



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	28mΩ@10V	4.6A
	46mΩ@4.5V	
-30V	60mΩ@-10V	-3.4A
	95mΩ@-4.5V	

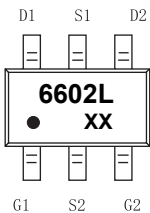
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance

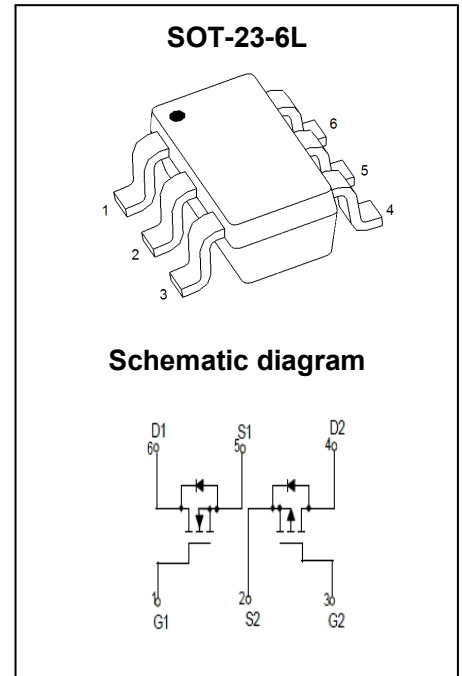
Application

- Backlighting
- DC/DC Converters
- Power Management Functions

MARKING:



6602L = Device Code
XX = Data Code



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

Parameter	Symbol	NMOS	PMOS	Unit
Drain - Source Voltage	V_{DS}	30	-30	V
Gate - Source Voltage	V_{GS}	± 20	± 20	V
Continuous Drain Current ^{1,5}	I_D	4.6	-3.4	A
	$T_A = 25^\circ\text{C}$			
Pulsed Drain Current ²	I_{DM}	18	-13	A
Power Dissipation ^{4,5}	P_D	1.25	1.25	W
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JA}$	100	100	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	-55~ +150	$^\circ\text{C}$

MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)
NMOS:

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off 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 - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics³						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.7	3	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 3.0A$		28	60	m Ω
		$V_{GS} = 4.5V, I_D = 2.0A$		46	100	
Forward tranconductance	g_{FS}	$V_{DS} = 5V, I_D = 3A$	4			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$		293		pF
Output Capacitance	C_{oss}			40		
Reverse Transfer Capacitance	C_{rss}			34		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		1.5		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 15V, V_{GS} = 10V, I_D = 3A$		9		pC
Gate-source Charge	Q_{gs}			1.2		
Gate-drain Charge	Q_{gd}			1.5		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 15V, V_{GS} = 10V, R_L = 5\Omega$ $R_G = 3\Omega$		3		ns
Turn-on Rise Time	t_r			5		
Turn-off Delay Time	$t_{d(off)}$			13		
Turn-off Fall Time	t_f			3		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = 1A$			1.2	V

PMOS:

