

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
20V	14mΩ@10V	7A
	16mΩ@4.5V	
	20mΩ@2.5V	

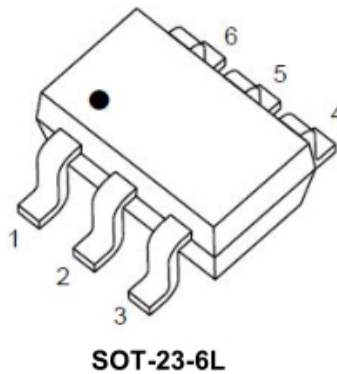
## Feature

- Low gate charge
- ESD Protected, HBM $\geq$ 2KV

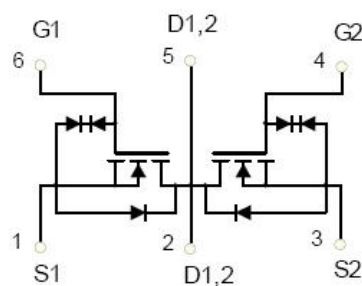
## Applications

- Switching application.

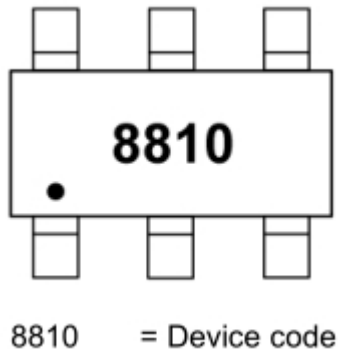
## Package



## Circuit diagram



## Marking



## Absolute maximum ratings

( $T_a=25^{\circ}\text{C}$  unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$I_D$	7	A
Pulsed Drain Current	$I_{DM}$	30	A
Power Dissipation	$P_D$	1.5	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83.3	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^{\circ}\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	$T_L$	260	$^{\circ}\text{C}$

## Electrical characteristics

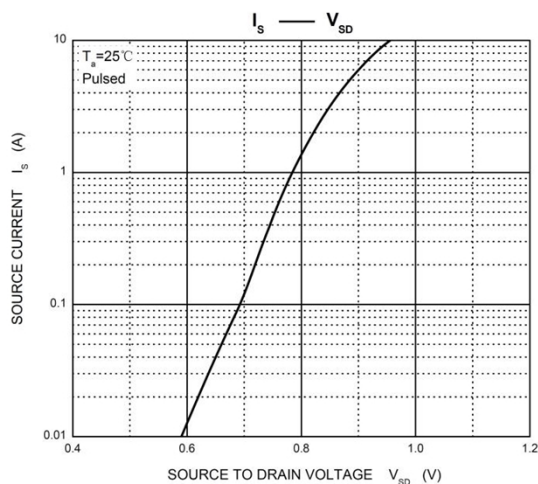
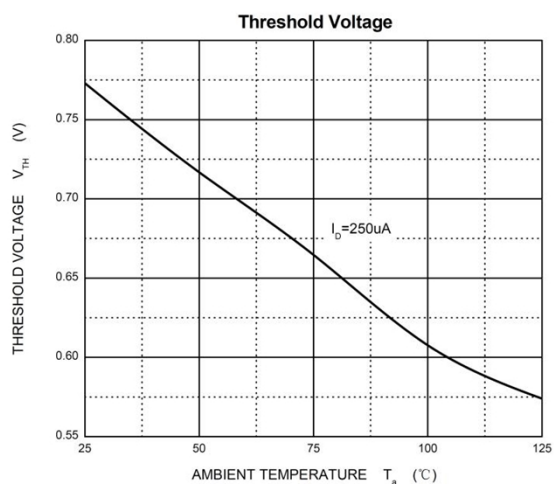
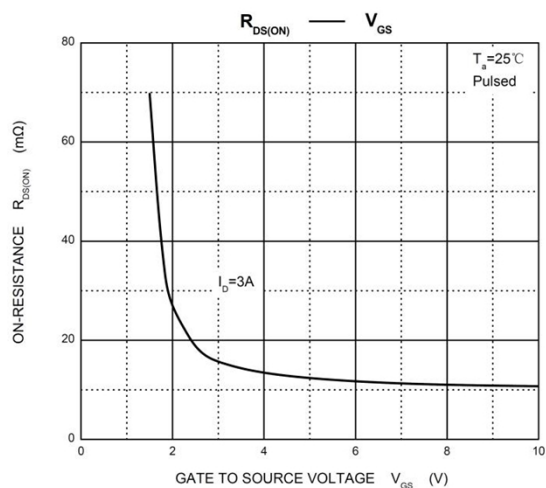
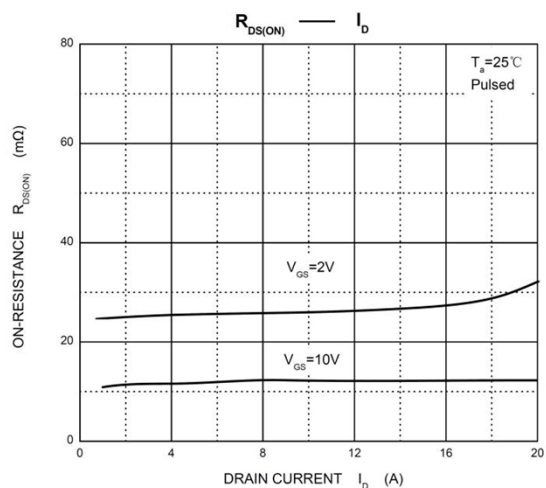
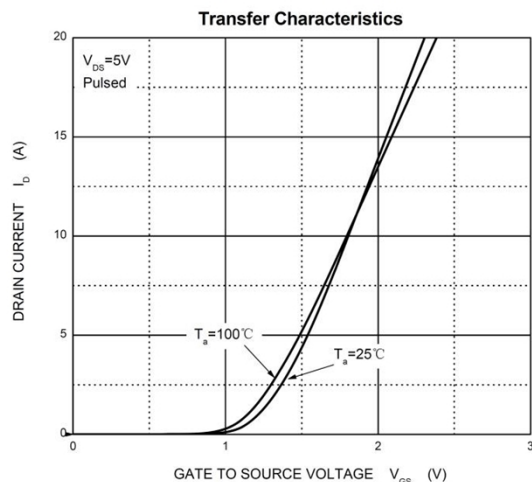
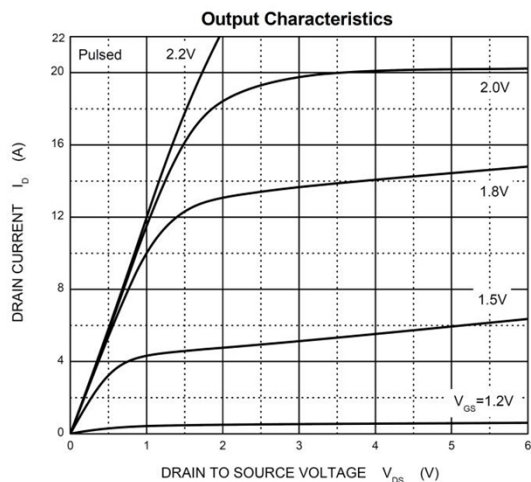
( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV (BR)DSS	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	20			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =16V, V <sub>GS</sub> = 0V			1	uA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±4.5V, V <sub>DS</sub> = 0V			±1	uA
		V <sub>GS</sub> = ±10V, V <sub>DS</sub> = 0V			±5	
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	0.4	0.65	1.0	V
Drain-source on-resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =7A	8	14	20	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =7A	10	16	22	
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =6.5A	14	20	26	
Forward transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =7A	9			S
Dynamic Characteristics <sup>2)</sup>						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1MHz		1150		pF
Output capacitance	C <sub>oss</sub>			185		
Reverse transfer capacitance	C <sub>rss</sub>			145		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =7A		15		nC
Gate-Source Charge	Q <sub>gs</sub>			0.8		
Gate-Drain Charge	Q <sub>gd</sub>			3.2		
Switching Characteristics <sup>2)</sup>						
Turn-on Delay Time	T <sub>d(on)</sub>	V <sub>GS</sub> =5V, V <sub>DD</sub> =10V, R <sub>L</sub> =1.35Ω, R <sub>GEN</sub> =3Ω		6		nS
Turn-on Rise Time	T <sub>r</sub>			13		
Turn-Off Delay Time	T <sub>d(off)</sub>			52		
Turn-Off Fall Time	t <sub>f</sub>			16		
Source-Drain Diode Characteristics						
Diode Forward voltage <sup>1)</sup>	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =1A			1	V

