

Dual N-Channel MOSFET

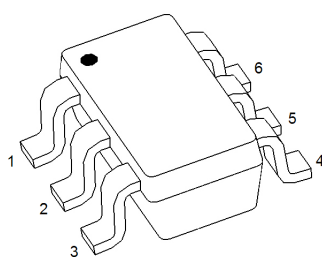
● Features

V_{DS}	$R_{DS(ON)TYP}$	I_D
20V	19.5 mΩ@4.5V	5A
	24 mΩ@2.5V	

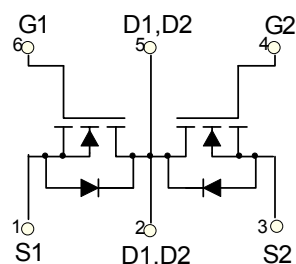
● General Description

- Power Management
- Battery Protection

● Pin Configurations



SOT-23-6L



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}	± 10	V
Continuous Drain Current ($T_a=25^{\circ}\text{C}$)	I_D	5	A
Pulsed Drain Current (note 1)	I_{DM}	25	A
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	83.3	$^{\circ}\text{C/W}$
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 10 s)	T_L	260	$^{\circ}\text{C}$

Electrical Characteristics

$T_a = 25^\circ\text{C}$ unless otherwise specified

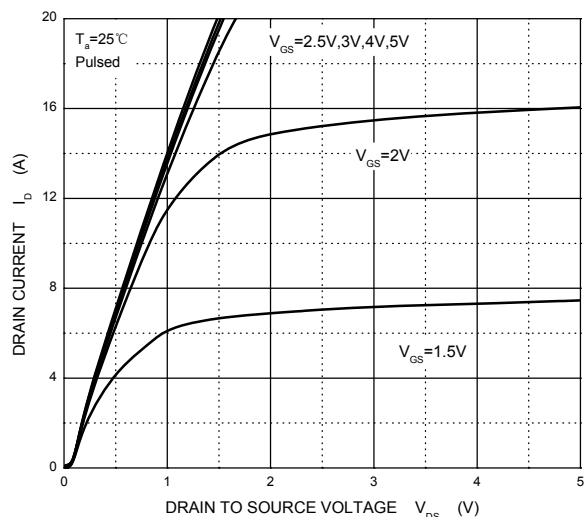
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERICTISCS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 18V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage (note 3)	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.45	0.7	1.2	V
Drain-source on-resistance (note 3)	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 3A$		19.5	27	m Ω
		$V_{GS} = 2.5V, I_D = 3A$		24	35	m Ω
Forward tranconductance (note 3)	g_{FS}	$V_{DS} = 5V, I_D = 4.5A$		10		S
Diode forward voltage (note 3)	V_{SD}	$I_S = 1.25A, V_{GS} = 0V$			1.2	V
DYNAMIC CHARACTERICTISCS (note4)						
Input Capacitance	C_{iss}	$V_{DS} = 8V, V_{GS} = 0V, f = 1MHz$		800		pF
Output Capacitance	C_{oss}			155		pF
Reverse Transfer Capacitance	C_{rss}			125		pF
SWITCHING CHARACTERICTISCS (note 4)						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 10V, V_{GS} = 4V, I_D = 1A, R_{GEN} = 10\Omega$		18		ns
Turn-on rise time	t_r			5		ns
Turn-off delay time	$t_{d(off)}$			43		ns
Turn-off fall time	t_f			20		ns
Total Gate Charge	Q_g	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 4A$		11		nC
Gate-Source Charge	Q_{gs}			2.3		nC
Gate-Drain Charge	Q_{gd}			2.5		nC

Notes :