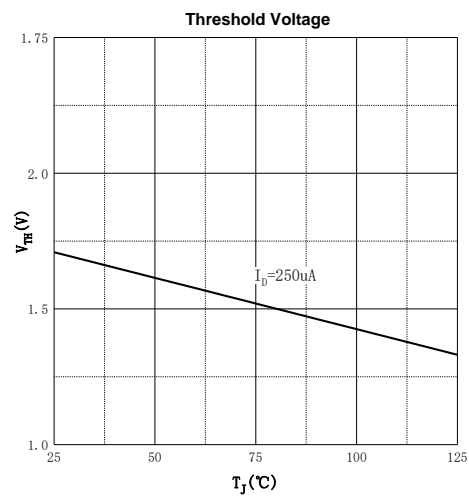
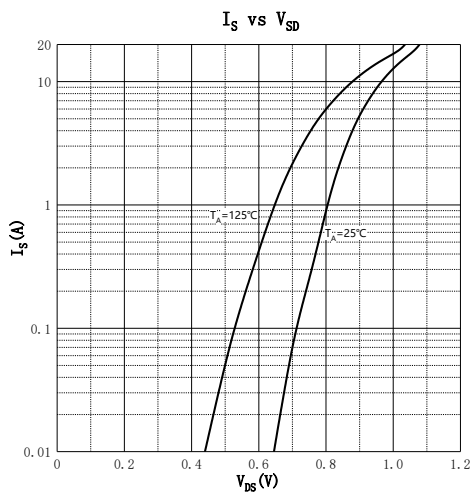
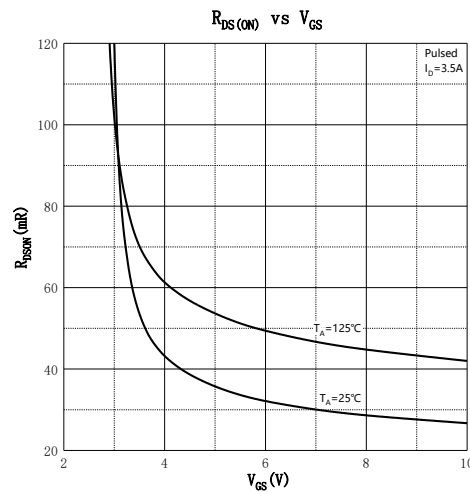
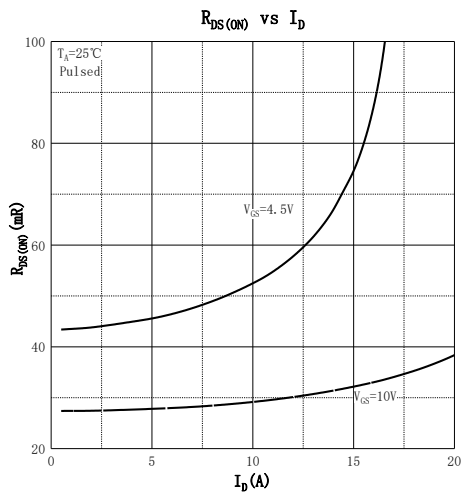
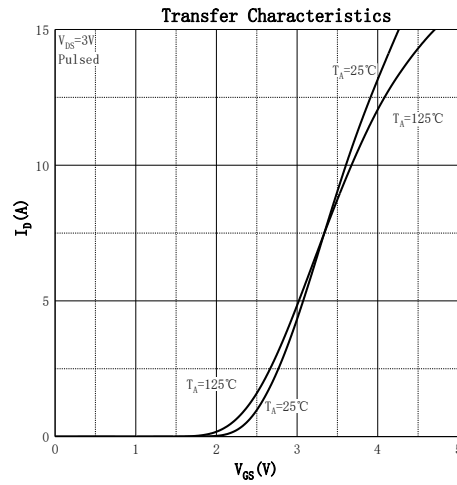
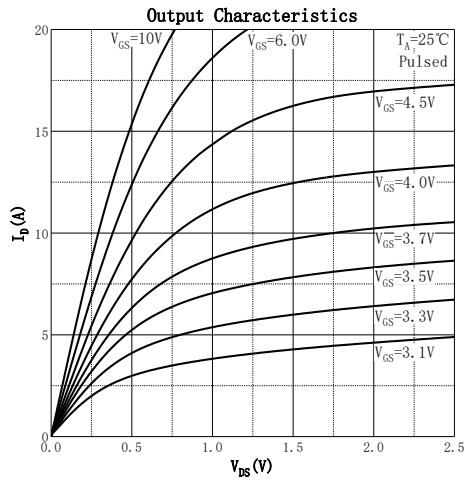
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$			-1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics³						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	-1.7	-3	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -3.0A$		60	95	m Ω
		$V_{GS} = -4.5V, I_D = -2.0A$		95	140	
Forward transconductance	g_{FS}	$V_{DS} = -5V, I_D = -3A$	4			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -30V, V_{GS} = 0V, f = 1MHz$		305		pF
Output Capacitance	C_{oss}			49		
Reverse Transfer Capacitance	C_{rss}			40		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		5		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = -15V, V_{GS} = -10V, I_D = -3A$		6.5		pC
Gate-source Charge	Q_{gs}			0.9		
Gate-drain Charge	Q_{gd}			1.2		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -15V, V_{GS} = -10V, R_L = 5\Omega$ $R_G = 3\Omega$		4.8		ns
Turn-on Rise Time	t_r			7.3		
Turn-off Delay Time	$t_{d(off)}$			18		
Turn-off Fall Time	t_f			12		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = -1A$			-1.2	V

