

**Features**

	$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
$Q_1$	25V	270mΩ@4.5V	0.8 A
		320mΩ@2.5V	
		800mΩ@1.8V	

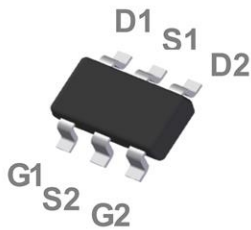
**Application**

- Notebook
- Load Switch
- Networking
- Hand-held Instruments

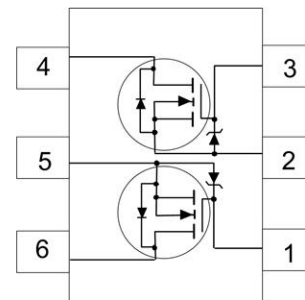
- ESD Protected

**Package and Pin Configuration**

**SOT23-6**



**Circuit diagram**



**Marking: 301P**

**Absolute Maximum Ratings**  $T_c=25^\circ\text{C}$  unless otherwise noted

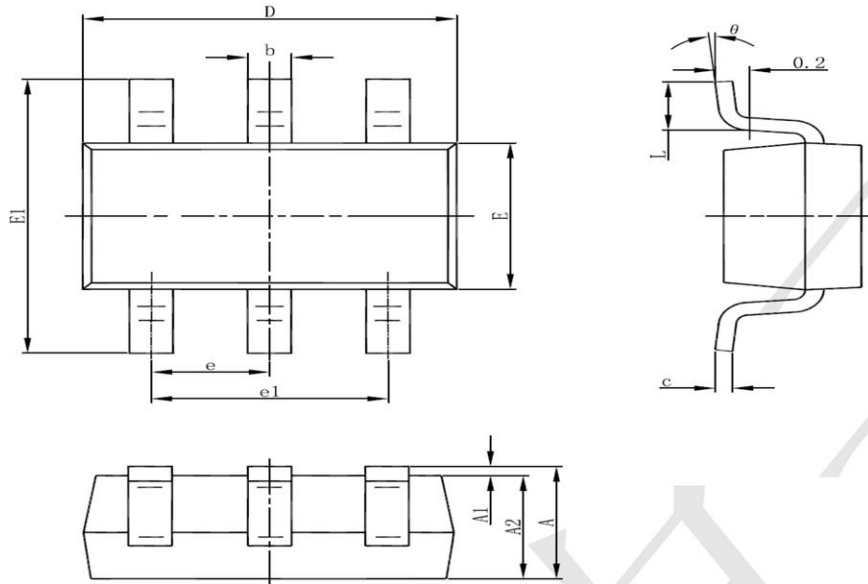
Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	25	V
Typical Gate-Source Voltage	$V_{GS}$	$\pm 8$	V
Continuous Drain Current (note 1)	$I_D$	0.8	A
Pulsed Drain Current ( $t_p=10\mu\text{s}$ )	$I_{DM}$	1.3	A
Maximum Power Dissipation		0.9	W
<b>Temperature and Thermal Resistance</b>			
Thermal Resistance from Junction to Ambient (note 1)	$R_{\theta JA}$	140	$^\circ\text{C/W}$
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<sub>J</sub>=25 °C, unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>STATIC CHARACTERISTICS</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	25			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = 20V, V <sub>GS</sub> = 0V			1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±12V, V <sub>DS</sub> = 0V			±20	uA
Gate threshold voltage (note 2)	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	0.45	0.7	1.1	V
Drain-source on-resistance(note 2)	R <sub>DS(on)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 0.65A			270	mΩ
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 0.55A			320	mΩ
		V <sub>GS</sub> = 1.8V, I <sub>D</sub> = 0.45A			800	mΩ
Forward tranconductance(note 2)	g <sub>FS</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 0.8A		1.6		S
Diode forward voltage	V <sub>SD</sub>	I <sub>S</sub> = 0.15A, V <sub>GS</sub> = 0V			1.2	V
<b>DYNAMIC CHARACTERISTICS (note 4)</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 16V, V <sub>GS</sub> = 0V, f = 1MHz			120	pF
Output Capacitance	C <sub>oss</sub>				20	pF
Reverse Transfer Capacitance	C <sub>rss</sub>				15	pF
<b>SWITCHING CHARACTERISTICS (note 3,4)</b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>GS</sub> = 4.5V, V <sub>DS</sub> = 10V, I <sub>D</sub> = 500mA, R <sub>GEN</sub> = 10Ω		6.7		ns
Turn-on rise time	t <sub>r</sub>			4.8		ns
Turn-off delay time	t <sub>d(off)</sub>			17.3		ns
Turn-off fall time	t <sub>f</sub>			7.4		ns



SOT23-6 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
E	1.500	1.700	0.059	0.067
E1	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
$\theta$	0°	8°	0°	8°

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