Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	30mΩ@10V	3.5A
	40mΩ@4.5V	
-30V	60mΩ@-10V	-2.7A
	80mΩ@-4.5V	

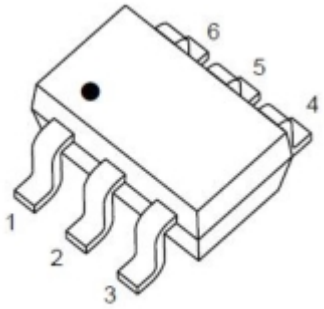
Feature

- TrenchFET Power MOSFET
- Excellent RDS(on) and Low Gate Charge

Application

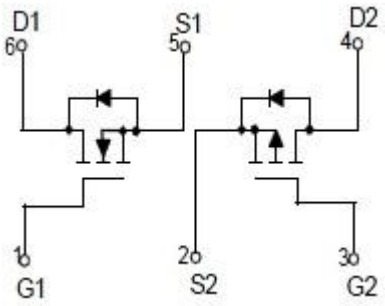
- Load Switch for Portable Devices
- Battery Switch

Package

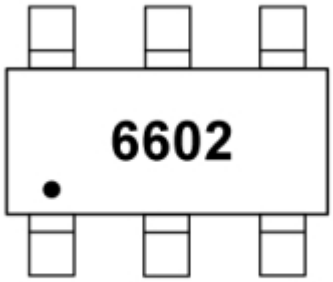


SOT-23-6

Circuit diagram



Marking



6602 = Device code

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value		Unit
		N-Channel	P-Channel	
Drain-Source Voltage	V_{DS}	30	-30	V
Gate-Source Voltage	V_{GS}	±20	±20	V
Continuous Drain Current	I_D	3.5	-2.7	A
Pulsed Drain Current	I_{DM}	20	-15	A
Power Dissipation	P_D	1.15		W
Thermal Resistance from Junction to Ambient(1)	$R_{\theta JA}$	110		℃/W
Junction Temperature	T_J	150		℃
Storage Temperature	T_{STG}	-55~ +150		℃

N-Channel Electrical characteristics

(T_A=25℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =30V, V_{GS} = 0V, T_C=25℃			1	uA
Gate-Body Leakage Current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1	1.5	2.2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =3.6A		30	45	mΩ
		V_{GS} =4.5V, I_D =3A		40	60	
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS}=15V, V_{GS}=0V, f=1MHz		390		pF
Output capacitance	C_{oss}			67		
Reverse transfer capacitance	C_{rss}			41		
Total gate charge	Q_g	V_{GS} =10V, V_{DS} =15V, I_D =3.6A,		4.2		nC
Gate-source charge	Q_{gs}			1		
Gate-drain charge	Q_{gd}			1.3		
Switching Characteristics						
Turn-on Delay Time	$T_{d(on)}$	V_{GS} =4.5V, V_{DD}=15V, R_L=3.6Ω, R_{GEN}=6Ω		11		nS
Turn-on Rise Time	T_r			48		
Turn-Off Delay Time	$T_{d(off)}$			14		
Turn-Off Fall Time	t_f			9		
Source-Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	I_S=3.5A, V_{GS}=0V			1.2	V
Maximum Body-Diode Continuous Current	I_S				3.5	A

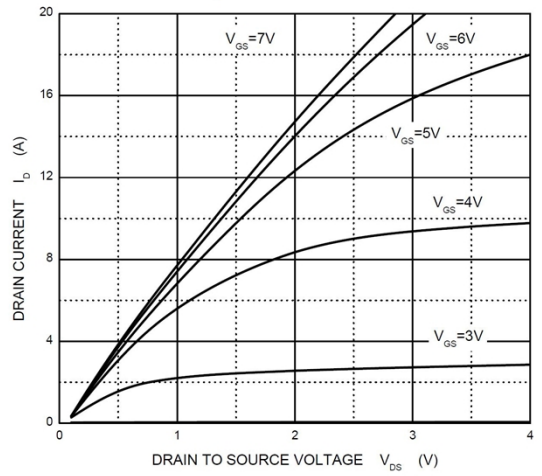
P-Channel Electrical characteristics

(T_A=25℃, unless otherwise noted)

