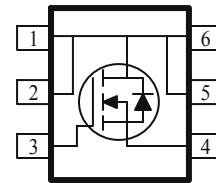
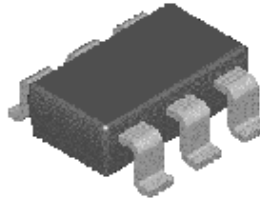


N-Channel 20V (D-S) MOSFET

These miniature surface mount MOSFETs 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 power switch, 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
- Fast Switch
- Miniature TSOP-6 Surface Mount Package Saves Board Space

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (Ω)	I_D (A)
20	0.025 @ $V_{GS} = 4.5$ V	7.4
	0.035 @ $V_{GS} = 2.5$ V	6.2



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}	± 8	
Continuous Drain Current ^a	I_D	$T_A=25^\circ\text{C}$	7.4
		$T_A=70^\circ\text{C}$	6.0
Pulsed Drain Current ^b	I_{DM}	± 20	A
Continuous Source Current (Diode Conduction) ^a	I_S	1.6	
Power Dissipation ^a	P_D	$T_A=25^\circ\text{C}$	2.0
		$T_A=70^\circ\text{C}$	1.3
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	R_{THJA}	$t \leq 5$ sec	62.5
		Steady-State	110

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			Unit
			Min	Typ	Max	
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	0.7			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 8 \text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 16 \text{ V}, V_{GS} = 0 \text{ V}$			1	μA
		$V_{DS} = 16 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 55^\circ\text{C}$			10	
On-State Drain Current ^A	$I_{D(on)}$	$V_{DS} = 5 \text{ V}, V_{GS} = 4.5 \text{ V}$	10			A
Drain-Source On-Resistance ^A	$r_{DS(on)}$	$V_{GS} = 4.5 \text{ V}, I_D = 7.4 \text{ A}$			25	m Ω
		$V_{GS} = 2.5 \text{ V}, I_D = 6.2 \text{ A}$			35	
Forward Transconductance ^A	g_s	$V_{DS} = 10 \text{ V}, I_D = 4.0 \text{ A}$		11.3		S
Diode Forward Voltage	V_{SD}	$I_S = 1.6 \text{ A}, V_{GS} = 0 \text{ V}$		0.75		V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = 10 \text{ V}, V_{GS} = 4.5 \text{ V}, I_D = 7.4 \text{ A}$		13.4		nC
Gate-Source Charge	Q_{gs}			0.9		
Gate-Drain Charge	Q_{gd}			2.0		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10 \text{ V}, R_L = 15 \Omega, I_D = 1 \text{ A}, V_{GEN} = 4.5 \text{ V}$		8		ns
Rise Time	t_r			24		
Turn-Off Delay Time	$t_{d(off)}$			35		
Fall-Time	t_f			10		

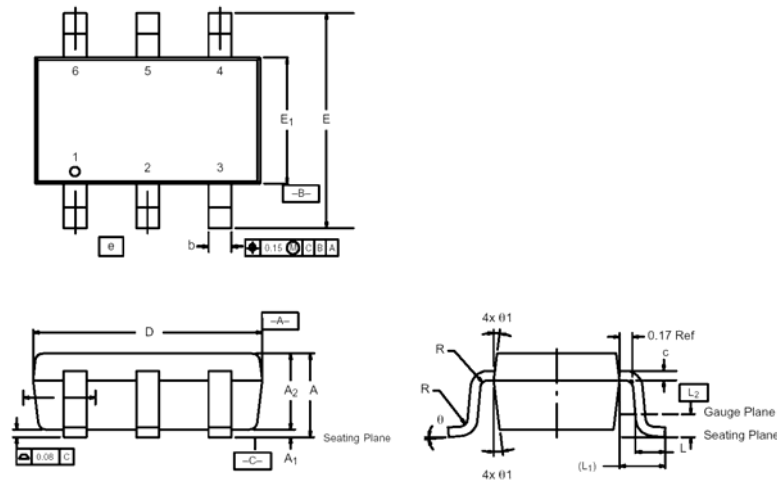
Notes

- Pulse test: $PW \leq 300 \mu\text{s}$ duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.

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Package Information

TSOP-6: 6LEAD



Dim	MILLIMETERS			INCHES		
	Min	Nom	Max	Min	Nom	Max
A	0.91	—	1.10	0.036	—	0.043
A ₁	0.01	—	0.10	0.0004	—	0.004
A ₂	0.84	—	1.00	0.033	0.038	0.039
b	0.30	0.32	0.45	0.012	0.013	0.018
c	0.10	0.15	0.20	0.004	0.006	0.008
D	2.95	3.05	3.10	0.116	0.120	0.122
E	2.70	2.85	2.98	0.106	0.112	0.117
E ₁	1.55	1.65	1.70	0.061	0.065	0.067
e	1.00 BSC			0.0394 BSC		
L	0.35	—	0.50	0.014	—	0.020
L ₁	0.60 Ref			0.024 Ref		
L ₂	0.25 BSC			0.010 BSC		
R	0.10	—	—	0.004	—	—
Ø	0°	4°	8°	0°	4°	8°
Ø ₁	7° Nom			7° Nom		