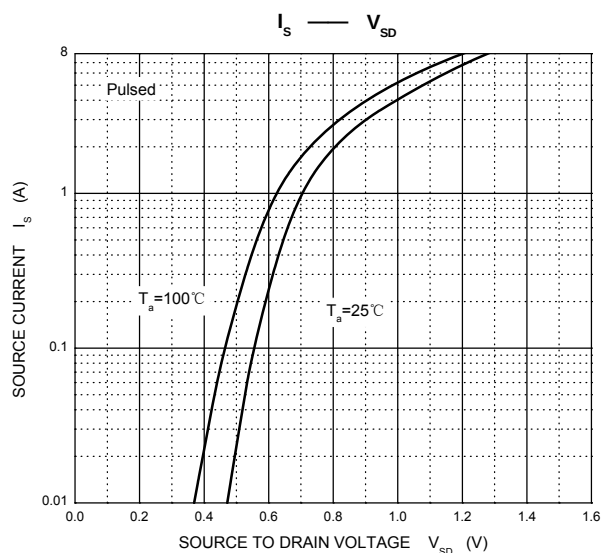
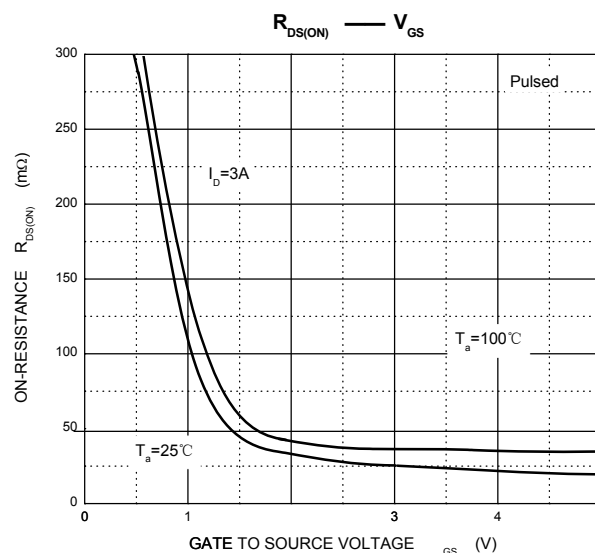
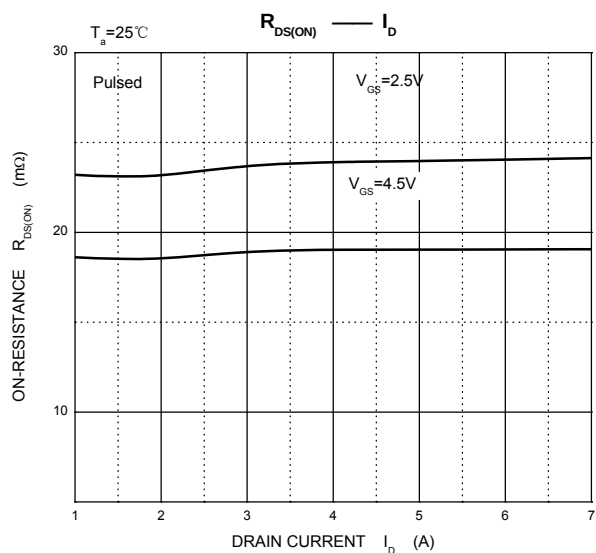
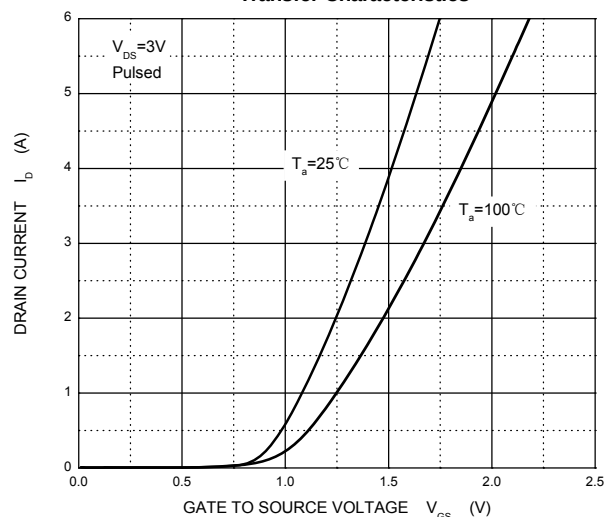
1. Repetitive rating: Pulse width limited by maximum junction temperature
2. Surface mounted on FR4 board using 1 square inch pad size, 1oz single-side copper.
3. Pulse test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production.

Typical Electrical and Thermal Characteristics

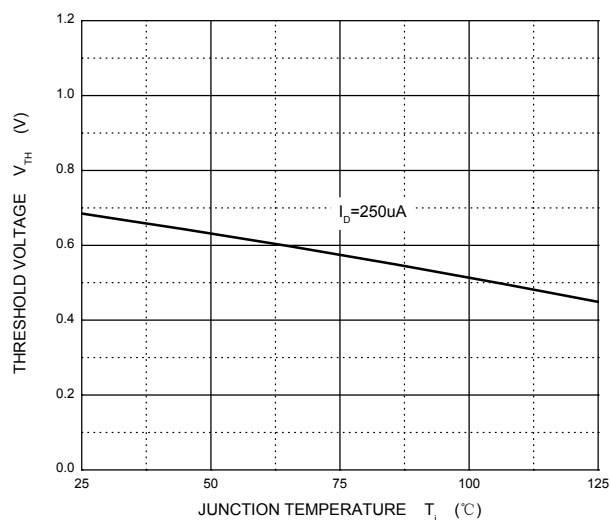
Output Characteristics



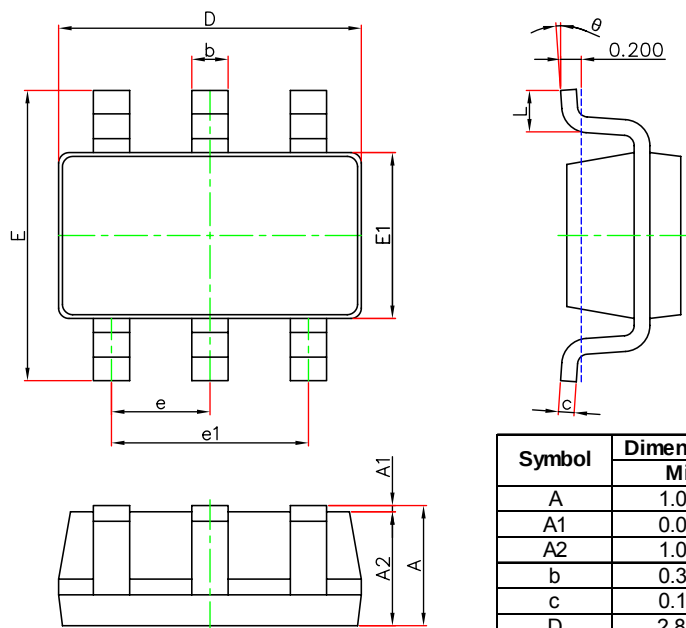
Transfer Characteristics



Threshold Voltage



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°