

20V N沟道功率MOSFET

UM2302S SOT23-3

UM2302P SOT323

描述

UM2302 是一款低阈值 N 沟道 MOSFET，具有极低的导通电阻。这一优势为设计师提供了适用于电池和负载管理应用的极高效器件。该器件采用节省空间、外形小巧的 SOT23-3 或 SOT323 封装。

应用

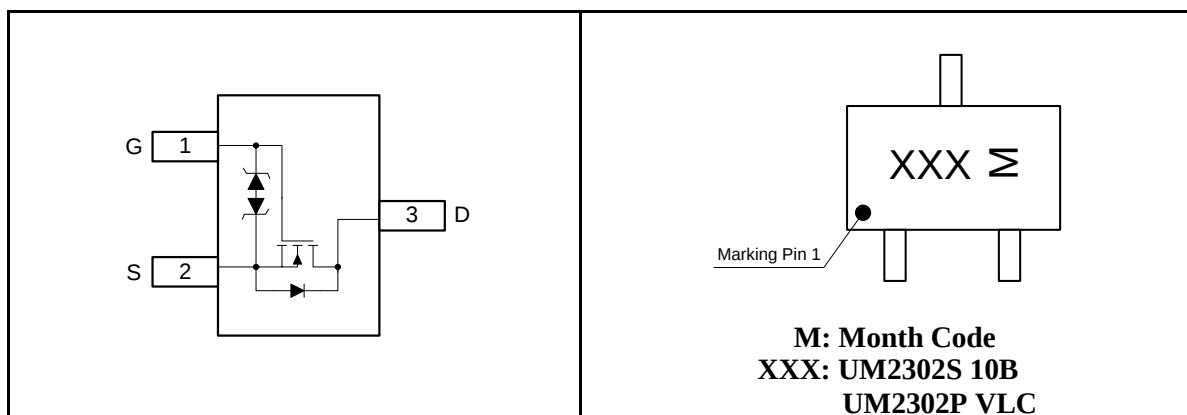
- 电池组
- 电池供电的便携式设备
- 手机和无线电话

特性

- 漏源电压（最大）：20V
- 低导通电阻：
90mΩ@V_{GS}=4.5V
150mΩ@V_{GS}=2.5V
- 持续漏极电流（最大）：
2A@25℃ (SOT23-3)
1.6A@25℃ (SOT323)

引脚配置

顶部视图



订购信息

芯片型号	封装类型	丝印编码	发货数量
UM2302S	SOT23-3	10B	3000pcs/7 Inch Tape & Reel
UM2302P	SOT323	VLC	

Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	± 8	V
I_D	Continuous Drain Current (5s)	SOT23-3	A
		SOT323	
I_{DP}	Drain Current Pulsed (Pulse Width $\leq 10\mu s$, Duty Cycle $\leq 1\%$)	5	A
P_D	Power Dissipation	SOT23-3	W
		SOT323	
T_J	Junction Temperature	-55~150	$^{\circ}C$
T_{stg}	Storage Temperature	-55~150	$^{\circ}C$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient ($\leq 5s$)	SOT23-3	$^{\circ}C/W$
		SOT323	
ESD	ESD Method 3015.8	2000	V

Electrical Characteristics ($T_J=25^{\circ}C$, unless otherwise noted)

