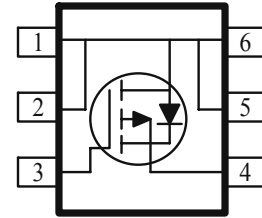
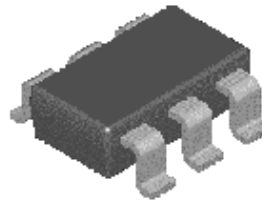


**P-Channel 60-V (D-S) MOSFET**

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 SO-8 Surface Mount Package Saves Board Space
- High power and current handling capability
- Extended VGS range ( $\pm 25$ ) for battery pack applications



PRODUCT SUMMARY		
V <sub>DS</sub> (V)	r <sub>DS(on)</sub> ( $\Omega$ )	I <sub>D</sub> (A)
-60	0.310 @ V <sub>GS</sub> = -10V	2.1
	0.465 @ V <sub>GS</sub> = -4.5V	1.7

ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25 °C UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V <sub>DS</sub>	-60	V
Gate-Source Voltage		V <sub>GS</sub>	$\pm 20$	
Continuous Drain Current <sup>a</sup>	T <sub>A</sub> =25°C	I <sub>D</sub>	2.1	A
	T <sub>A</sub> =70°C		1.7	
Pulsed Drain Current <sup>b</sup>		I <sub>DM</sub>	$\pm 15$	
Continuous Source Current (Diode Conduction) <sup>a</sup>		I <sub>S</sub>	-1.7	A
Power Dissipation <sup>a</sup>	T <sub>A</sub> =25°C	P <sub>D</sub>	2.0	W
	T <sub>A</sub> =70°C		1.3	
Operating Junction and Storage Temperature Range		T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C

THERMAL RESISTANCE RATINGS				
Parameter		Symbol	Maximum	Units
Maximum Junction-to-Ambient <sup>a</sup>	t $\leq$ 5 sec	R <sub>θJA</sub>	62.5	°C/W
			110	°C/W

Notes

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

SPECIFICATIONS (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
<b>Static</b>						
Gate-Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 uA	-1			
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -48 V, V <sub>GS</sub> = 0 V			-1	uA
		V <sub>DS</sub> = -48 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 55°C			-10	
On-State Drain Current <sup>A</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -10 V	-20			A
Drain-Source On-Resistance <sup>A</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = -10 V, I <sub>D</sub> = -2.1 A			310	mΩ
		V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -1.7 A			465	
Forward Transconductance <sup>A</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -15 V, I <sub>D</sub> = -2.1 A		8		S
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> = -2.5 A, V <sub>GS</sub> = 0 V			-1.2	V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -30 V, V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -2.1 A		18		nC
Gate-Source Charge	Q <sub>gs</sub>			5		
Gate-Drain Charge	Q <sub>gd</sub>			2		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -30 V, R <sub>L</sub> = 30 Ω , I <sub>D</sub> = -1 A, V <sub>GEN</sub> = -10 V, R <sub>G</sub> = 6Ω		8		nS
Rise Time	t <sub>r</sub>			10		
Turn-Off Delay Time	t <sub>d(off)</sub>			35		
Fall-Time	t <sub>f</sub>			12		

Notes

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

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