



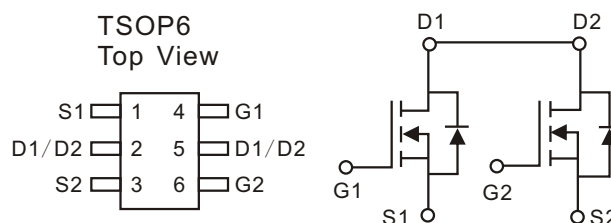
Dual N-Channel 20V(D-S) MOSFET

These miniature surface mount MOSFET utilize High Cell Density process. Low $R_{DS(on)}$ assures minimal power loss and conserves energy, making this device ideal for use in power management circuitry. Typical applications are DC-DC converters, power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

- Low $R_{DS(on)}$ Provides Higher Efficiency and Extends Battery Life
- Low gate charge 7nC
- High performance
- High current handling
- Miniature TSOP-6 Surface Mount Package Saves Board Space

PRODUCT SUMMARY

V_{DS} (V)	$R_{DS(on)}$ (ohm)	I_D (A)
20	0.023 @ $V_{GS} = 4.5V$	6.0
	0.033 @ $V_{GS} = 2.5V$	5.2



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 10	
Continuous Drain Current ^a	$T_A = 25^\circ\text{C}$	I_D	5.8	A
	$T_A = 70^\circ\text{C}$		3.7	
Pulsed Drain Current ^b		I_{DM}	10	
Continuous Source Current (Diode Conduction) ^a		I_S	0.46	A
Power Dissipation ^a	$T_A = 25^\circ\text{C}$	P_D	1.25	W
	$T_A = 70^\circ\text{C}$		0.8	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

Parameter		Symbol	Maximum	Units
Maximum Junction-to-Ambient ^a	$t \leq 5 \text{ sec}$	R_{THJA}	100	$^\circ\text{C/W}$
	Steady-State		166	

Notes: a. Surface Mounted on 1" x 1" FR4 Board.

b. Pulse width limited by maximum junction temperature

**SPECIFICATIONS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)**

Parameter	Symbol	Test Conditions	Limits			Units
			Min	Typ	Max	
Static						
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	20			V
Gate–Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	0.80	1.5	
Gate–Body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 10V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=16V, V_{GS}=0V$			1	uA
		$V_{DS}=20V, V_{GS}=0V, T_J=55^{\circ}C$			10	
On–State Drain Current ^a	$I_{D(on)}$	$V_{DS}=5V, V_{GS}=4.5V$	10			A
Drain–Source On–Resistance ^a	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=6.0A$	20	23	26	mΩ
		$V_{GS}=2.5V, I_D=5.2A$	30	33	37	
Forward Tranconductance ^a	g_{fs}	$V_{DS}=5V, I_D=3.0A$		11		S
Diode Forward Voltage	V_{SD}	$I_S=2.00A, V_{GS}=0V$		0.80	1.20	v
Dynamic ^b						
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V$ $I_D=4.0A$		11		nC
Gate–Source Charge	Q_{gs}			2.20		
Gate–Drain Charge	Q_{gd}			2.50		
Switching						
Turn–On Delay Time	$t_{d(on)}$	$V_{DD}=10V, I_D=1A,$ $R_G=10\text{ ohm}, V_{GEN}=4.5V$		9	17	ns
Rise Time	t_r			11	18	
Turn–Off Delay Time	$t_{d(off)}$			18	29	
Fall–Time	t_f			5	10	

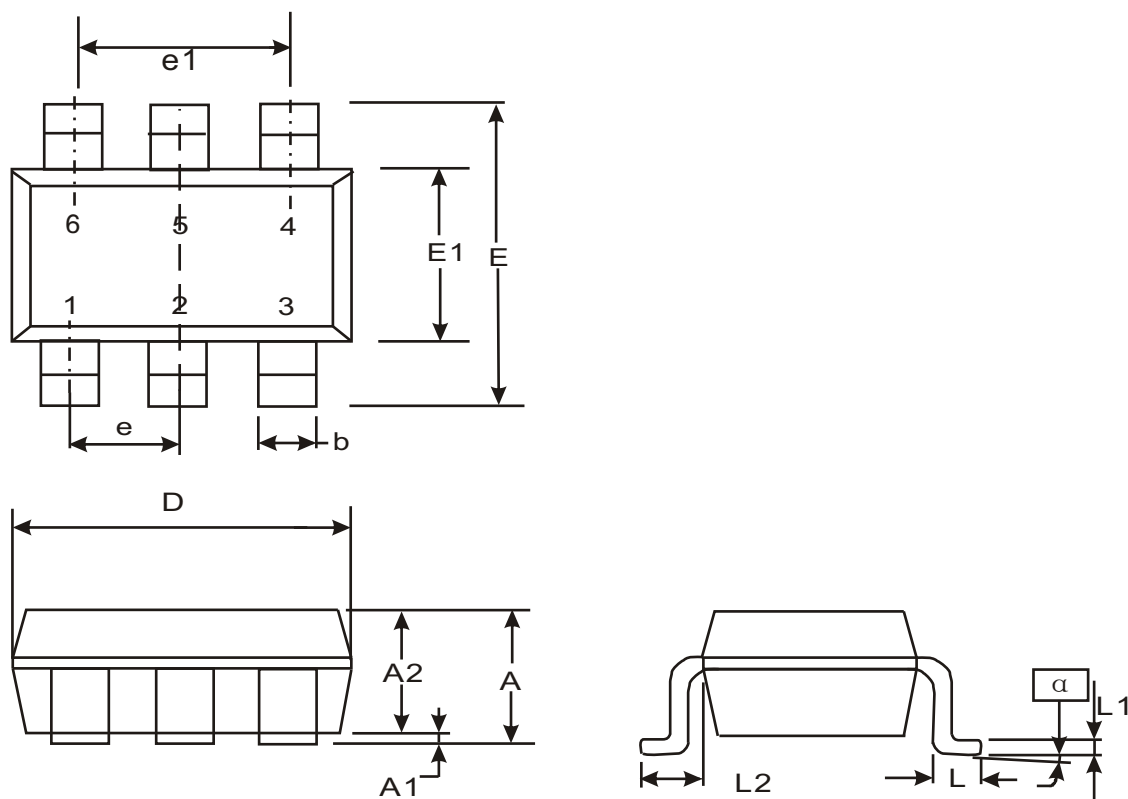
Notes: a. Pulse test: $PW \leq 300\mu s$ duty cycle $\leq 2\%$.

b. Guaranteed by design, not subject to production testing.

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Packaging Information

TSOP-6



Dim	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.95	1.45	0.037	0.057
A1	0.05	0.15	0.002	0.006
A2	0.90	1.30	0.035	0.051
b	0.35	0.55	0.0138	0.0217
D	2.8	3.00	0.110	0.118
E	2.6	3.00	0.102	0.118
E1	1.5	1.70	0.059	0.067
e	0.95		0.037	
e1	1.90		0.075	
L	0.35	0.55	0.014	0.022
L1	0.20BSC		0.008BSC	
L2	0.5	0.7	0.020	0.028
α	0°	10°	0°	10°