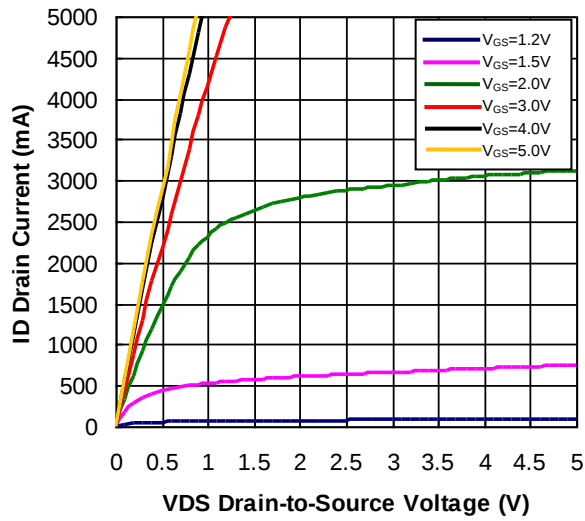
Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
Off Characteristics						
BV _{DSS}	Drain-to-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	20			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =20V, V _{GS} =0V			0.1	μA
I _{GSS}	Gate-to-Source Leakage Current	V _{GS} =±8V, V _{DS} =0V			±10	μA
On Characteristics						
R _{DS(ON)}	Static Drain-to-Source On-Resistance (Note 1)	V _{GS} =4.5V, I _D =1.0A		90	150	mΩ
		V _{GS} =2.5V, I _D =1.0A		150	200	
V _{GS(TH)}	Gate-Source Threshold Voltage	V _{DS} = V _{GS} , I _D =250μA	0.40		0.90	V
g _{fs}	Forward Transconductance (Note 1)	V _{DS} =5V, I _D =2A		4.5		S
Dynamic Characteristics (Note 2)						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =10V, f=1.0MHz		150		pF
C _{oss}	Output Capacitance			50		
C _{rss}	Reverse Transfer Capacitance			40		
Switching Characteristics (Note 2)						
td(on)	Turn-on Delay Time	V _{DD} =10V, R _L =2.78Ω, I _D =3.6A, V _{GEN} =4.5V, R _G =1Ω		8	15	ns
tr	Rise Time			10	25	
td(off)	Turn-off Delay Time			30	45	
tf	Fall Time			25	40	
Drain-Source Diode Characteristics and Maximum Ratings						
V _{SD}	Forward Diode Voltage	I _S =0.95A, V _{GS} =0V		0.7	1.2	V

Note 1: Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

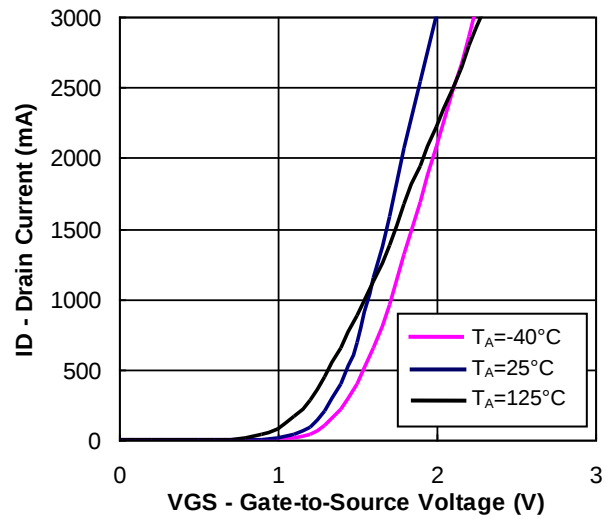
Note 2: Guaranteed by design, not subject to production testing.

Typical Characteristics ($T_J=25^\circ\text{C}$, unless otherwise noted)