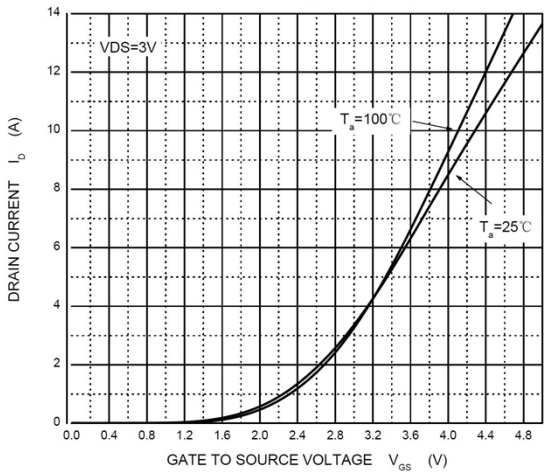
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-30V, V_{GS} = 0V			-1	uA
Gate-Body Leakage Current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1	-1.5	-2.4	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-3.0A		60	90	mΩ
		V_{GS} =-4.5V, I_D =-2.0A		80	120	
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		375		pF
Output capacitance	C_{oss}			63		
Reverse transfer capacitance	C_{rss}			47		
Turn-on Delay Time	$T_{d(on)}$	V_{GS} =-10V, V_{DD}=-15V, R_L=2.5Ω, I_D =-1A, R_G=3Ω		14		nS
Turn-on Rise Time	T_r			61		
Turn-Off Delay Time	$T_{d(off)}$			19		
Turn-Off Fall Time	t_f			10		
Switching Characteristics						
Total gate charge	Q_g	V_{GS} =-10V, V_{DS} =-15V, I_D =-3A,		4.2		nC
Gate-source charge	Q_{gs}			1		
Gate-drain charge	Q_{gd}			1.3		
Source-Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	I_S=-2.7A, V_{GS}=0V		0.8	-1.2	V
Maximum Body-Diode Continuous Current	I_S				-2.7	A

N-Channel Typical Characteristics

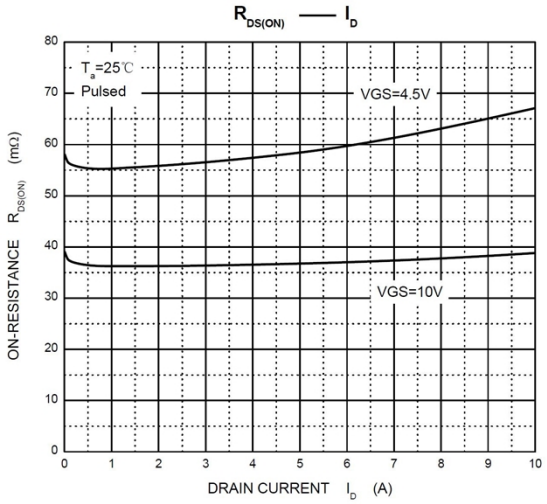
Output Characteristics



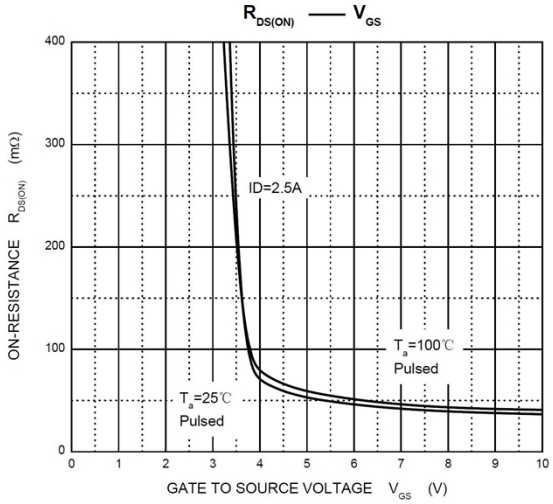
Transfer Characteristics



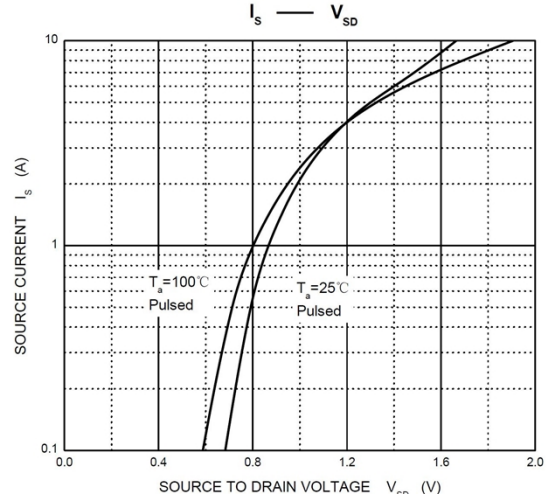
$R_{DS(ON)}$ —— I_D



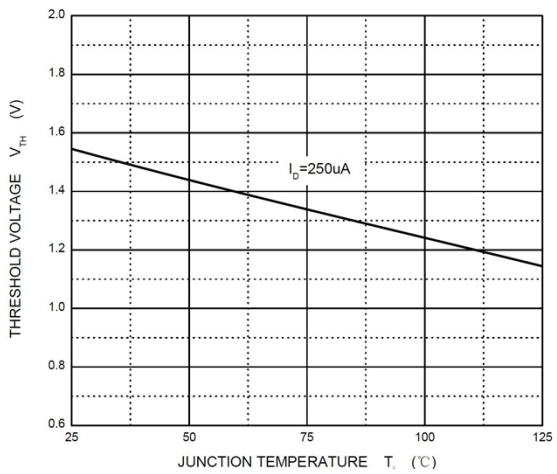
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}

