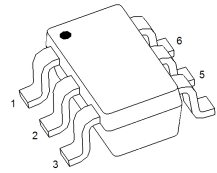
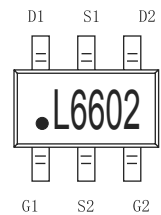


Main Product Characteristics

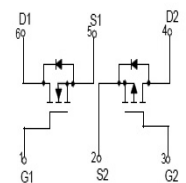
$V_{(BR)DSS}$	-30V	30V
$R_{DS(on)MAX}$	135mΩ@-10V	60mΩ@10V
	185mΩ@-4.5V	75mΩ@4.5V
	265mΩ@-2.5V	115mΩ@2.5V
I_D	-2.3A	3.4A



SOT-23-6L



Marking and Pin Assignment



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Ideal for load switching and general purpose applications
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery

Description

The SSFL6602 utilizes the latest processing techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in power switching applications and a wide variety of other applications.



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value		Unit
		N-Channel	P-Channel	
Drain-Source Voltage	V_{DS}	30	-30	V
Gate-Source Voltage	V_{GS}	± 12	± 12	V
Continuous Drain Current ¹	I_D	3.4	-2.3	A
Pulsed Drain Current ²	I_{DM}	30	-30	A
Maximum Power Dissipation	P_D	0.35	0.35	W
Thermal Resistance from Junction to Ambient ¹	$R_{\theta JA}$	357	357	$^\circ\text{C/W}$
Junction Temperature	T_J	150	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to +150	-55 to +150	$^\circ\text{C}$

- Notes:**
1. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ\text{C}$. The value in any given application depends on the user's specific board design. The current ratings is based on $t \leq 10\text{s}$ thermal resistance rating.
 2. Repetitive rating, pulse with limited by junction temperature.

