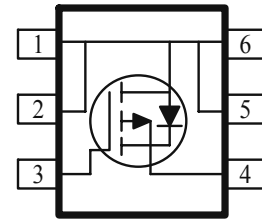
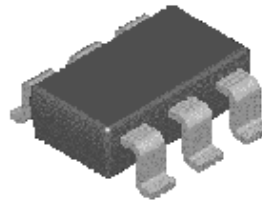


**P-Channel 30V (D-S) MOSFET**

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)	$r_{DS(on)}$ ( $\Omega$ )	$I_D$ (A)
-30	0.112 @ $V_{GS} = 10$ V	3.4
	0.172 @ $V_{GS} = 4.5$ V	2.7



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Maximum	Units
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current <sup>a</sup>	$I_D$	$T_A=25^\circ\text{C}$	3.4
		$T_A=70^\circ\text{C}$	2.6
Pulsed Drain Current <sup>b</sup>	$I_{DM}$	$\pm 20$	A
Continuous Source Current (Diode Conduction) <sup>a</sup>	$I_S$	1.7	A
Power Dissipation <sup>a</sup>	$P_D$	$T_A=25^\circ\text{C}$	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 <sup>a</sup>	$R_{THJA}$	$t \leq 5$ 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	
<b>Static</b>						
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu\text{A}$	1.0			V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 20 \text{ V}$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -24 \text{ V}, V_{GS} = 0 \text{ V}$			1	uA
		$V_{DS} = -24 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 55^\circ\text{C}$			50	
On-State Drain Current <sup>A</sup>	$I_{D(on)}$	$V_{DS} = 5 \text{ V}, V_{GS} = 10 \text{ V}$	10			A
Drain-Source On-Resistance <sup>A</sup>	$r_{DS(on)}$	$V_{GS} = 10 \text{ V}, I_D = 3.4 \text{ A}$			112	m $\Omega$
		$V_{GS} = 4.5 \text{ V}, I_D = 2.7 \text{ A}$			172	
Forward Transconductance <sup>A</sup>	$g_s$	$V_{DS} = 4.5 \text{ V}, I_D = 3.4 \text{ A}$		6		S
Diode Forward Voltage	$V_{SD}$	$I_S = 0.75 \text{ A}, V_{GS} = 0 \text{ V}$			1.2	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	$Q_g$	$V_{DS} = 30 \text{ V}, V_{GS} = 5 \text{ V}, I_D = 3.4 \text{ A}$		4.5		nC
Gate-Source Charge	$Q_{gs}$			1.4		
Gate-Drain Charge	$Q_{gd}$			2.4		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 30 \text{ V}, R_L = 30 \Omega, I_D = 1 \text{ A},$ $V_{GEN} = 10 \text{ V}$		9		ns
Rise Time	$t_r$			12		
Turn-Off Delay Time	$t_{d(off)}$			25		
Fall-Time	$t_f$			14		

## 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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