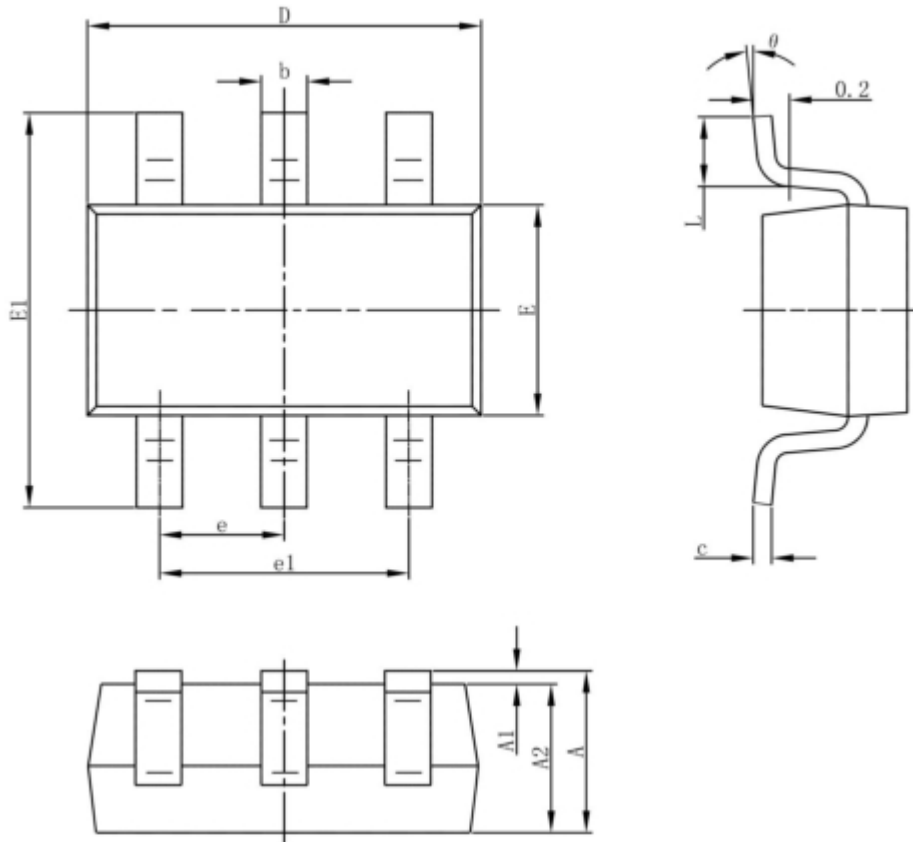
### Notes:

1. Pulse Test: Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 0.5\%$ .
2. Guaranteed by design, not subject to production testing.

## Typical Characteristics



## SOT-23-6L Package Information



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(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
$\theta$	0°	8°	0°	8°