N-Channel Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

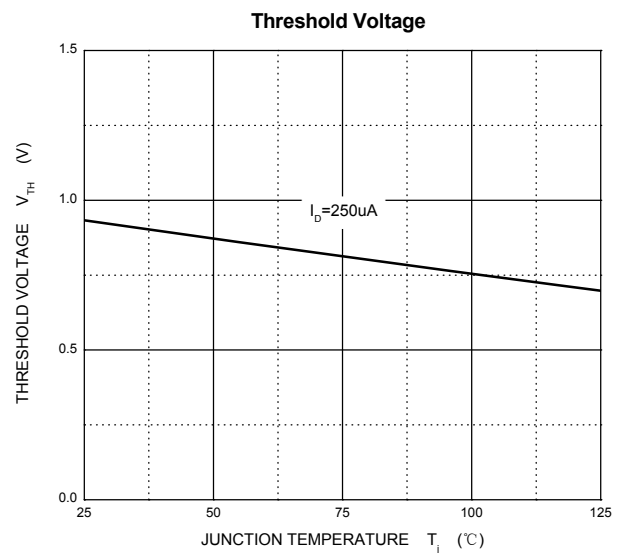
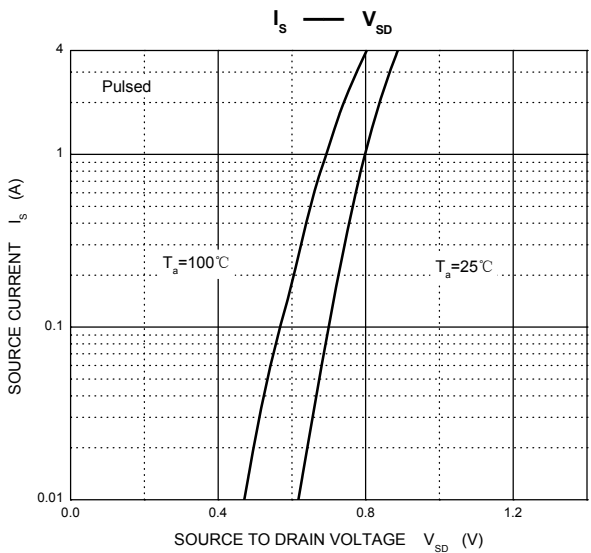
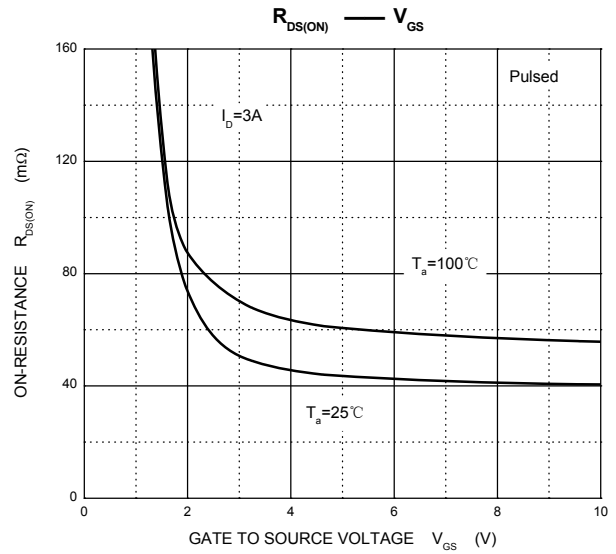
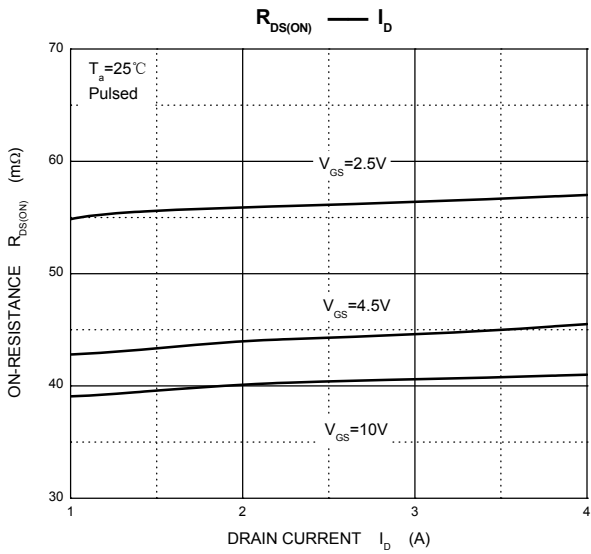
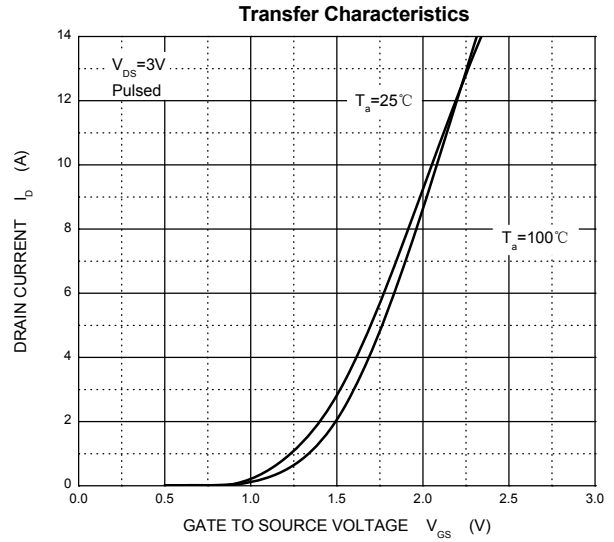
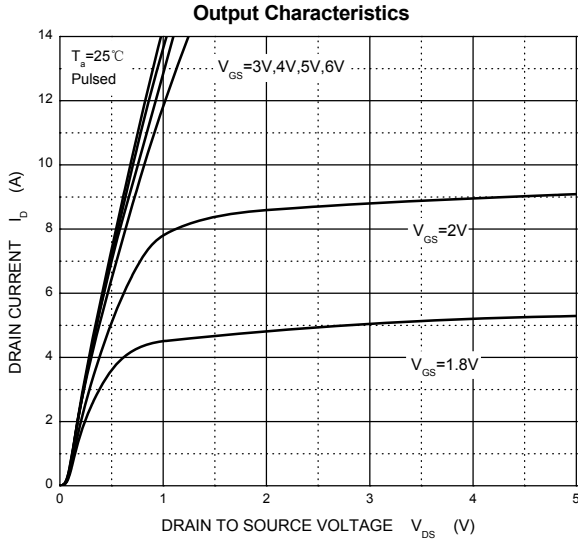
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30	---	---	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$	---	---	1	μA
Gate-Source Leakage Current ¹	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$	---	---	± 100	nA
Drain-Source On-Resistance ¹	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 3A$	---	45	60	m Ω
		$V_{GS} = 4.5V, I_D = 3A$	---	50	75	m Ω
		$V_{GS} = 2.5V, I_D = 2A$	---	60	115	m Ω
Forward Transconductance ¹	g_{FS}	$V_{DS} = 5V, I_D = 3A$	5	---	---	S
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.6	---	1.4	V
Diode Forward Voltage ¹	V_{SD}	$I_S = 1A, V_{GS} = 0V$	---	---	1	V
Dynamic Characteristics²						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$	---	390	---	pF
Output Capacitance	C_{oss}		---	54.5	---	pF
Reverse Transfer Capacitance	C_{rss}		---	41	---	pF
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	---	3	---	Ω
Switching Characteristics²						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 10V, V_{DS} = 15V, R_L = 5\Omega, R_{GEN} = 6\Omega$	---	4	---	ns
Turn-On Rise Time	t_r		---	2	---	ns
Turn-Off Delay Time	$t_{d(off)}$		---	22	---	ns
Turn-Off Fall Time	t_f		---	3	---	ns

