



General Description

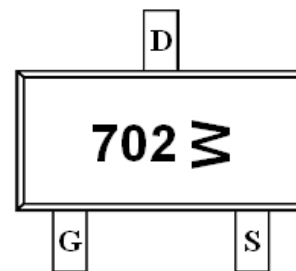
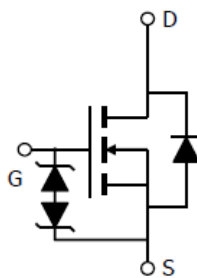
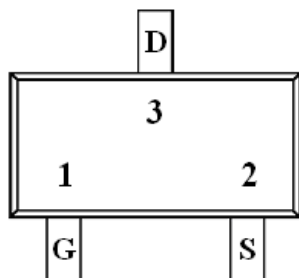
AFN7002AS, N-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

These devices are particularly suited for low voltage power management, such as smart phone and notebook computer and other battery powered circuits, and low in-line power loss are needed in commercial industrial surface mount applications.

Features

- $I_D=0.5A$, $R_{DS(ON)}= 3000m\Omega@V_{GS}=10V$
- $I_D=0.3A$, $R_{DS(ON)}=4000m\Omega@V_{GS}=5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- ESD Protection (1KV) Diode design-in
- SOT-23 package design

Pin Description (SOT-23)



Application

- Drivers: Relays, Solenoids, Lamps, Hammers, Display, Memories, Transistors, etc.
- High saturation current capability. Direct Logic-Level Interface: TTL/CMOS
- Battery Operated Systems
- Solid-State Relays

Pin Define

Pin	Symbol	Description
1	G	Gate
2	S	Source
3	D	Drain

Ordering Information

Part Ordering No.	Part Marking	Package	Unit	Quantity
AFN7002ASS23RG	702W	SOT-23	Tape & Reel	3000 EA

※ 702 Parts code

※ W Month code

※ AFN7002ASS23RG : 7" Tape & Reel ; Pb- Free ; Halogen -Free



Absolute Maximum Ratings

(T_A=25°C Unless otherwise noted)

Parameter	Symbol	Value	Unit	
Drain-Source Voltage	V _{DSS}	60	V	
Gate –Source Voltage	V _{GSS}	±20	V	
Continuous Drain Current(T _J =150°C)	I _D	T _A =25°C	0.64	A
		T _A =70°C	0.35	
Pulsed Drain Current	I _{DM}	0.8	A	
Continuous Source Current(Diode Conduction)	I _S	0.64	A	
Power Dissipation	P _D	225	mW	
Operating Junction Temperature	T _J	150	°C	
Storage Temperature Range	T _{STG}	-55/150	°C	
Thermal Resistance-Junction to Ambient	R _{θJA}	417	°C/W	

Electrical Characteristics

(T_A=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250uA	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.0	1.6	2.0	
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			3	uA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	uA
		V _{DS} =60V, V _{GS} =0V T _J =85°C			10	
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =0.5A		1900	3000	mΩ
		V _{GS} =5V, I _D =0.3A		2400	4000	
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =0.2A	80			mS
Diode Forward Voltage	V _{SD}	I _S =0.115A, V _{GS} =0V			1.5	V
Dynamic						
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V f=1MHz		17	50	pF
Output Capacitance	C _{oss}			10	25	
Reverse Transfer Capacitance	C _{rss}			3	5	
Turn-On Time	t _{d(on)}	V _{DD} =25V, R _L =50Ω		7	20	ns
Turn-Off Time	t _{d(off)}	I _D =0.5A, V _{GEN} =10V, R _G =25Ω		11	40	



