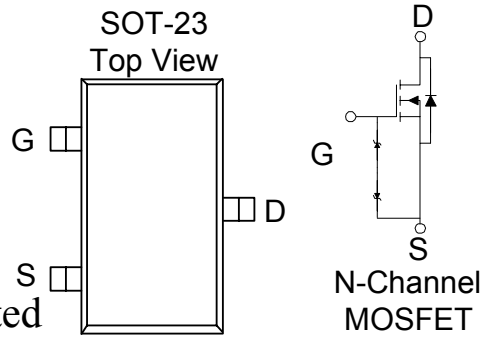
AM2306NE

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 SOT-23 Surface Mount Package Saves Board Space
- High power and current handling capability
- Low side high current DC-DC Converter applications

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ m(Ω)	I_D (A)
30	58 @ V_{GS} = 10V	3.5
	82 @ V_{GS} = 4.5V	3.0



ESD Protected
2000V

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Limit	Units
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current[a]	T_A=25°C	I_D	3.5	A
	T_A=70°C		2.8	
Pulsed Drain Current[b]		I_{DM}	16	
Continuous Source Current (Diode Conduction)[a]		I_S	1.25	A
Power Dissipation[a]	T_A=25°C	P_D	1.3	W
	T_A=70°C		0.8	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS				
Parameter		Symbol	Maximum	Units
Maximum Junction-to-Ambient[a]	t <= 10 sec	$R_{\theta JA}$	100	°C/W
	Steady-State		166	°C/W

Notes

a. Surface Mounted on 1" x 1" FR4 Board.

b. Pulse width limited by maximum junction temperature

Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250 uA	1			V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = 20 V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 24 V, V_{GS} = 0 V			1	uA
		V_{DS} = 24 V, V_{GS} = 0 V, T_J = 55°C			25	
On-State Drain Current[A]	$I_{D(on)}$	V_{DS} = 5 V, V_{GS} = 10 V	6			A
Drain-Source On-Resistance[A]	$r_{DS(on)}$	V_{GS} = 10 V, I_D = 3.5 A			58	mΩ
		V_{GS} = 4.5 V, I_D = 3 A			82	
Forward Tranconductance[A]	g_{fs}	V_{DS} = 15 V, I_D = 3.5 A		6.9		S
Diode Forward Voltage	V_{SD}	I_S = 2.3 A, V_{GS} = 0 V		0.8		V
Dynamic[b]						
Total Gate Charge	Q_g	V_{DS} = 15 V, V_{GS} = 4.5 V, I_D = 3.5 A		2.2		nC
Gate-Source Charge	Q_{gs}			0.5		
Gate-Drain Charge	Q_{gd}			0.8		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 25 V, R_L = 25 Ω , I_D = 1 A, V_{GEN} = 10 V		16		nS
Rise Time	t_r			5		
Turn-Off Delay Time	$t_{d(off)}$			23		
Fall-Time	t_f			3		

Notes

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

b. Guaranteed by design, not subject to production testing.