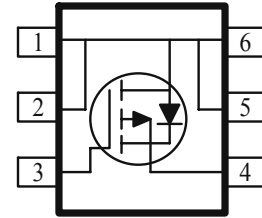
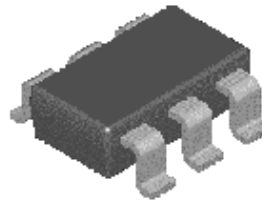


P-Channel 20-V (D-S) MOSFET

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 PWMDC-DC converters, power management in portable and battery-powered products such as computers, printers, battery charger, telecommunication power system, and telephones power system.

- Low $r_{DS(on)}$ Provides Higher Efficiency and Extends Battery Life
- Miniature TSOP-6 Surface Mount Package Saves Board Space
- High power and current handling capability



PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ m(Ω)	I_D (A)
-26.5	56 @ $V_{GS} = -4.5V$	-4.9
	80 @ $V_{GS} = -2.5V$	-4.2

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V_{DS}	-26.5	V
Gate-Source Voltage		V_{GS}	± 12	
Continuous Drain Current ^a	$T_A = 25^\circ C$	I_D	-4.9	A
	$T_A = 70^\circ C$		-4.0	
Pulsed Drain Current ^b		I_{DM}	± 20	
Continuous Source Current (Diode Conduction) ^a		I_S	-1.7	A
Power Dissipation ^a	$T_A = 25^\circ C$	P_D	2.0	W
	$T_A = 70^\circ C$		1.3	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ C$

THERMAL RESISTANCE RATINGS				
Parameter		Symbol	Maximum	Units
Maximum Junction-to-Ambient ^a	$t \leq 5$ sec	$R_{\theta JA}$	62.5	$^\circ C/W$
			110	$^\circ C/W$

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			
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 12 \text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -21 \text{ V}, V_{GS} = 0 \text{ V}$			-1	uA
		$V_{DS} = -21 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 55^\circ\text{C}$			-5	
On-State Drain Current ^A	$I_{D(on)}$	$V_{DS} = -4.5 \text{ V}, V_{GS} = -4.5 \text{ V}$	-15			A
Drain-Source On-Resistance ^A	$r_{DS(on)}$	$V_{GS} = -4.5 \text{ V}, I_D = -4.9 \text{ A}$			56	m Ω
		$V_{GS} = -2.5 \text{ V}, I_D = -4.2 \text{ A}$			80	
Forward Transconductance ^A	g_{fs}	$V_{DS} = -10 \text{ V}, I_D = -4.9 \text{ A}$		11		S
Diode Forward Voltage	V_{SD}	$I_S = 1.7 \text{ A}, V_{GS} = 0 \text{ V}$		-0.8		V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -10 \text{ V}, V_{GS} = -4.5 \text{ V},$ $I_D = -4.9 \text{ A}$		25		nC
Gate-Source Charge	Q_{gs}			2.4		
Gate-Drain Charge	Q_{gd}			3.9		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10 \text{ V}, R_L = 6 \Omega, I_D = -1 \text{ A},$ $V_{GEN} = -4.5 \text{ V}$		22		nS
Rise Time	t_r			35		
Turn-Off Delay Time	$t_{d(off)}$			45		
Fall-Time	t_f			25		

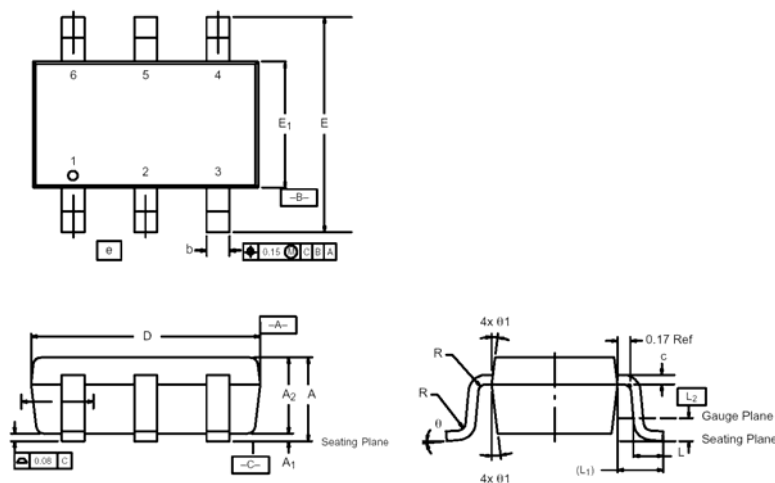
Notes

- Pulse test: PW \leq 300us 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	—	—
θ	0°	4°	8°	0°	4°	8°
θ ₁	7° Nom			7° Nom		