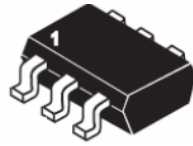
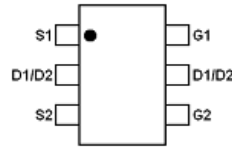
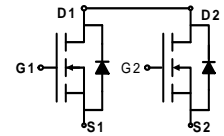


Main Product Characteristics:

V_{DSS}	20V
$R_{DS(on)}$	21m Ω (typ.)
I_D	6A


SOT23-6

**Marking and pin
Assignment**

Schematic diagram
Features and Benefits:

- Advanced trench MOSFET process technology
- Special designed for battery protection, load switching and general power management
- Ultra low on-resistance with low gate charge
- Fast switching and reverse body recovery
- 150°C operating temperature


Description:

It utilizes the latest trench processing techniques to achieve the high cell density and reduces the on-resistance with high repetitive avalanche rating. These features combine to make this design an extremely efficient and reliable device for use in battery protection, power switching application and a wide variety of other applications

Absolute max Rating:

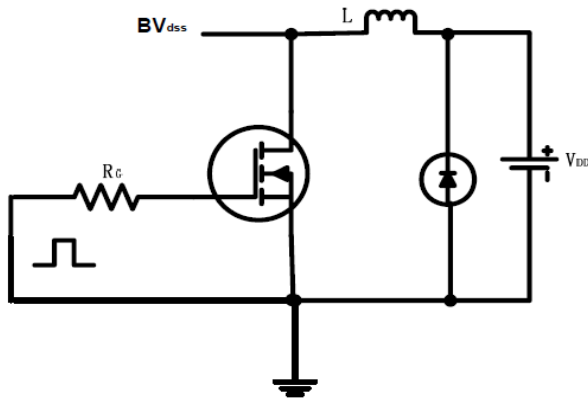
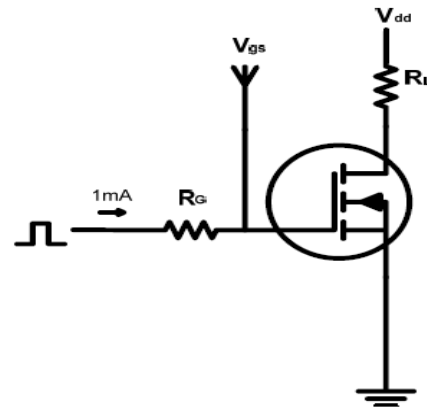
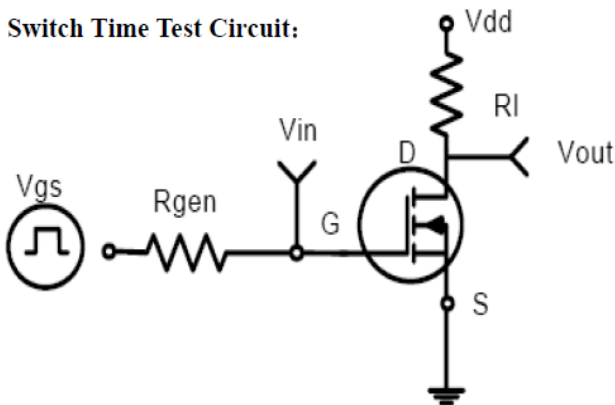
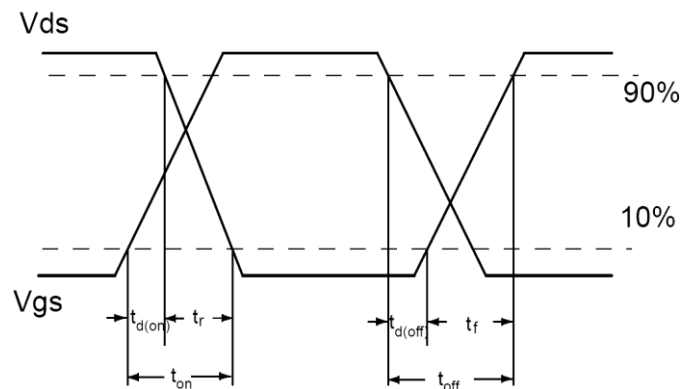
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous@ Current-Pulsed (Note 1)	I_D	6	A
	I_{DM}	25	A
Maximum Power Dissipation	P_D	1.4	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	$^{\circ}C$

Thermal Resistance

Thermal Resistance, Junction-to-Ambient (Note 2)	$R_{\theta JA}$	100	$^{\circ}C/W$
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Electrical Characterizes @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

