

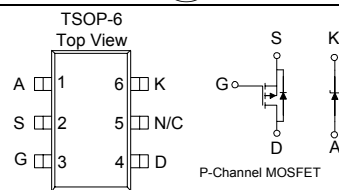
**AM3829P**

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

MOSFET PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ (OHM)	$I_D$ (A)
-20	0.130 @ $V_{GS} = -4.5V$	$\pm 2.5$
	0.190 @ $V_{GS} = -2.5V$	$\pm 1.9$

SCHOTTKY PRODUCT SUMMARY		
$V_{KA}$ (V)	$V_f$ (V) Diode Forward Voltage	$I_F$ (A)
20	0.48V @ 1.0A	1.0



**ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ C$  UNLESS OTHERWISE NOTED)**

Parameter	Symbol	Maximum	Units
Drain-Source Voltage (MOSFET)	$V_{DS}$	-20	V
Reverse Voltage (Schottky)	$V_{KA}$	20	
Gate-Source Voltage (MOSFET)	$V_{GS}$	$\pm 8$	
Continuous Drain Current ( $T_j = 150^\circ C$ ) (MOSFET) <sup>a</sup>	$I_D$	$T_A = 25^\circ C$	$\pm 2.5$
		$T_A = 70^\circ C$	$\pm 1.9$
Pulsed Drain Current (MOSFET) <sup>b</sup>	$I_{DM}$	$\pm 10$	A
Continuous Source Current (MOSFET Diode Conduction) <sup>a</sup>	$I_S$	-1.6	
Average Forward Current (Schottky)	$I_F$	0.5	
Pulsed Forward Current (Schottky)	$I_{FM}$	8	
Maximum Power Dissipation (MOSFET) <sup>a</sup>	$P_D$	$T_A = 25^\circ C$	1.15
		$T_A = 70^\circ C$	0.7
Maximum Power Dissipation (Schottky) <sup>a</sup>	$P_D$	$T_A = 25^\circ C$	1.0
		$T_A = 70^\circ C$	0.6
Operating Junction and Storage Temperature Range	$T_j, T_{stg}$	-55 to 150	$^\circ C$

**THERMAL RESISTANCE RATINGS**

Parameter	Symbol	Typ	Max	
Maximum Junction-to-Ambient <sup>a</sup>	$R_{thJA}$	t $\leq$ 10 sec	93	$^\circ C/W$
		Steady State	130	

Notes

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

MOSFET 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 μA	-0.4			
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = +/-8 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -16 V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -16 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> = -4.5 V	-5			A
Drain-Source On-State Resistance <sup>A</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -2.5 A			0.130	Ω
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -1.9 A			0.190	
Forward Transconductance <sup>A</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -5 V, I <sub>D</sub> = -2.5 A		3		S
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> = -1.6 A, V <sub>GS</sub> = 0 V		-0.70		V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -2.5 A		6.0		nC
Gate-Source Charge	Q <sub>gs</sub>			0.80		
Gate-Drain Charge	Q <sub>gd</sub>			1.30		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -5 V, R <sub>L</sub> = 5 Ω, V <sub>GEN</sub> = -4.5 V, R <sub>G</sub> = 6 Ω		6.5		ns
Rise Time	t <sub>r</sub>			20		
Turn-Off Delay Time	t <sub>d(off)</sub>			31		
Fall-Time	t <sub>f</sub>			21		

SCHOTTKY SPECIFICATIONS (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Forward Voltage Drop	V <sub>F</sub>	I <sub>F</sub> = 0.5 A			0.48	V
		I <sub>F</sub> = 0.5 A, T <sub>J</sub> = 125°C			0.4	V
Maximum Reverse Leakage Current	I <sub>rm</sub>	V <sub>r</sub> = 30 V			0.1	mA
		V <sub>r</sub> = 30 V, T <sub>J</sub> = 75°C			1	
		V <sub>r</sub> = 30 V, T <sub>J</sub> = 125°C			10	
Junction Capacitance	C <sub>T</sub>	V <sub>r</sub> = 10 V		31		pF

Notes

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