Notes :

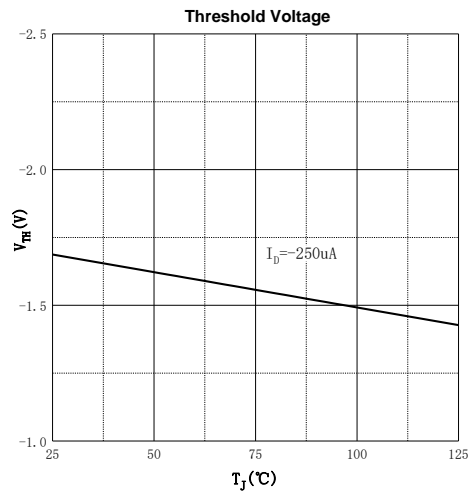
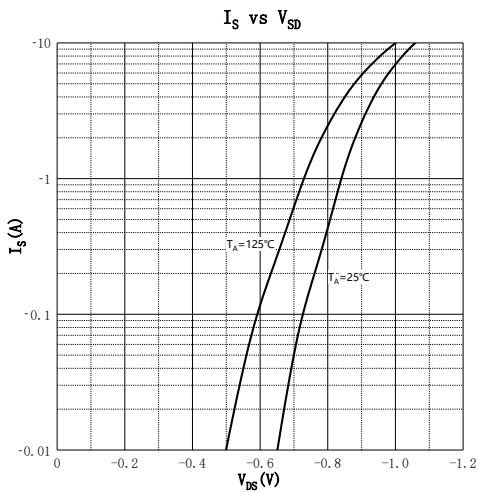
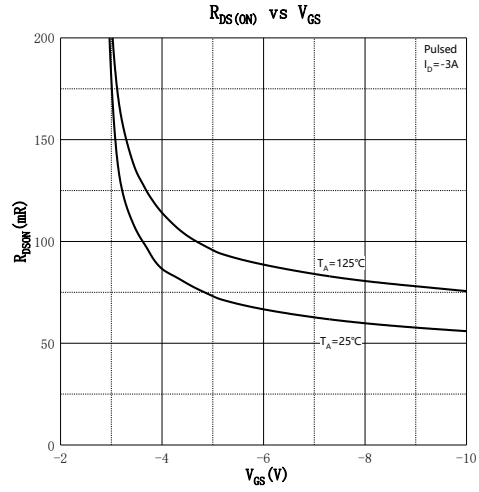
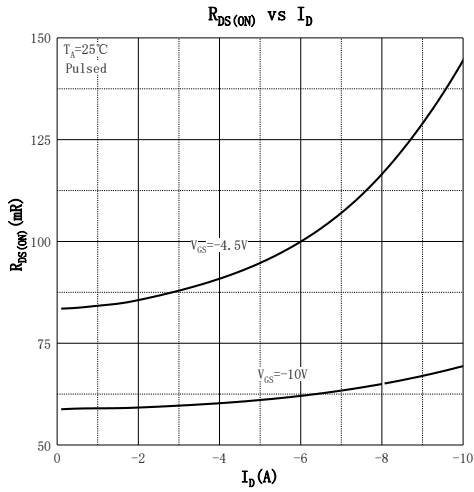
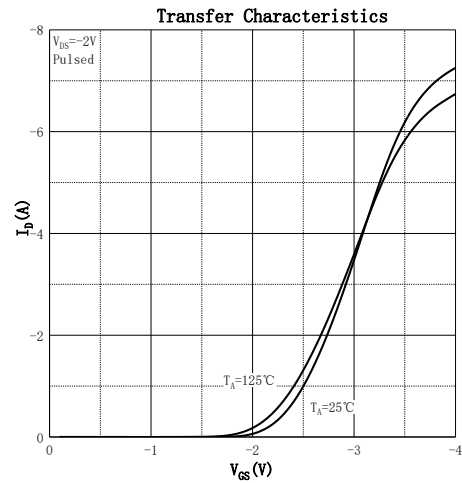
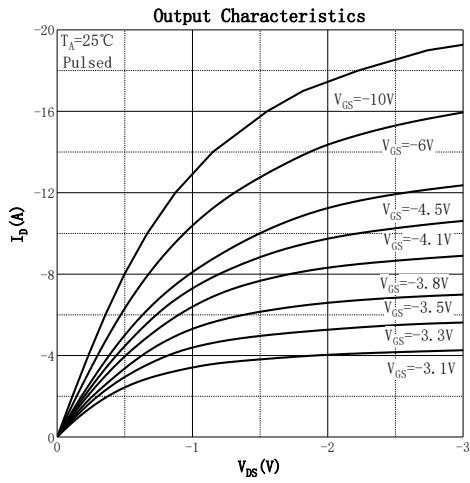
- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ C$.
- 5.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ C$.

