20	A
Total Power Dissipation ³⁾	P_D	1.9	W
Thermal Resistance Junction-to-Ambient ³⁾	$R_{\theta JA}$	65	$^{\circ}C/W$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^{\circ}C$

Electrical characteristics per line@25°C (unless otherwise specified)(N-Channel)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	19.5	21	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 19V, V_{GS} = 0V$	-	-	1.0	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$	-	-	± 100	nA
On Characteristics⁴⁾						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5	0.7	1.2	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 6.0A$	-	18	23	m Ω
		$V_{GS} = 2.5V, I_D = 2.0A$	-	22	30	
Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = 1A$	-	0.8	1.3	V
Dynamic Characteristics⁵⁾						
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V,$ $f = 1.0MHz$	-	370	-	pF
Output Capacitance	C_{oss}		-	89	-	
Reverse Transfer Capacitance	C_{rss}		-	10	-	
Switching Characteristics⁵⁾						
Turn-on Delay Time	$t_{d(on)}$	$V_{DS} = 10V, V_{GS} = 4.5V,$ $R_G = 10\Omega, I_D = 3A$	-	200	-	ns
Turn-on Rise Time	t_r		-	236	-	
Turn-Off Delay Time	$t_{d(off)}$		-	36	-	
Turn-Off Fall Time	t_f		-	165	-	
Total Gate Charge	Q_g	$V_{DS} = 16V, V_{GS} = 4.5V,$ $I_D = 6A$	-	7.5	-	nC
Gate-Source Charge	Q_{gs}		-	3.0	-	
Gate-Drain Charge	Q_{gd}		-	1.5	-	

Notes:

1. Pulse width limited by maximum junction temperature.
2. Pulse test : Pulse width $\leq 100\mu s$, duty cycle $\leq 2\%$.
3. Device mounted on 1 inch FR4 PCB with 2oz.Copper.
4. Measured under pulsed conditions. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
5. Guaranteed by design, not subject to production.

Typical Characteristics (N-Channel)

