





/ Descriptions

SOT23-3 N MOS N- CHANNEL MOSFET in a SOT23-3 Plastic Package.

/ Features

$V_{DS}(V) = 30V$

$I_D = 5.8 A (V_{GS} = 10V)$

$R_{DS(ON)} < 32m\Omega (V_{GS} = 10V)$

$R_{DS(ON)} < 36m\Omega (V_{GS} = 4.5V)$

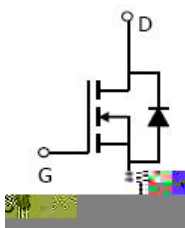
$R_{DS(ON)} < 56m\Omega (V_{GS} = 2.5V)$

无卤产品。HF Product.

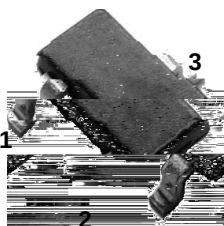
/ Applications

This device is suitable for use as a load switch or in PWM applications.

/ Equivalent Circuit



/ Pinning



PIN1 G

PIN 2 S

PIN 3 D

/ Marking

Marking

A0H

/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Drain Current – Continuous	I_D	5.8	A
Drain Current- Continuous	$I_D(T_a=70^\circ\text{C})$	4.9	A
Pulsed Drain Current	I_{DM}	30	A
Gate-Source Voltage	V_{GS}	± 12	V
Total Power Dissipation	P_D	1.4	W
Total Power Dissipation	$P_D(T_a=70^\circ\text{C})$	1.0	W
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

/ Electrical Characteristics($T_a=25^\circ\text{C}$)

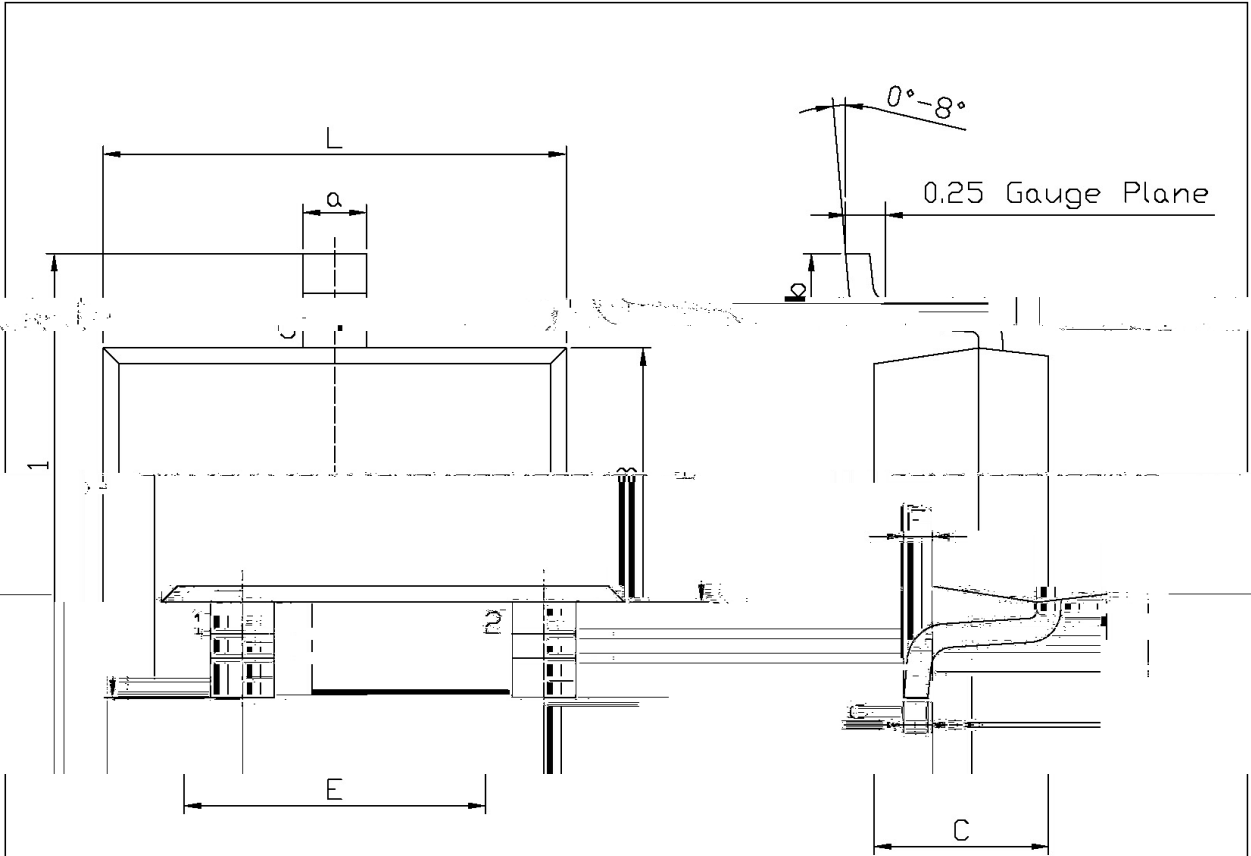
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=24V$ $V_{GS}=0V$			1	μA
		$V_{DS}=24V$ $V_{GS}=0V$ $T_J=55^\circ\text{C}$			5	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 12V$ $V_{DS}=0V$			± 0.1	μA
On–State Drain Current	$I_{D(on)}$	$V_{GS}=4.5V$ $V_{DS}=5V$	30			A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	0.65	1.1	1.45	V
Static Drain–Source On–Resistance	$R_{DS(on)(1)}$	$V_{GS}=10V$ $I_D=5.8A$		29	32	m Ω
	$R_{DS(on)(2)}$	$V_{GS}=10V$ $I_D=5.8A$ $T_J=125^\circ\text{C}$			39	
	$R_{DS(on)(3)}$	$V_{GS}=4.5V$ $I_D=5A$		32	36	
	$R_{DS(on)(4)}$	$V_{GS}=2.5V$ $I_D=4A$		40	56	
Forward Transconductance	g_{FS}	$V_{DS}=5V$ $I_D=5A$	10	15		S
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$		0.77	1	V
Input Capacitance	C_{iss}	$V_{DS}=15V$ $V_{GS}=0V$ $f=1\text{MHz}$		823	1030	pF
Output Capacitance	C_{oss}			99		
Reverse Transfer Capacitance	C_{rss}			77		
Turn–On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $R_L=2.7\Omega$ $V_{DS}=15V$ $R_{GEN}=3\Omega$		3.3	5	ns
Turn–On Rise Time	t_r			4.8	7	
Turn–Off Delay Time	$t_{d(off)}$			26.3	40	
Turn–Off Fall Time	t_f			4.1	6	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Capacitance	C_{iss}	$V_{DS}=15V$ $V_{GS}=0V$ $f=1MHz$		823	1030	pF
Output Capacitance	C_{oss}			99		
Reverse Transfer Capacitance	C_{rss}			77		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$, $f=1MHz$		1.2	3.6	Ω
Total Gate Charge	Q_g	$V_{GS}=4.5V$, $V_{DS}=15V$, $I_D=5.8A$		9.7	12	nC
Gate Source Charge	Q_{gs}			1.6		
Gate Drain Charge	Q_{gd}			3.1		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $R_L=2.7\Omega$ $V_{DS}=15V$ $R_{GEN}=3\Omega$		3.3	5	ns
Turn-On Rise Time	t_r			4.8	7	
Turn-Off Delay Time	$t_{d(off)}$			26.3	40	
Turn-Off Fall Time	t_f			4.1	6	
Body Diode Reverse Recovery Time	t_{rr}	$I_F=5A$ $dI/dt=100A/\mu s$		16	20	ns
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F=5A$ $dI/dt=100A/\mu s$		8.9	12	nC



