

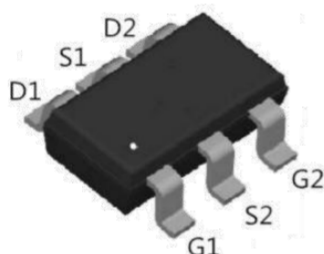
Product Summary

- V_{DS} -30 V
- I_{DS} -3.5A
- $R_{DS(ON)}$ (at $V_{GS}=-10V$) <88m Ω
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <138m Ω

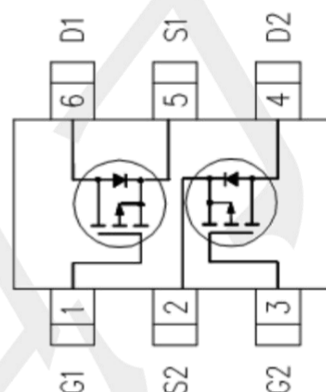
Application

- Battery protection
- Load switch
- Power management
- DC/DC converter

Package and Pin Configuration



Circuit diagram



Marking: 2623

Absolute Maximum Ratings (T_c=25°C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-3.5	A
Pulsed Drain Current (note 1)	I_{DM}	-12	A
Total Power Dissipation (note 2)	P_{DTOT}	1.8	W
Operating Junction Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C

Notes : 1. Pulse width limited by Max.junction temperature.

2.Per element must not be exceeded

Thermal Characteristic

PARAMETER		Symbol	Value	Unit
Junction-to-Ambient Thermal Resistance	PCB Mount (Note)	R_{thJA}	115	°C/W

Note : When mounted on 1" square PCB (FR4 material).

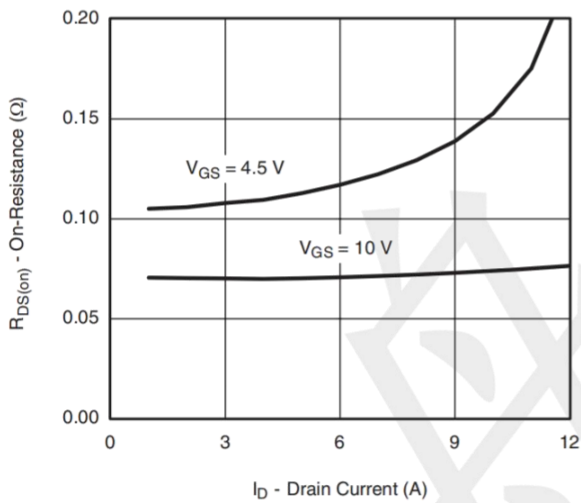
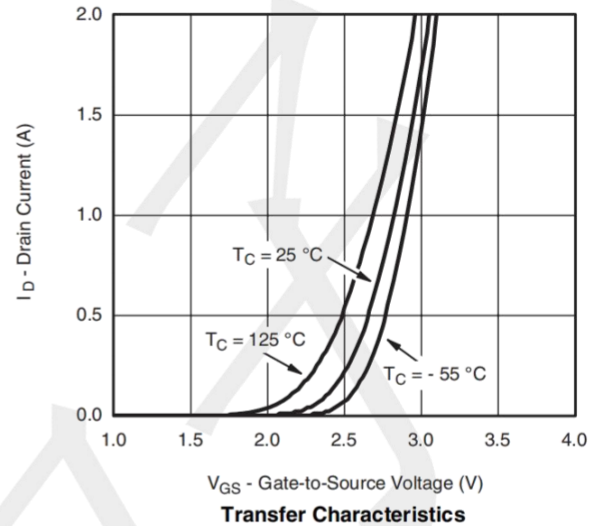
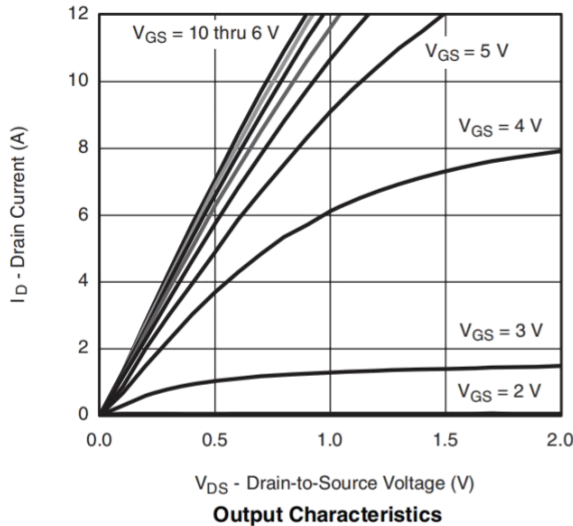
Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D = -250\mu A$	BV_{DSS}	-30	--	--	V
Gate-Source Threshold Voltage	$V_{DS}=V_{GS}, I_D = -250\mu A$	$V_{GS(th)}$	-1	-2	-3	V
Gate-Source Leakage	$V_{DS}=0V, V_{GS}= \pm 20V$	I_{GSS}	--	--	± 100	nA
Zero Gate Voltage Drain Current	$V_{DS}= -30V, V_{GS}=0V$	I_{DSS}	--	--	-1	μA
	$V_{DS}= -30V, T_J=55^{\circ}C$		--	--	-10	μA
Drain-Source On-State Resistance (Note 1)	$V_{GS}= -10V, I_D = -3.5A$	$R_{DS(on)}$	--	77	88	m Ω
	$V_{GS}= -4.5V, I_D = -2.5A$		--	110	138	
Forward Transconductance (Note 2)	$V_{DS}= -10V, I_D = -3.5A$	g_{fs}	--	7	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	$V_{DS} = -15V, I_D = -2.5A,$ $V_{GS} = -4.5V$	Q_g	--	4.1	--	nC
Gate-Source Charge (Note 3)		Q_{gs}	--	1.3	--	
Gate-Drain Charge (Note 3)		Q_{gd}	--	1.8	--	
Input Capacitance	$V_{DS} = -15V, V_{GS} = 0V,$ $F= 1.0MHz$	C_{iss}	--	340	--	pF
Output Capacitance		C_{oss}	--	67	--	
Reverse Transfer Capacitance		C_{rss}	--	51	--	
Switching						
Turn-On Delay Time (Note 3)	$V_{DD} = -15V, I_D = -1A,$ $V_{GEN} = -4.5V,$ $R_L = 15\Omega, R_G = 1\Omega$	$t_{d(on)}$	--	40	--	nS
Rise Time (Note 3)		t_r	--	40	--	
Turn-Off Delay Time (Note 3)		$t_{d(off)}$	--	20	--	
Fall Time (Note 3)		t_f	--	17	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	$V_{GS} = 0V, I_F = -0.75A$	V_{SD}	--	-0.8	-1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I_S	--	--	-1.5	A
Pulsed Current (Note 1)		I_{SM}	--	--	-12	A