P-Channel Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

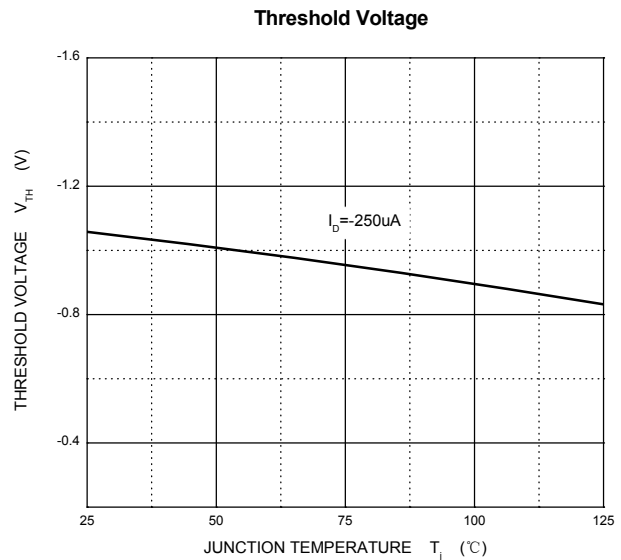
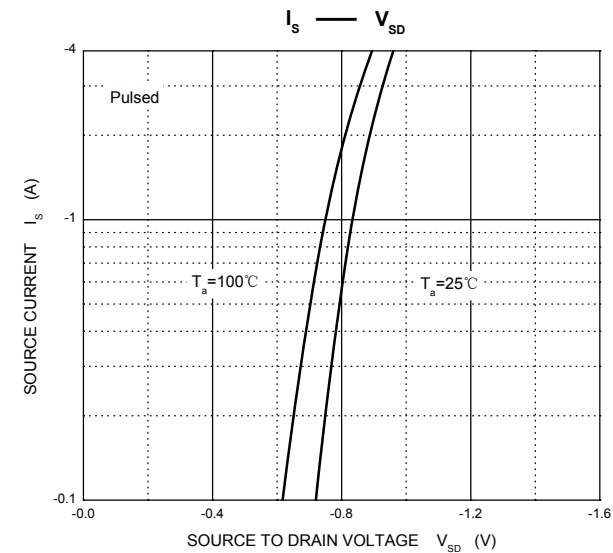
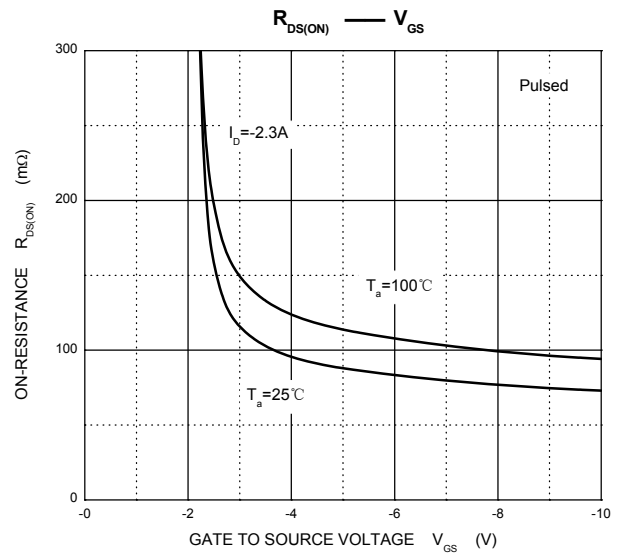
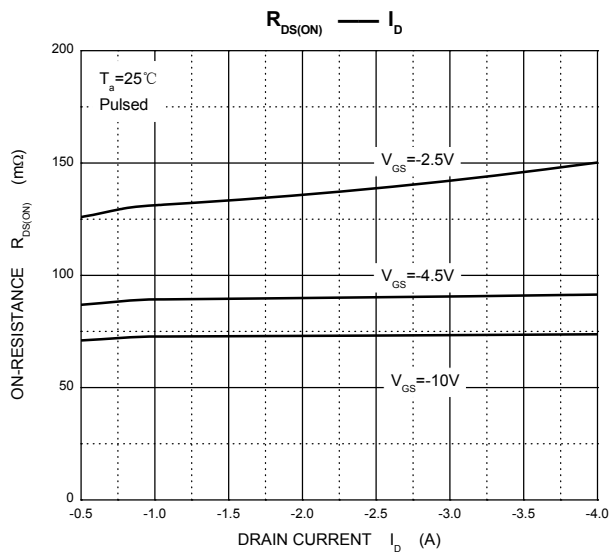
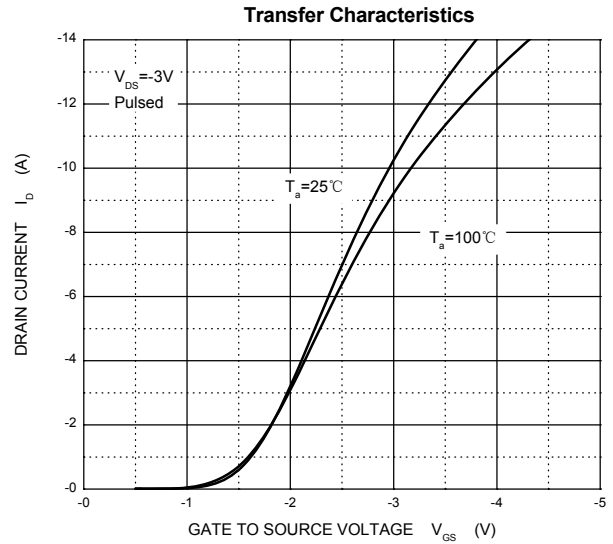
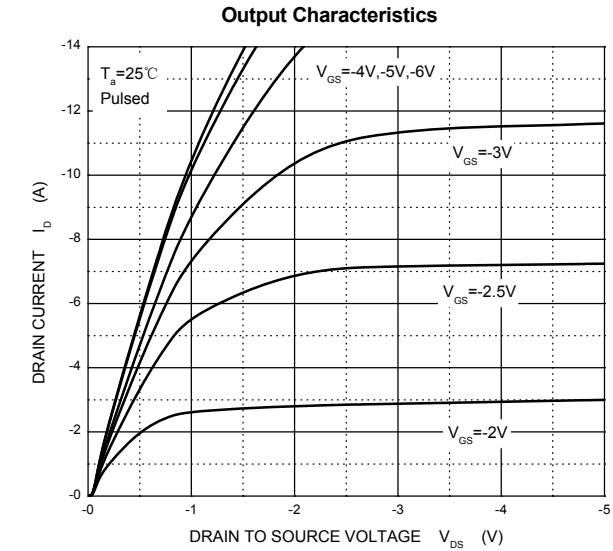
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30	---	---	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$	---	---	-1	μA
Gate-Source Leakage Current ¹	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$	---	---	± 100	nA
Drain-Source On-Resistance ¹	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -2.3A$	---	75	135	m Ω
		$V_{GS} = -4.5V, I_D = -2A$	---	95	185	m Ω
		$V_{GS} = -2.5V, I_D = -1A$	---	140	265	m Ω
Forward Transconductance ¹	g_{FS}	$V_{DS} = -5V, I_D = -2.3A$	4.5	---	---	S
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.6	---	-1.4	V
Diode Forward Voltage ¹	V_{DS}	$I_S = -1A, V_{GS} = 0V$	---	---	-1	V
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -15V, f = 1MHz$	---	409	---	pF
Output Capacitance	C_{oss}		---	55	---	pF
Reverse Transfer Capacitance	C_{rss}		---	42	---	pF
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	---	12	---	Ω
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = -10V, V_{DS} = -15V,$ $R_L = 6\Omega, R_{GEN} = 6\Omega$	---	13	---	ns
Turn-On Rise Time	t_r		---	10	---	ns
Turn-Off Delay Time	$t_{d(off)}$		---	28	---	ns
Turn-Off Fall Time	t_f		---	13	---	ns