Typical Characteristics

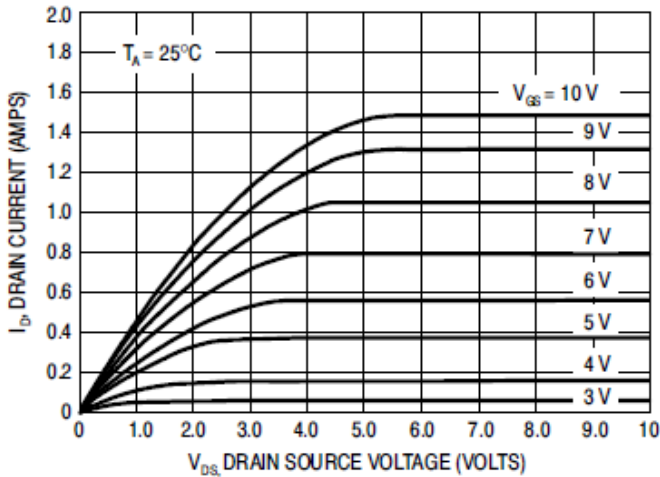


Figure 1. Ohmic Region

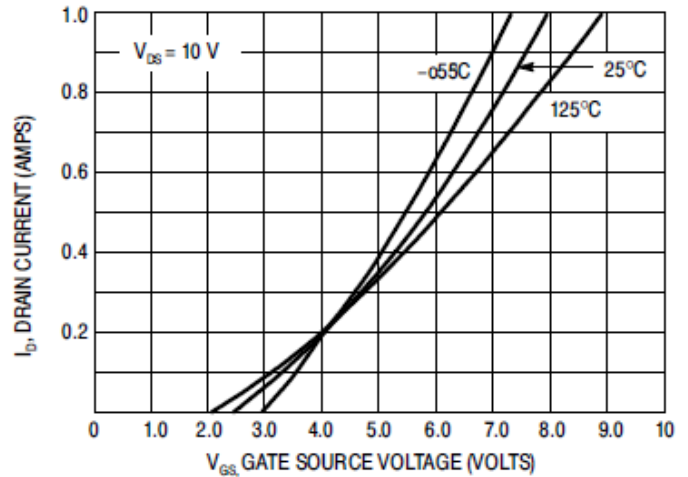


Figure 2. Transfer Characteristics

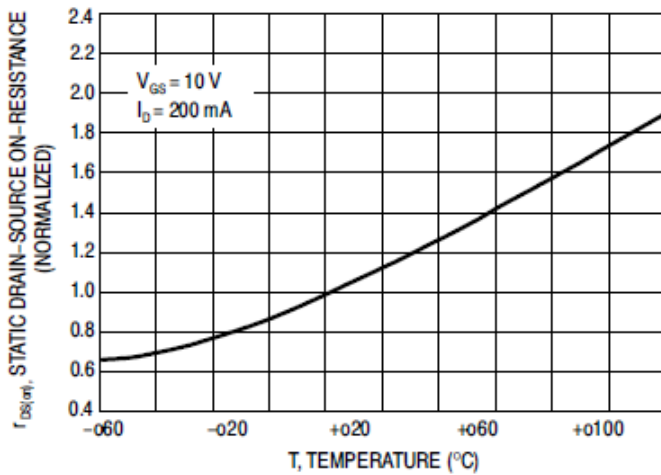


Figure 3. Temperature versus Static Drain-Source On-Resistance

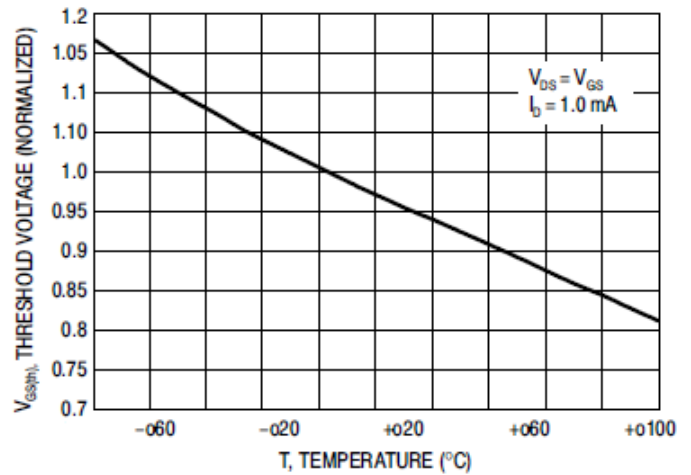
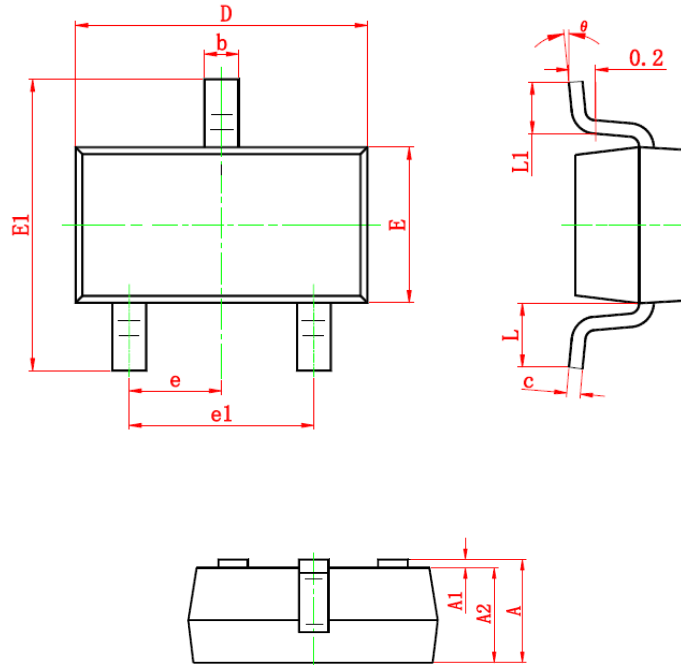


Figure 4. Temperature versus Gate Threshold Voltage



Package Information (SOT-23)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.200	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.100	0.035	0.039
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	6°

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