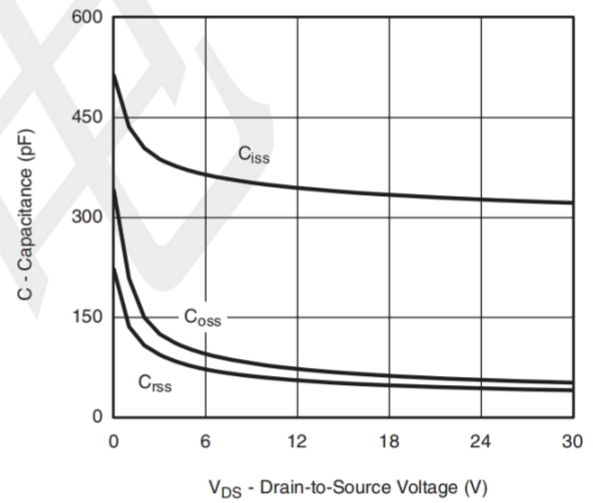
Notes:

1. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

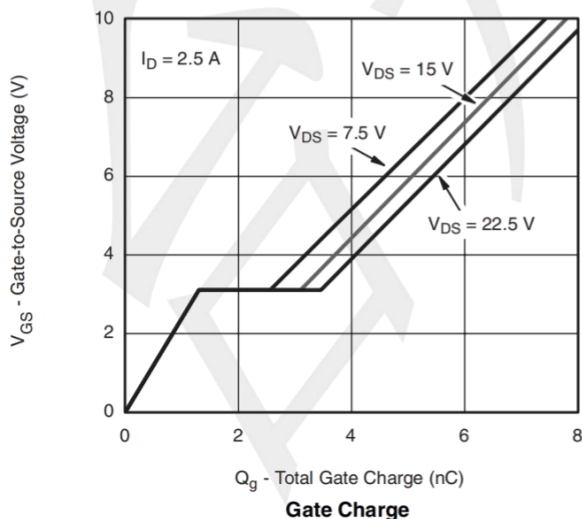
TYPICAL CHARACTERISTICS(25 °C, unless otherwise noted)