Notes : 1. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$.

N-Channel Typical Electrical and Thermal Characteristic Curves

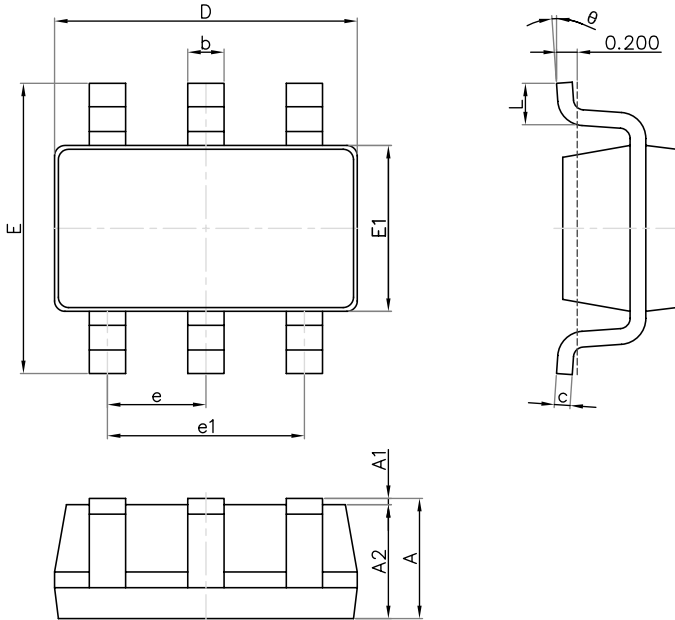


P-Channel Typical Electrical and Thermal Characteristic Curves



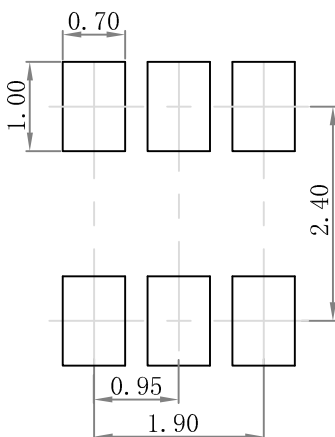
Package Outline Dimensions

SOT-23-6L



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
E1	1.500	1.700	0.059	0.067
E	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°

Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.