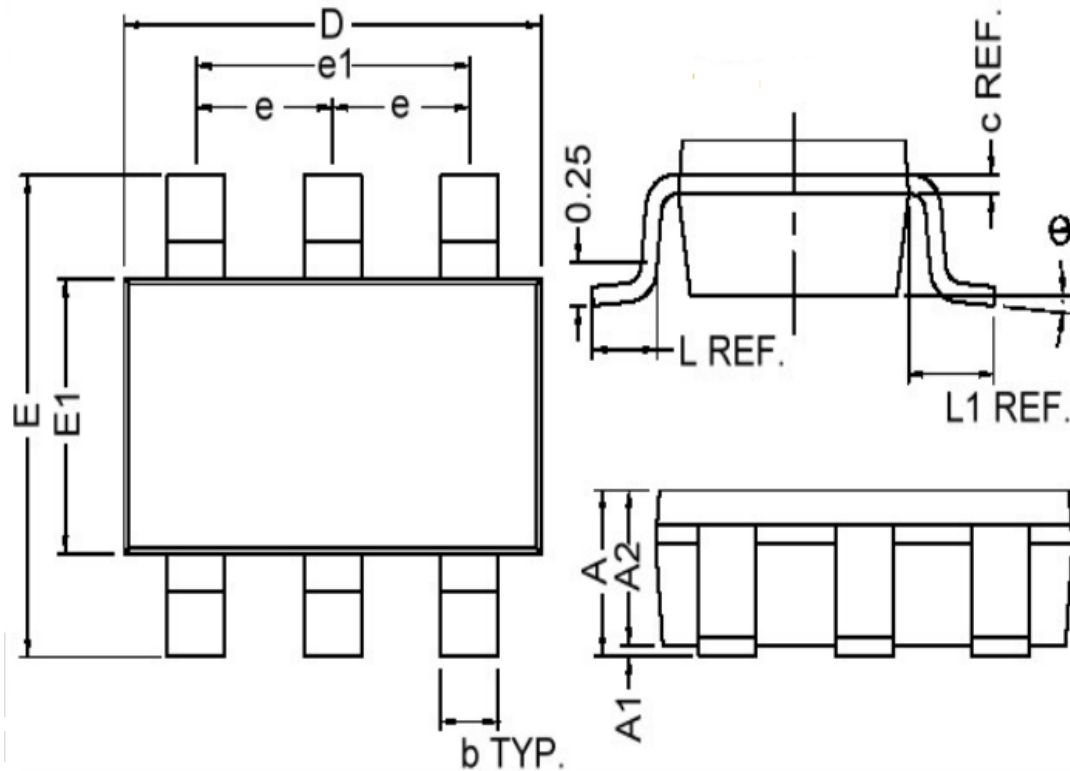
Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=16V, V_{GS}=0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$			± 100	nA
ON CHARACTERISTICS (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.6		1.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=6A$		21	25	m Ω
		$V_{GS}=2.5V, I_D=5.2A$		26	32	m Ω
Forward Transconductance	g_{FS}	$V_{DS}=5V, I_D=6A$		22		S
DYNAMIC CHARACTERISTICS (Note4)						
Input Capacitance	C_{ISS}	$V_{DS}=8V, V_{GS}=0V,$ $F=1.0\text{MHz}$		610		PF
Output Capacitance	C_{OSS}			320		PF
Reverse Transfer Capacitance	C_{RSS}			140		PF
SWITCHING CHARACTERISTICS (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=10V, I_D=1A$ $V_{GS}=4.5V, R_{GEN}=6\Omega$		11		nS
Turn-on Rise Time	t_r			12		nS
Turn-Off Delay Time	$t_{d(off)}$			35		nS
Turn-Off Fall Time	t_f			30		nS
Total Gate Charge	Q_g	$V_{DS}=10V, I_D=6A,$ $V_{GS}=4.5V$		5		nC
Gate-Source Charge	Q_{gs}			1.5		nC
Gate-Drain Charge	Q_{gd}			2		nC
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage (Note 3)	V_{SD}	$V_{GS}=0V, I_S=2A$		0.82	1.2	V
Diode Forward Current (Note 2)	I_S				1.7	A

Test circuits and Waveforms
EAS test circuits:

Gate charge test circuit:

Switch Time Test Circuit:

Waveforms:

NOTES:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

Mechanical Data:

SOT23-6 Dimensions in Millimeters (UNIT:mm)



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.10 MAX.		L	0.45 REF.	
A1	0	0.10	L1	0.60 REF.	
A2	0.70	1.00	θ	0°	10°
c	0.12 REF.		b	0.30	0.50
D	2.70	3.10	e	0.95 REF.	
E	2.60	3.00	e1	1.90 REF.	
E1	1.40	1.80			

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