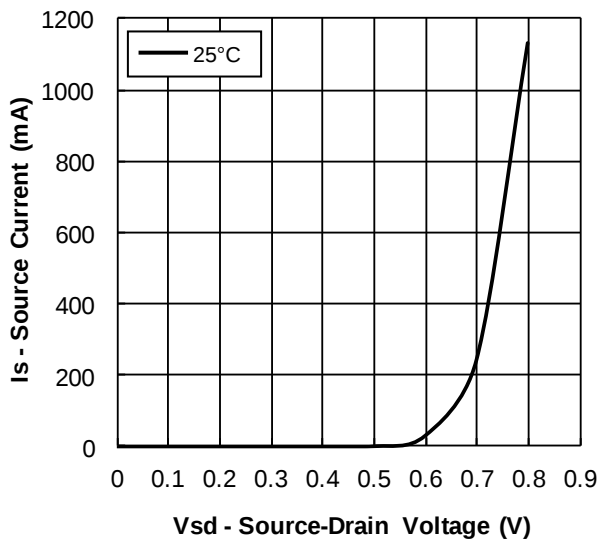
Output Characteristics



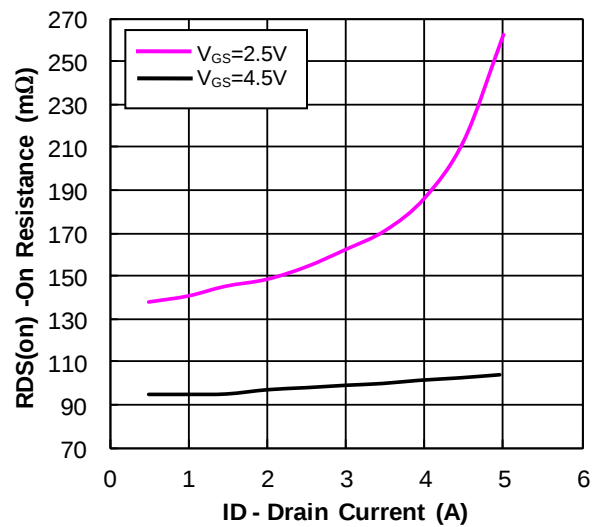
Transfer Characteristics



Source-Drain Diode Forward Voltage

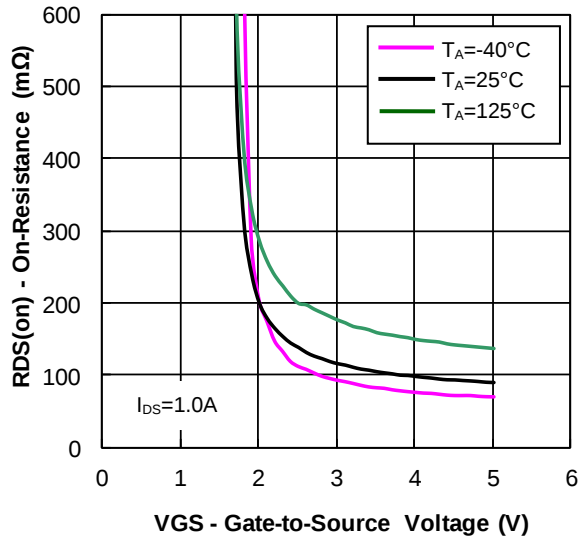


On Resistance vs. Drain Current

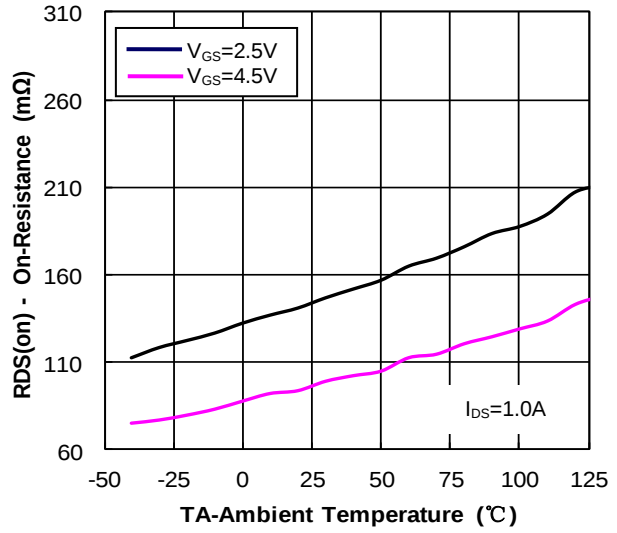


Typical Characteristics ($T_J=25^\circ\text{C}$, unless otherwise noted)

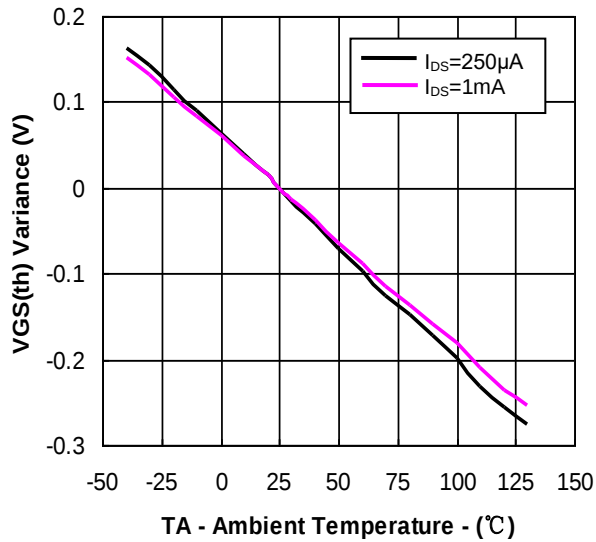
On-Resistance vs. Gate-to-Source Voltage