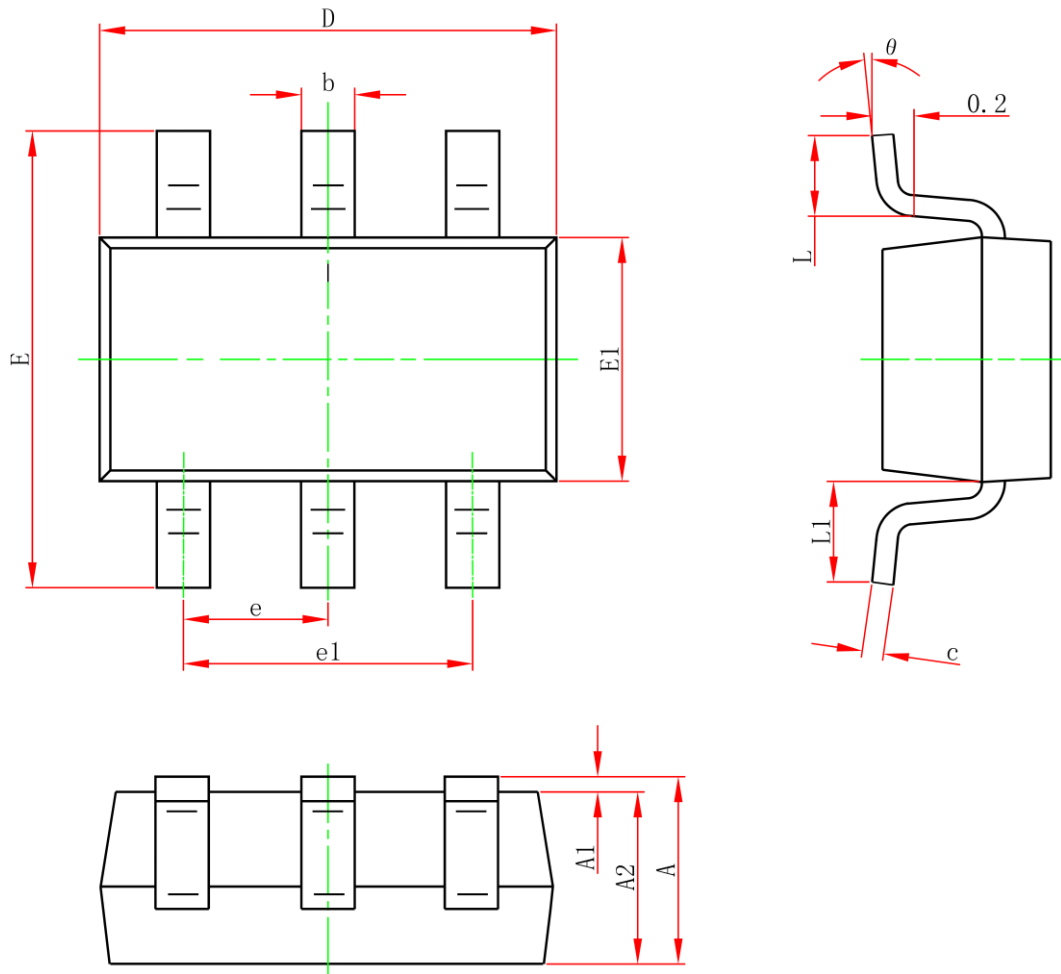
Typical Characteristics

NMOS:



PMOS:



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	0.150	0.000	0.006
A2	1.050	1.250	0.041	0.049
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	2.650	2.950	0.104	0.116
E1	1.500	1.700	0.059	0.067
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
L1	0.600REF		0.024REF	
θ	0°	8°	0°	8°