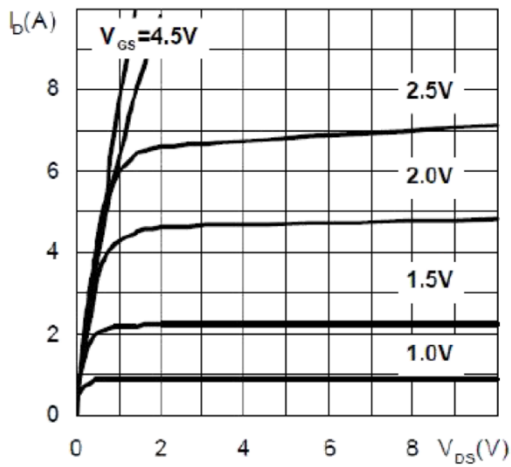


Figure 1 Output Characteristics

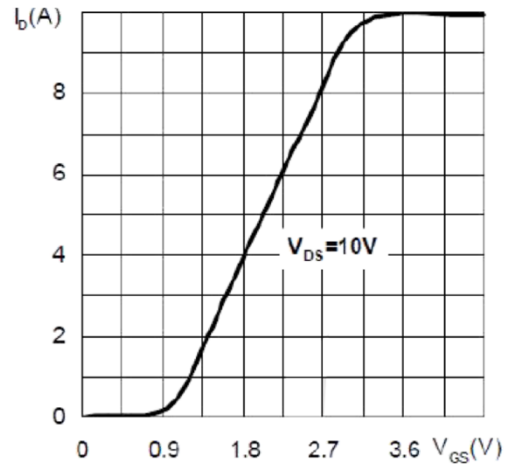


Figure 2 Transfer Characteristics

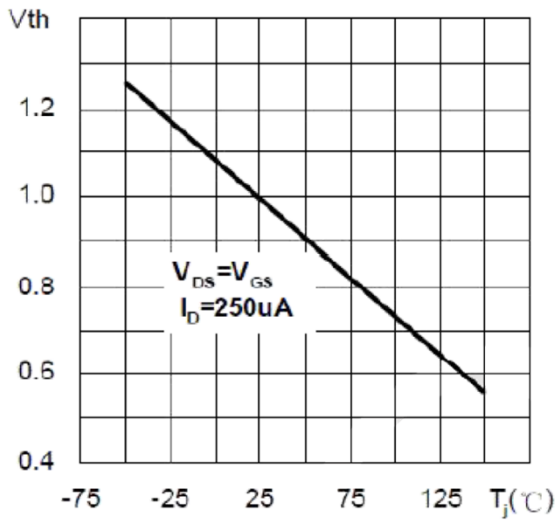


Figure 3 Threshold Voltage vs. Temperature

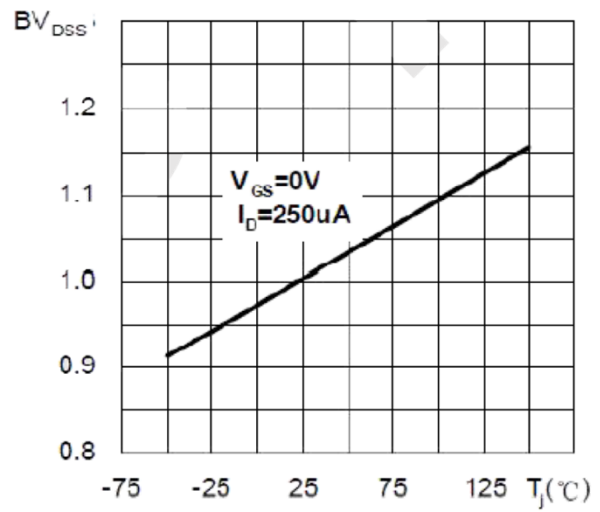


Figure 4 BVDSS vs. Temperature

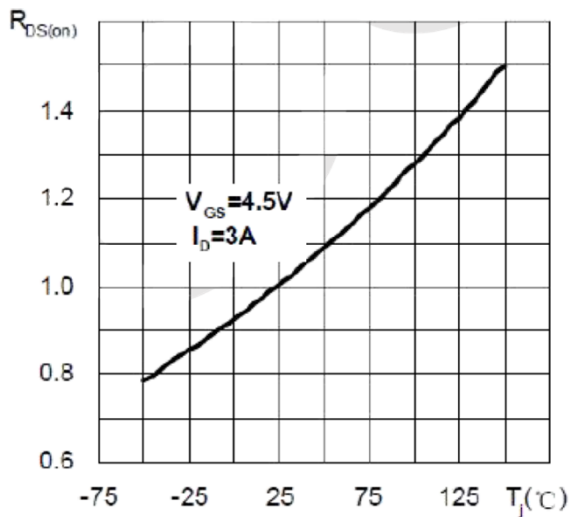


Figure 5 $R_{DS(on)}$ vs. Temperature

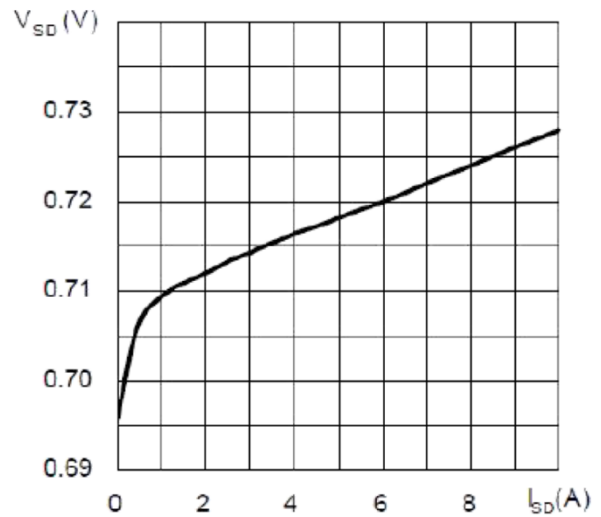


Figure 6 Source to Drain vs. Temperature

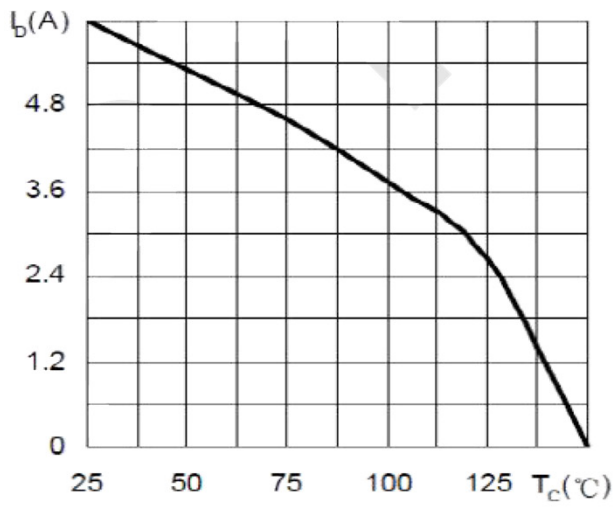


Figure 7 Maximum Drain Current vs. Case Temperature

