UMW 2N7002

60V N-Channel MOSFET

1.1Features

- V_{DS}=60V
- I_D=300mA
- $R_{DS(ON)}$<3Ω(V_{GS}=10V)
- $R_{DS(ON)}$<4Ω(V_{GS}=5V)

1.2Features

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

2.Application

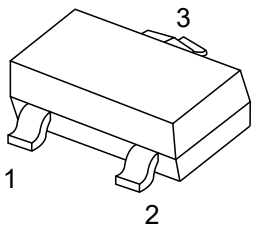
- Load Switch for Portable Devices

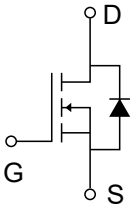
- Load Switch for Portable Devices

3.Pinning information

Pin	Symbol	Description
1	G	GATE
2	S	SOURCE
3	D	DRAIN

SOT-23





4.Absolute Maximum Ratings T_A= 25°C

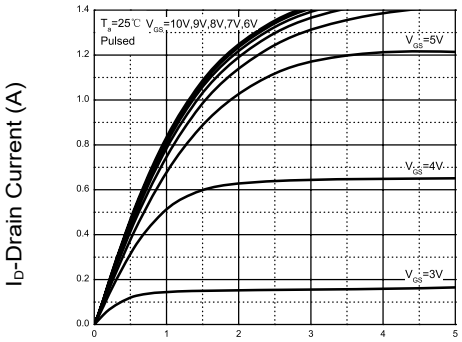
Parameter	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	300	mA
Power Dissipation	P_D	0.225	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	556	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~+150	°C

5.Electrical Characteristics T_A= 25°C

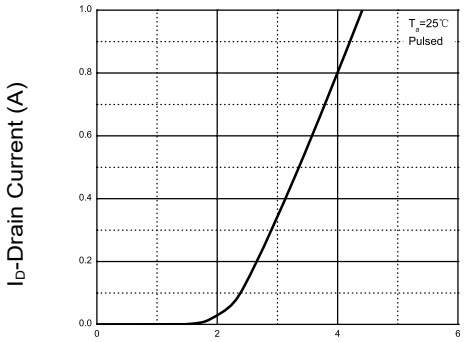
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=250μA, V_{GS}=0V	60			V
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1		2.5	V
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±80	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			80	nA
On-state Drain Current	$I_{D(ON)}$	V_{DS}=7V, V_{GS}=10V			500	mA
Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=300mA			3	Ω
		V_{GS}=5V, I_D=150mA			4	Ω
Forward Trans conductance	g_{FS}	V_{DS}=10V, I_D=200mA	80			ms
Drain-source on-voltage	$V_{DS(ON)}$	V_{GS}=10V, I_D=500mA			3.75	V
		V_{GS}=5V, I_D=50mA			0.375	V
Diode Forward Voltage	V_{SD}	I_S=115mA, V_{GS}=0V	0.55		1.2	V
Input Capacitance *	C_{iss}	V_{GS}=0V, V_{DS}=25V, f=1MHz			50	pF
Output Capacitance *	C_{oss}				25	pF
Reverse Transfer Capacitance *	C_{rss}				5	pF
SWITCHING TIME						
Turn-on Time *	$t_{D(on)}$	V_{DD}=25V, R_L=50Ω, R_G=25Ω			20	ns
Turn-off Time *	$t_{D(off)}$	I_D=500mA, V_{GEN}=10V			40	ns

*These parameters have no way to verify.