On-Resistance vs. Ambient Temperature



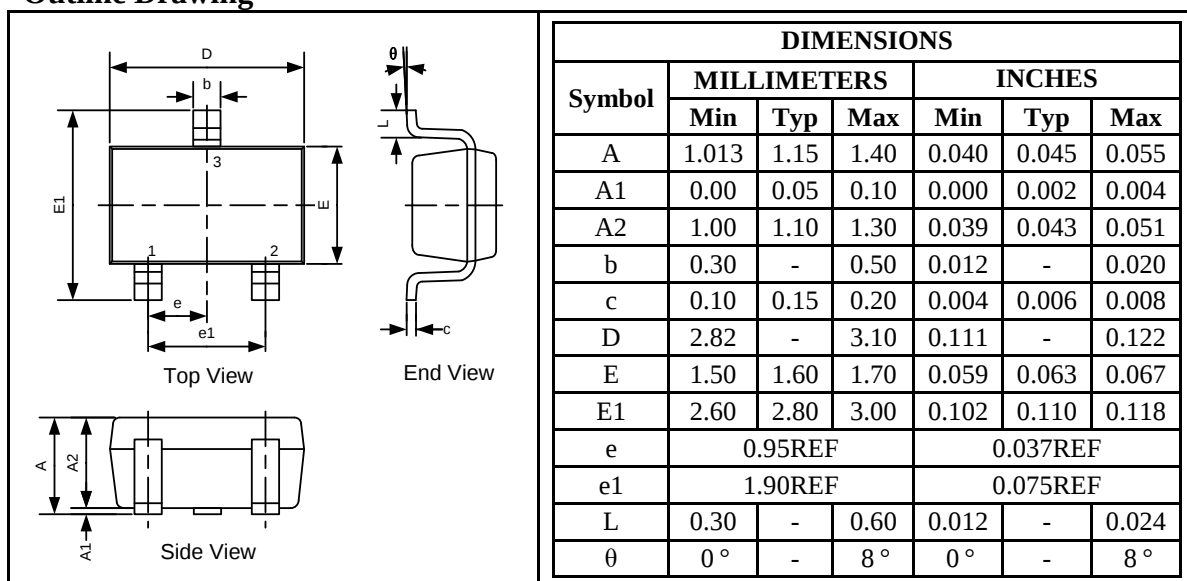
Threshold Voltage vs. Ambient Temperature



