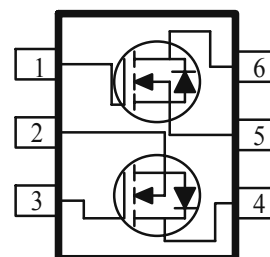
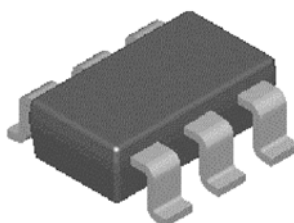


Dual N-Channel Logical Level MOSFET

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $r_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and 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 thermal impedance copper leadframe TSOP-6 saves board space
- Fast switching speed
- High performance trench technology



PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (OHM)	I_D (A)
20	0.047 @ $V_{GS} = 4.5$ V	4.1
	0.055 @ $V_{GS} = 2.5$ V	3.8

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	$T_A=25^\circ\text{C}$	4.1
		$T_A=70^\circ\text{C}$	3.3
Pulsed Drain Current ^b	I_{DM}	8	A
Continuous Source Current (Diode Conduction) ^a	I_S	1.05	A
Power Dissipation ^a	P_D	$T_A=25^\circ\text{C}$	1.15
		$T_A=70^\circ\text{C}$	0.7
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS				
Parameter	Symbol	Typ	Max	
Maximum Junction-to-Ambient ^a	R_{thJA}	t \leq 10 sec	93	110
		Steady State	130	150
				$^\circ\text{C/W}$

Notes

- a. Surface Mounted on 1" x 1" FR4 Board.
- b. Pulse width limited by maximum junction temperature

SPECIFICATIONS (T _A = 25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions				Unit
			Min	Typ	Max	
Static						
Gate-Threshold Voltage	V _{GS(th)}	V _{GS} = V _{DS} , I _D = 250 uA	0.4			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = 8 V			1	uA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V			0.1	uA
		V _{DS} = 16 V, V _{GS} = 0 V, T _J = 55°C			1	uA
On-State Drain Current ^A	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 4.5 V	30			A
Drain-Source On-Resistance ^A	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 4.1 A			0.047	Ω
		V _{GS} = 2.5 V, I _D = 3.8 A			0.055	
Forward Transconductance ^A	g _{fs}	V _{DS} = 10 V, I _D = 4.1 A		10		S
Diode Forward Voltage ^A	V _{SD}	I _S = 1.05 A, V _{GS} = 0 V		0.80		S
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =4.5V, I _D =4.1A		7.5		nC
Gate-Source Charge	Q _{gs}			0.6		
Gate-Drain Charge	Q _{gd}			1.0		
Turn-On Delay Time	t _{d(on)}	V _{DD} =10V, V _{GS} =4.5V, I _D =1A , R _{GEN} =15Ω		5		nS
Rise Time	t _r			12		
Turn-Off Delay Time	t _{d(off)}			13		
Fall-Time	t _f			7		

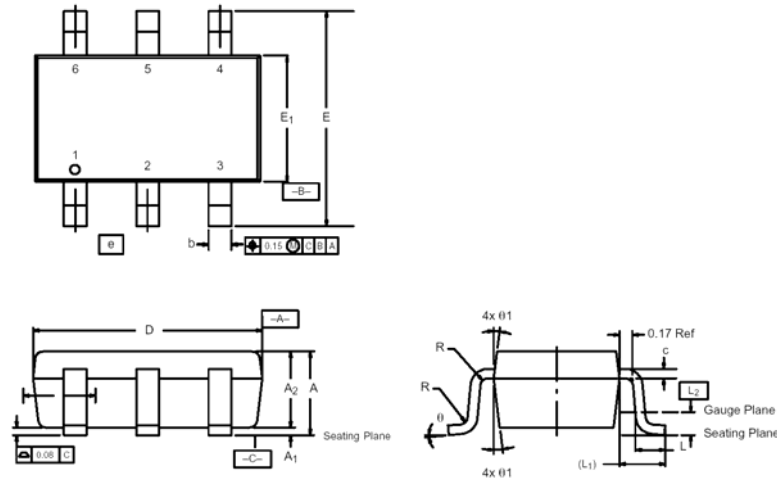
Notes

- a. Pulse test: PW <= 300us duty cycle <= 2%.
- b. 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		