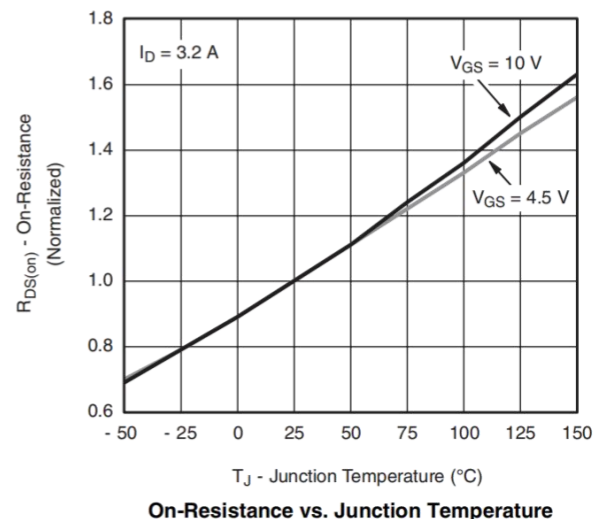
On-Resistance vs. Drain Current and Gate Voltage



Capacitance



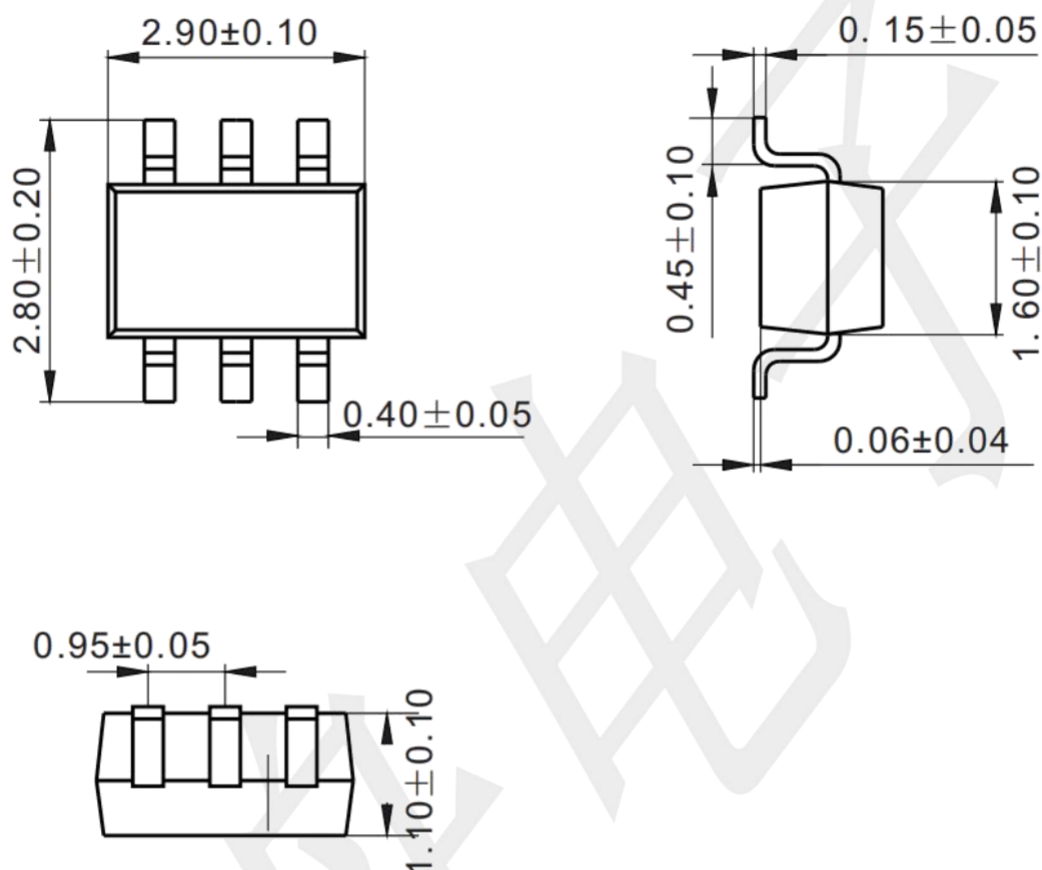
Gate Charge



On-Resistance vs. Junction Temperature

Package Outline & Dimensions

SOT23-6L



Mounting Pad Layout (unit: mm)