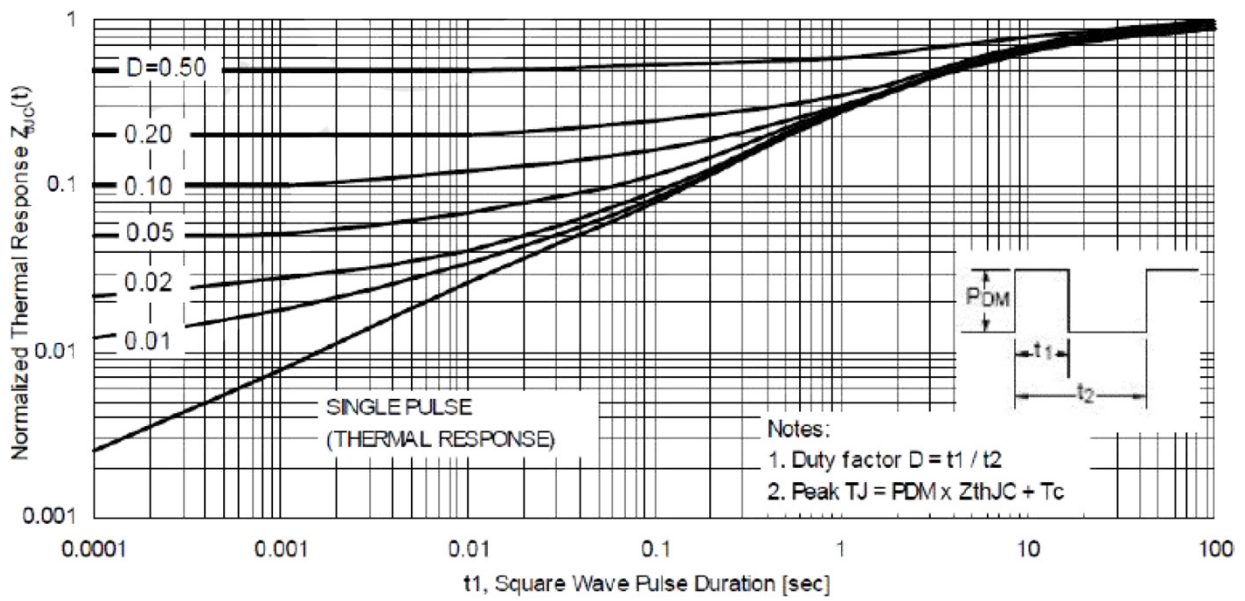
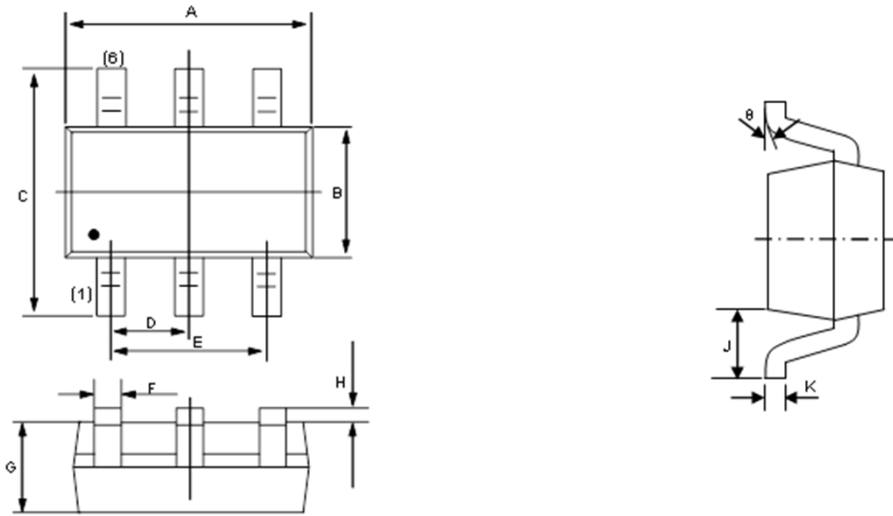
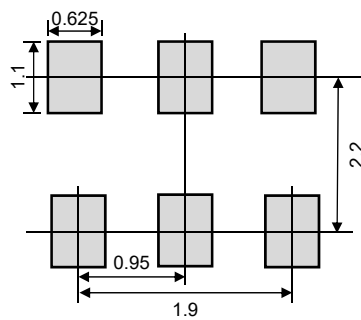


Figure 8 Maximum Transient Thermal Impedence

Product dimension (SOT-23-6L)




Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	2.85	3.15	0.112	0.124
B	1.55	1.75	0.061	0.069
C	2.60	3.00	0.102	0.118
D	0.85	1.05	0.033	0.041
E	1.70	2.10	0.067	0.083
F	0.39	0.49	0.015	0.019
G	0.90	1.30	0.035	0.051
H	0.00	0.15	0.000	0.006
J	0.59 Ref.		0.023 Ref.	
K	0.12	0.19	0.005	0.007
θ	0°	8°	0°	8°



Unit:mm

Suggested PCB Layout


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