

**Key Features:**

- Low  $r_{DS(on)}$  trench technology
- Low thermal impedance
- Fast switching speed

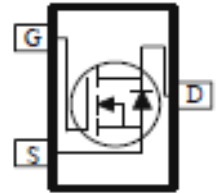
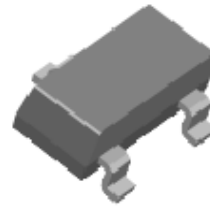
**Typical Applications:**

- White LED boost converters
- Automotive Systems
- Industrial DC/DC Conversion Circuits

PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ (mΩ)	$I_D$ (A)
30	160 @ $V_{GS} = 10V$	2.4
	250 @ $V_{GS} = 4.5V$	1.9



RoHS  
COMPLIANT  
HALOGEN  
FREE



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)				
Parameter		Symbol	Limit	Units
Drain-Source Voltage		$V_{DS}$	30	V
Gate-Source Voltage		$V_{GS}$	$\pm 20$	
Continuous Drain Current <sup>a</sup>	$T_A = 25^\circ C$	$I_D$	2.4	A
	$T_A = 70^\circ C$		1.9	
Pulsed Drain Current <sup>b</sup>		$I_{DM}$	10	
Continuous Source Current (Diode Conduction) <sup>a</sup>		$I_S$	1.9	A
Power Dissipation <sup>a</sup>	$T_A = 25^\circ C$	$P_D$	1.3	W
	$T_A = 70^\circ C$		0.8	
Operating Junction and Storage Temperature Range		$T_J, T_{stg}$	-55 to 150	$^\circ C$

THERMAL RESISTANCE RATINGS				
Parameter		Symbol	Maximum	Units
Maximum Junction-to-Ambient <sup>a</sup>	$t \leq 10$ sec	$R_{\theta JA}$	100	$^\circ C/W$
	Steady State		166	

Notes

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

## Electrical Characteristics

AM2318N

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static</b>						
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	1			V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0 V, V_{GS} = \pm 20 V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 24 V, V_{GS} = 0 V$			1	uA
		$V_{DS} = 24 V, V_{GS} = 0 V, T_J = 55^\circ C$			25	
On-State Drain Current <sup>a</sup>	$I_{D(on)}$	$V_{DS} = 5 V, V_{GS} = 10 V$	5			A
Drain-Source On-Resistance <sup>a</sup>	$r_{DS(on)}$	$V_{GS} = 10 V, I_D = 1.9 A$			160	mΩ
		$V_{GS} = 4.5 V, I_D = 1.6 A$			250	
Forward Transconductance <sup>a</sup>	$g_{fs}$	$V_{DS} = 15 V, I_D = 1.9 A$		6		S
Diode Forward Voltage <sup>a</sup>	$V_{SD}$	$I_S = 0.95 A, V_{GS} = 0 V$		0.84		V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	$Q_g$	$V_{DS} = 15 V, V_{GS} = 4.5 V,$ $I_D = 1.9 A$		1.4		nC
Gate-Source Charge	$Q_{gs}$			0.4		
Gate-Drain Charge	$Q_{gd}$			0.7		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS} = 15 V, R_L = 7.9 \Omega, I_D = 1.9 A,$ $V_{GEN} = 10 V, R_{GEN} = 6 \Omega$		2		ns
Rise Time	$t_r$			5		
Turn-Off Delay Time	$t_{d(off)}$			12		
Fall Time	$t_f$			4		
Input Capacitance	$C_{iss}$	$V_{DS} = 15 V, V_{GS} = 0 V, f = 1 \text{ Mhz}$		103		pF
Output Capacitance	$C_{oss}$			21		
Reverse Transfer Capacitance	$C_{rss}$			16		

## Notes

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