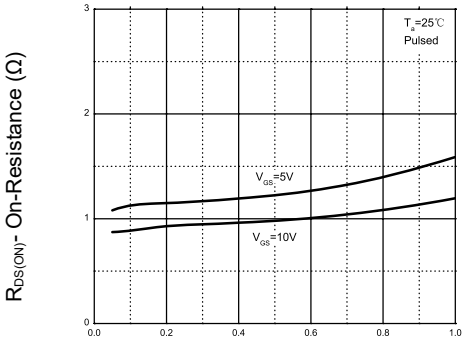
6.Typical Characterisitics



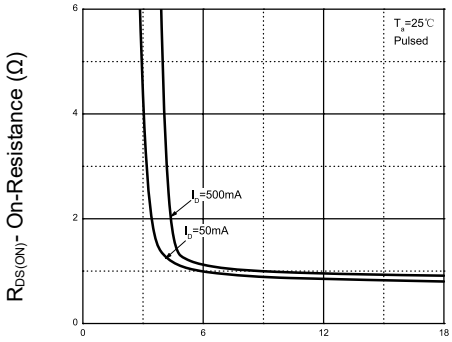
Output Characteristics



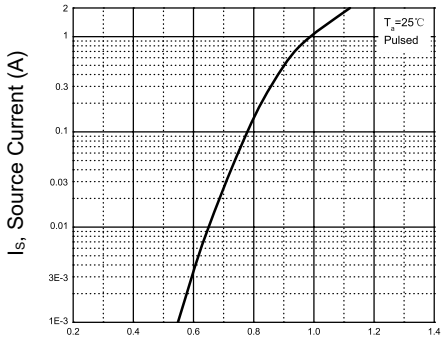
Transfer Characteristics



$R_{DS(ON)}$-I_D

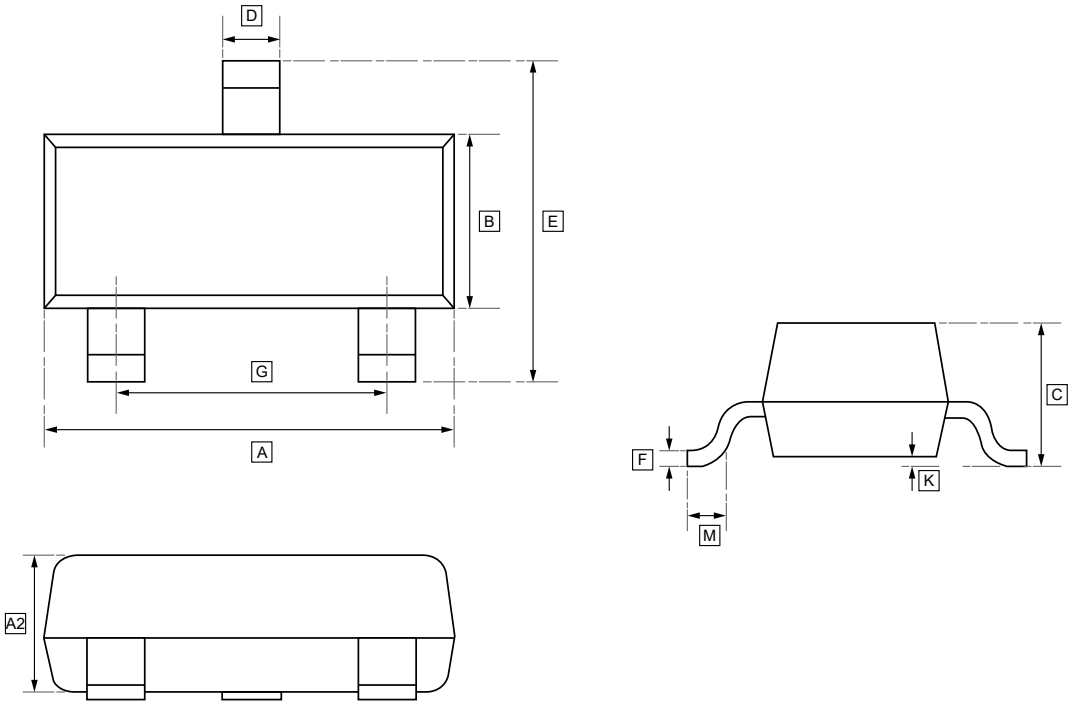


$R_{DS(ON)}$-V_{GS}



I_S-V_{SD}

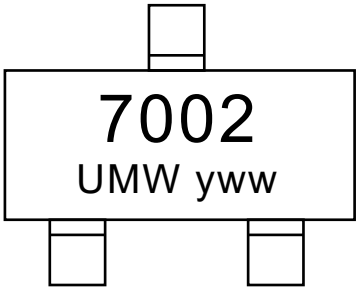
7.SOT-23 Package Outline Dimensions



DIMENSIONS (mm are the original dimensions)

Symbol	A	B	C	D	E	G	K	M	A2	F
Min	2.80	1.20	0.90	0.32	2.25	1.80	0.00	0.30	0.95	0.095
Max	3.04	1.40	1.10	0.55	2.55	2.00	0.10	-	1.05	0.115

8.Ordering Information



yww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW 2N7002	SOT-23	3000	Tape and reel

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