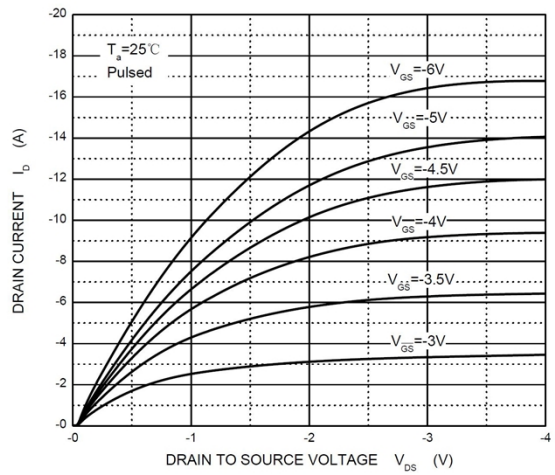


Threshold Voltage

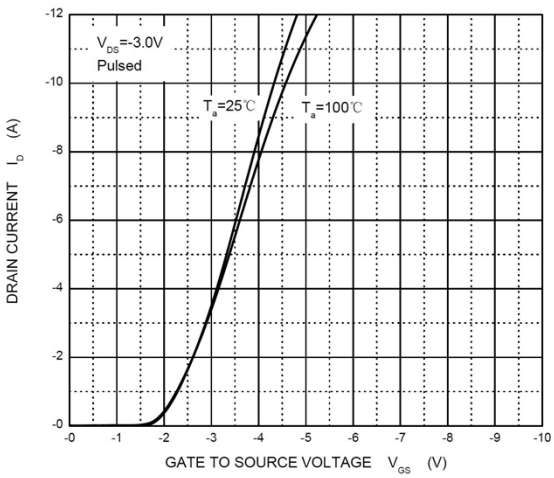


P-Channel Typical Characteristics

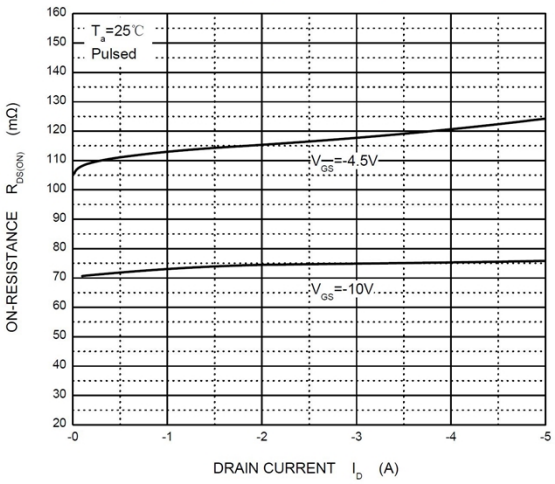
Output Characteristics



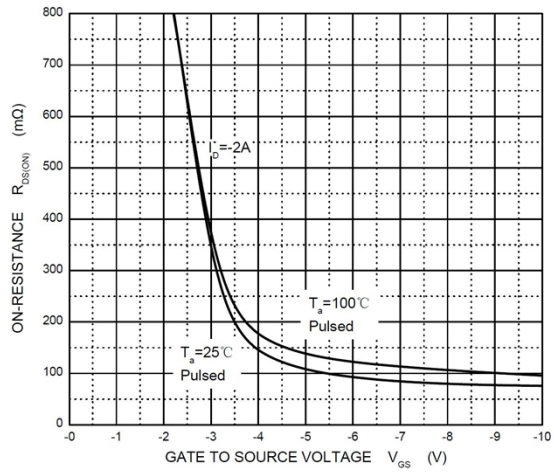
Transfer Characteristics