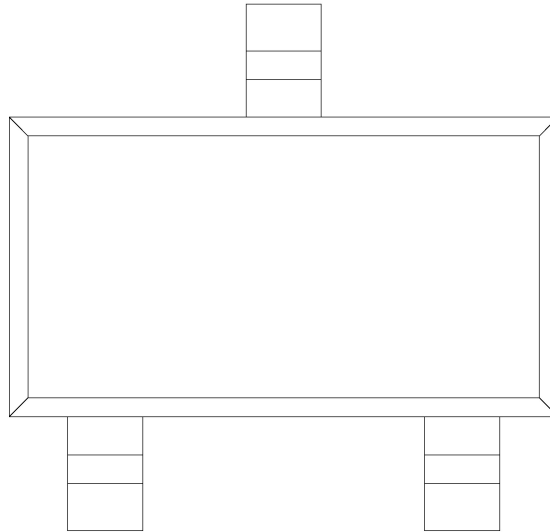
/ Package Dimensions



Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	a	0.35	0.50
b	0.25	0.30	C	0.30	0.40
E	1.80	2.00			

/ Marking Instructions



() / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：

- 1、预热温度 150 ~ 180℃，时间 60 ~ 90sec;
- 2、峰值温度 245±5℃，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10℃/sec.

Note:

- 1.Preheating:150~180℃, Time:60~90sec.
- 2.Peak Temp.:245±5℃, Duration:5±0.5sec.
3. Cooling Speed: 2~10℃/sec.

/ Resistance to Soldering Heat Test Conditions

温度：260±5℃

时间：10±1 sec.

Temp.:260±5℃

Time:10±1 sec

/ Packaging SPEC.

卷盘包装 / REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box	Outer Box
SOT-23-3	3,000	10	30,000	4	120,000	7" x8	210×205×205	445×230×435

/ Notices