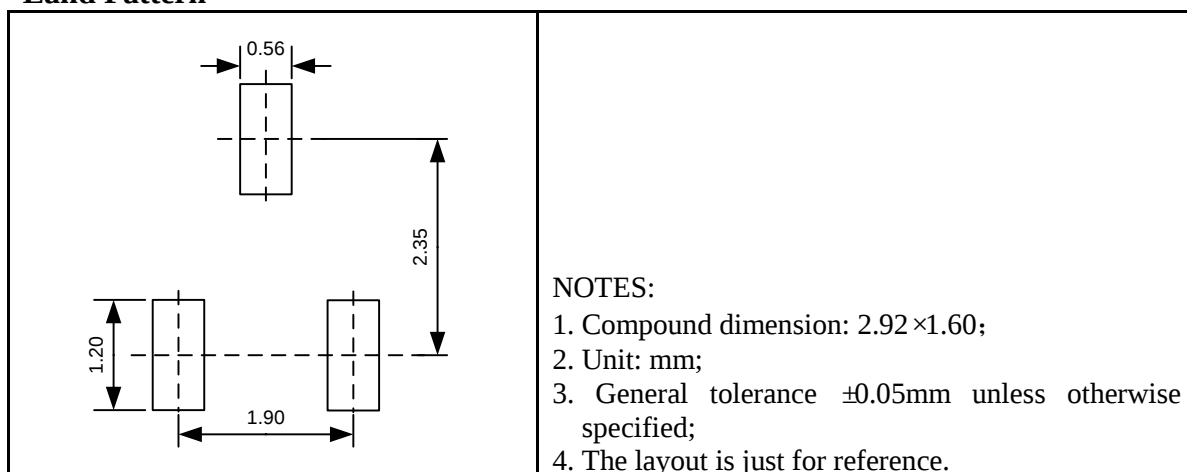
Package Information

UM2302S SOT23-3

Outline Drawing



Land Pattern

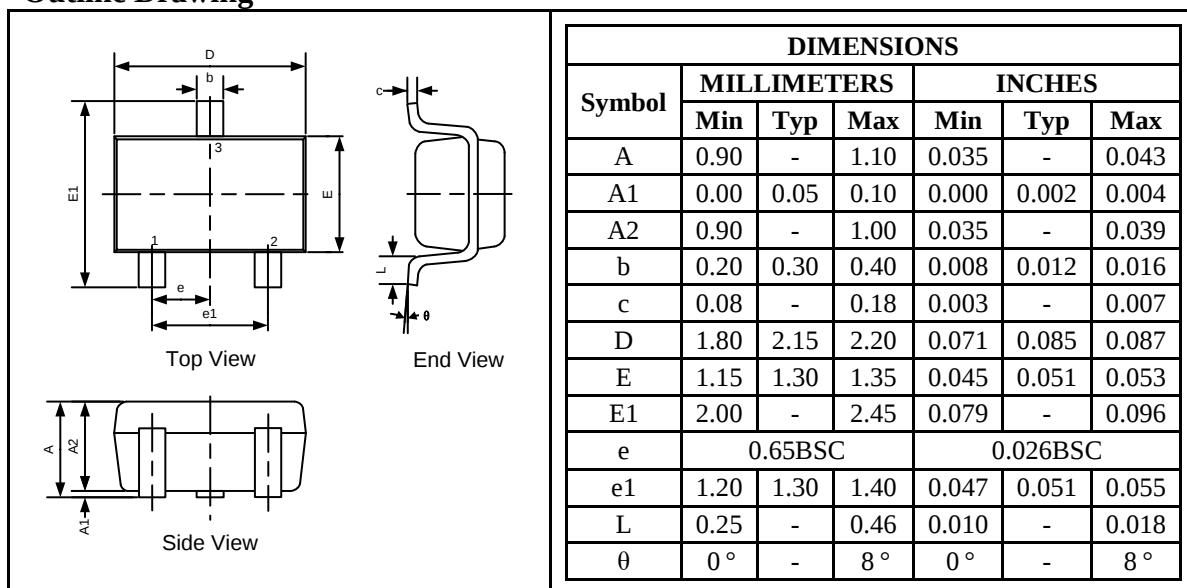


Tape and Reel Orientation

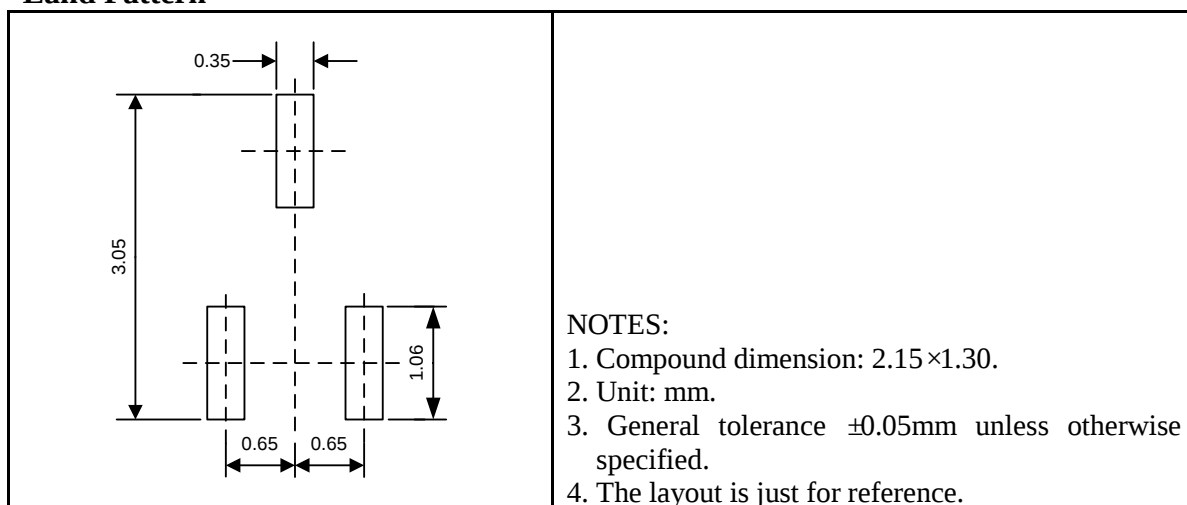


UM2302P SOT323

Outline Drawing



Land Pattern



Tape and Reel Orientation



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