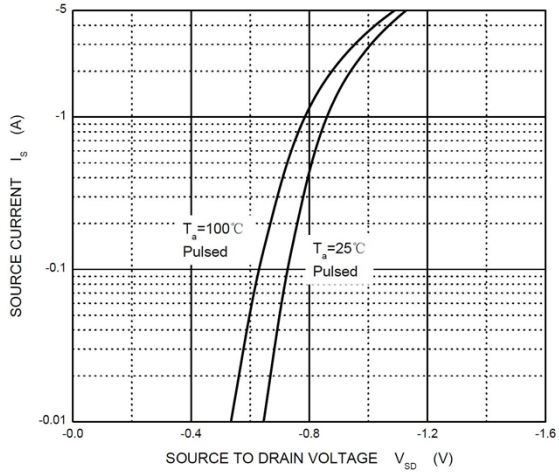
RDS(ON) — ID



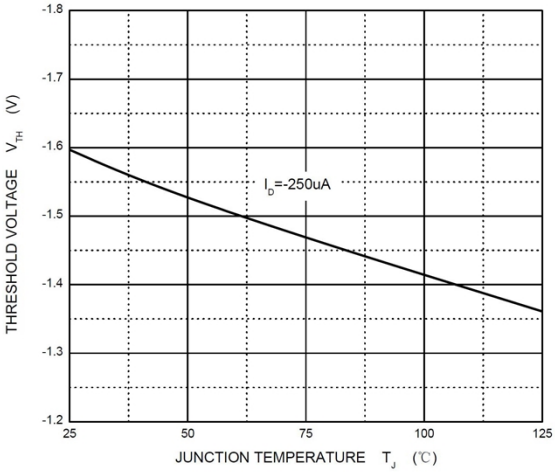
RDS(ON) — VGS



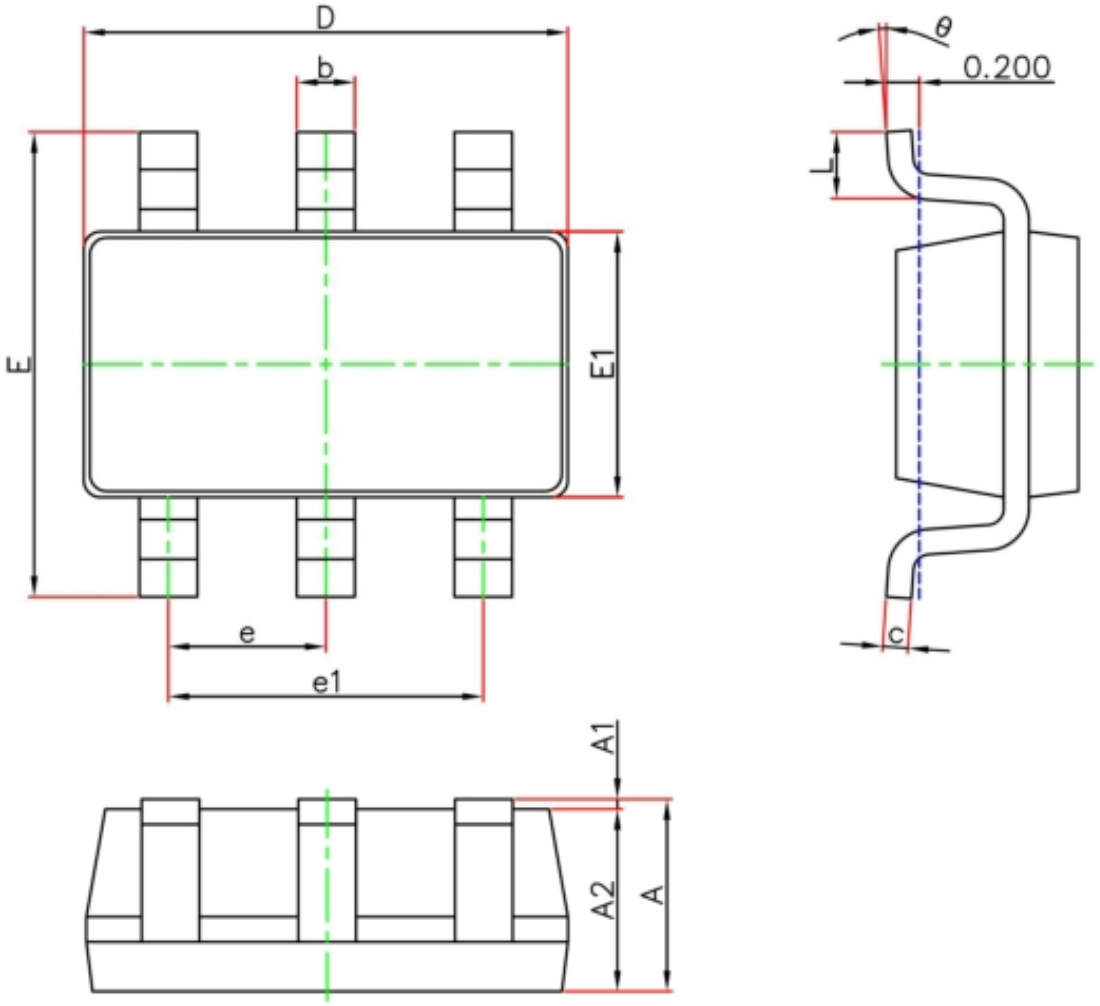
IS — VSD



Threshold Voltage



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
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°