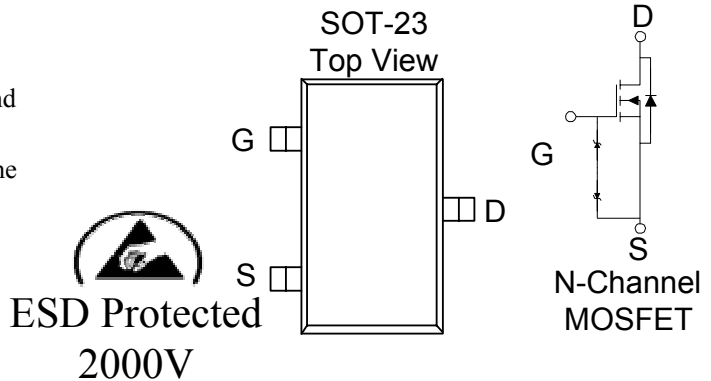


AM2342NE

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 SOT-23 saves board space
- Fast switching speed
- High performance trench technology

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ m(Ω)	I_D (A)
40	86 @ $V_{GS} = 10V$	5.2
	128 @ $V_{GS} = 4.5V$	3.7



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Limit	Units
Drain-Source Voltage		V_{DS}	40	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current ^a	$T_A = 25^\circ C$	I_D	5.2	A
	$T_A = 70^\circ C$		4.1	
Pulsed Drain Current ^b		I_{DM}	30	
Continuous Source Current (Diode Conduction) ^a		I_S	1.6	A
Power Dissipation ^a	$T_A = 25^\circ C$	P_D	1.3	W
	$T_A = 70^\circ C$		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 ≤ 5 sec	$R_{\theta JA}$	100	°C/W
	Steady-State		166	°C/W

Notes

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



Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	1			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 V, V_{GS} = 20 V$			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 32 V, V_{GS} = 0 V$			1	uA
		$V_{DS} = 32 V, V_{GS} = 0 V, T_J = 55^\circ C$			25	
On-State Drain Current ^A	$I_{D(on)}$	$V_{DS} = 5 V, V_{GS} = 10 V$	20			A
Drain-Source On-Resistance ^A	$r_{DS(on)}$	$V_{GS} = 10 V, I_D = 5.2 A$			86	mΩ
		$V_{GS} = 4.5 V, I_D = 3.7 A$			128	
Forward Transconductance ^A	g_{fs}	$V_{DS} = 15 V, I_D = 5.2 A$		40		S
Diode Forward Voltage	V_{SD}	$I_S = 2.3 A, V_{GS} = 0 V$		0.7		V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = 15 V, V_{GS} = 4.5 V,$ $I_D = 5.2 A$		4.0		nC
Gate-Source Charge	Q_{gs}			1.1		
Gate-Drain Charge	Q_{gd}			1.4		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 25 V, R_L = 25 \Omega, I_D = 1 A,$ $V_{GEN} = 10 V$		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.