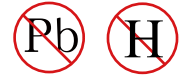




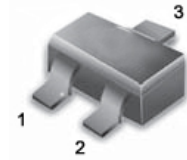
N-Channel Enhancement MOSFET



VDS= 30V, ID= 5.8A

Features

- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance



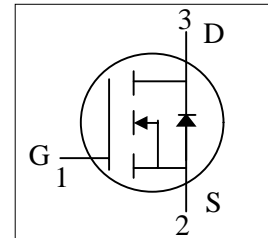
SOT-23 (TO-236AB)

MARKING

N06

PACKAGE INFORMATION

Package	Shipping
SOT-23	3000/Tape&Reel



Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	30	V
Gate-Source Voltage	V _{GS}	± 12	
Continuous Drain Current	I _D	5.8	A
Pulsed Drain Current ¹⁾	I _{DM}	30	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to 150	°C
Total Power Dissipation	P _D	1.4	W
Junction-to-Ambient Thermal Resistance (PCB mounted) ²⁾	R _{θJA}	140	°C/W

Note: 1. Repetitive Rating: Pulse width limited by the maximum junction temperature
 2. 1-in² 2oz Cu PCB board

ELECTRICAL CHARACTERISTICS

YSN2306

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static²⁾						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5.8A$		31.0	38.0	m Ω
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 5A$		34.0	43.0	
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 2.5V, I_D = 4A$		45.0	62.0	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.7		1.4	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
Gate Body Leakage	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$			± 100	nA
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	6	7	7.5	Ω
Forward Transconductance	g_{fs}	$V_{DS} = 5V, I_D = 5A$	10	15		S
Dynamic³⁾						
Total Gate Charge	Q_g	$V_{DS} = 15V, I_D = 5.8A$ $V_{GS} = 4.5V$		11	14.3	nC
Gate-Source Charge	Q_{gs}			1.6	2.08	
Gate-Drain Charge	Q_{gd}			2.8	3.64	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 15V, R_L = 2.7\Omega$ $I_D = 1A, V_{GEN} = 10V$ $R_G = 3\Omega$		7	14	ns
Turn-On Rise Time	t_r			15	30	
Turn-Off Delay Time	$t_{d(off)}$			38	76	
Turn-Off Fall Time	t_f			3	6	
Source-Drain Diode						
Max. Diode Forward Current	I_S				2.5	A
Diode Forward Voltage	V_{SD}	$I_S = 1A, V_{GS} = 0V$			1.2	V

Note: Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

2. Static parameters are based on package level with recommended wire-bonding

3. Guaranteed by design; not subject to production testing

DEVICE CHARACTERISTICS

YSN2306

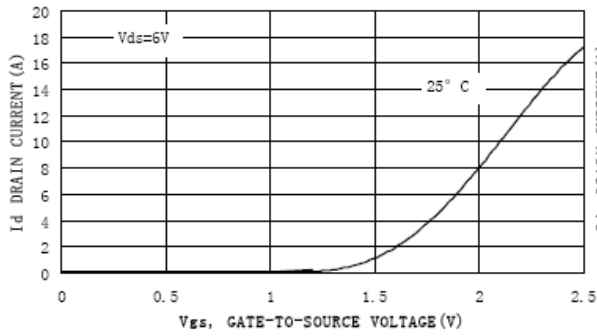


Figure 1. Transfer Characteristics

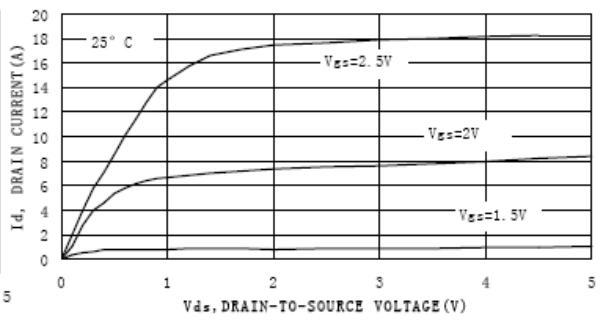


Figure 2. On-Region Characteristics

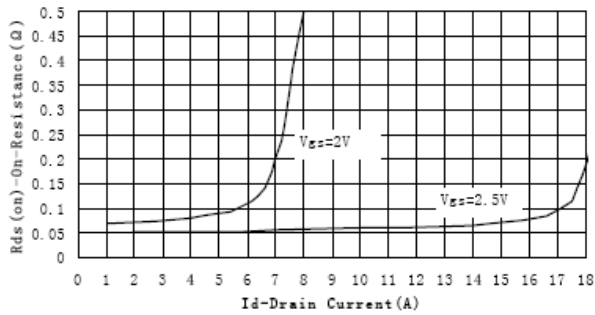


Figure 3. On-Resistance versus Drain Current

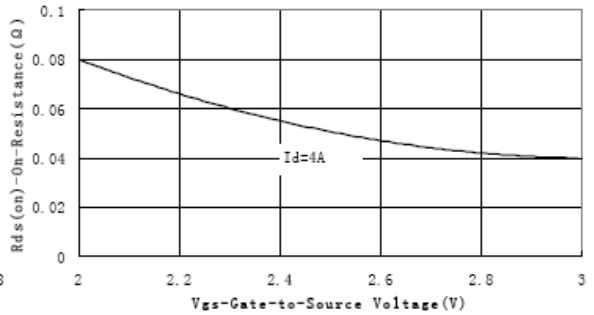


Figure 4. On-Resistance vs. Gate-to-Source Voltage

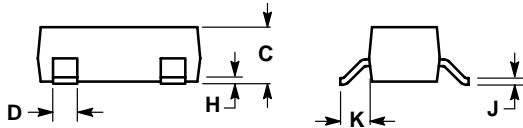
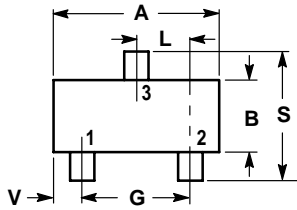
PACKAGE OUTLINE & DIMENSIONS

YSN2306

SOT-23

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

