

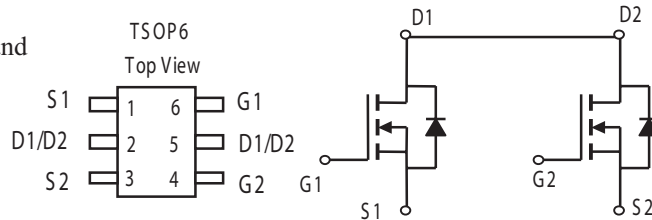


Dual N-Channel 20-V (D-S) MOSFET

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 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	0.030 @ $V_{GS} = 4.5V$	5.0
	0.046 @ $V_{GS} = 2.5V$	3.0



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 10	
Continuous Drain Current ^a	$T_A = 25^\circ C$	I_D	3.8	A
	$T_A = 70^\circ C$		3.0	
Pulsed Drain Current ^b		I_{DM}	10	
Continuous Source Current (Diode Conduction) ^a		I_S	0.46	A
Power Dissipation ^a	$T_A = 25^\circ C$	P_D	1.25	W
	$T_A = 70^\circ C$		0.8	
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_{THJA}	100	$^\circ C/W$
	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°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 250 uA	20			V
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 uA	0.5	0.8	1.5	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±10V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V			1	uA
		V _{DS} = 20 V, V _{GS} = 0 V, T _J = 55°C			10	
On-State Drain Current ^A	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 4.5 V	10			A
Drain-Source On-Resistance ^A	r _{DS(on)}	V _{GS} = 4.5 V, I _D = 5.0A		27	30	mΩ
		V _{GS} = 2.5 V, I _D = 3.0 A		35	46	
Forward Transconductance ^A	g _{fs}	V _{DS} = 5 V, I _D = 3.0 A		11		S
Diode Forward Voltage	V _{SD}	I _S = 2.00 A, V _{GS} = 0 V		0.80	1.20	V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 4.0 A		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} = 10 V, I _D = 1 A, R _G = 10 ohm, V _{GEN} = 4.5 V		9	17	ns
Rise Time	t _r			11	18	
Turn-Off Delay Time	t _{d(off)}			18	29	
Fall-Time	t _f			5	10	

- a. Pulse test: PW ≤ 300us duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.

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