



DESCRIPTION

The AM2N7002 is available in SOT-23 package.

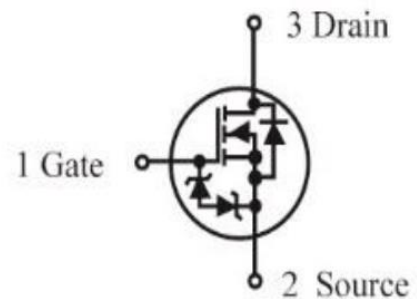
FEATURES

- ESD Protected: 1000V
- Available in SOT-23 package

ORDERING INFORMATION

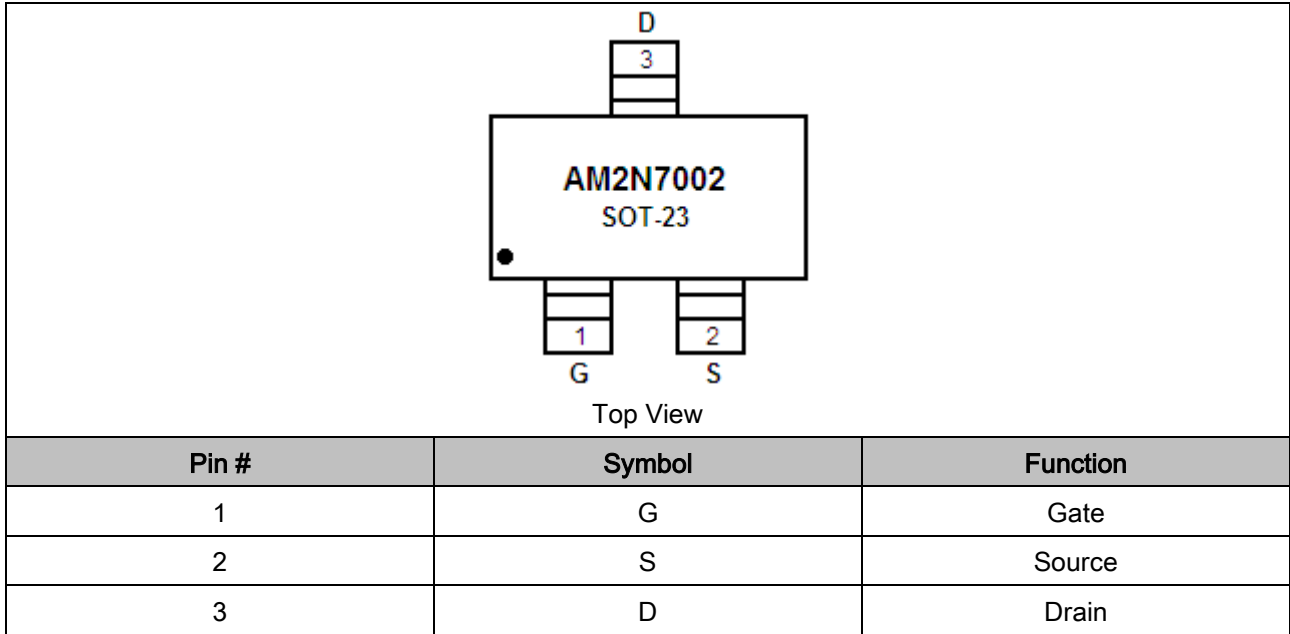
Package Type	Part Number	
SOT-23 SPQ: 3,000pcs/Reel	E3	AM2N7002E3R
		AM2N7002E3VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

PIN DESCRIPTION





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ABSOLUTE MAXIMUM RATINGS

V_{DSS} , Drain-Source Voltage	60Vdc
V_{DGR} , Drain-Gate Voltage ($R_{GS} = 1.0M\Omega$)	60Vdc
Drain Current	
I_D , Continuous $T_C = 25^\circ C$	$\pm 115mA_{dc}$
$T_C = 100^\circ C$	$\pm 75mA_{dc}$
I_{DM} , Pulsed ^{NOTE1}	$\pm 800mA_{dc}$
Gate-Source Voltage	
V_{GS} , Continuous	$\pm 20V_{dc}$
V_{GSM} , Non-repetitive ($t_p \leq 50\mu s$)	$\pm 40V_{dc}$

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation FR-5 Board ^{NOTE2}			
$T_A = 25^\circ C$	P_D	225	mW
Derate above $25^\circ C$		1.8	mW/ $^\circ C$
Thermal Resistance, Junction-to-Ambient ^{NOTE2}	$R_{\theta JA}$	556	$^\circ C/W$
Junction and Storage Temperature	T_J, T_{STG}	-55 to + 150	$^\circ C$

NOTE1: Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2.0\%$.

NOTE2: FR-5 = 1.0x0.75x0.062 in.



ELECTRICAL CHARACTERISTICS

T_A = 25°C, unless otherwise specified

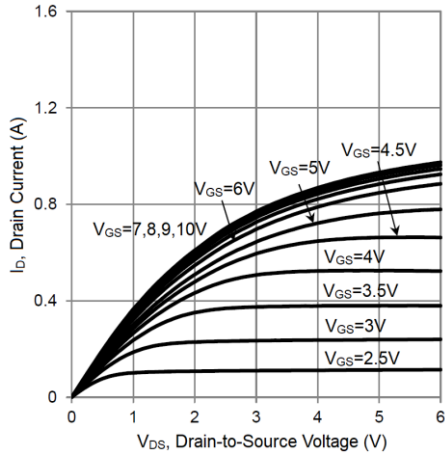
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit	
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage	V _{BRDSS}	V _{GS} = 0, I _D = 10μAdc	60	-	-	Vdc	
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} = 0, V _{DS} = 60Vdc	T _J = 25°C	-	-	1.0	μAdc
			T _J = 125°C	-	-	500	
Gate-Body Leakage Current, Forward	I _{GSSF}	V _{GS} = 20Vdc	-	-	1.0	μAdc	
Gate-Body Leakage Current, Reverse	I _{GSSR}	V _{GS} = -20Vdc	-	-	-1.0	μAdc	
ON CHARACTERISTICS^{NOTE3}							
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μAdc	1.0	1.6	2.0	Vdc	
On-State Drain Current	I _{D(on)}	V _{DS} ≥ 2.0V _{DS(on)} , V _{GS} =10Vdc	500	-	-	mA	
Static Drain-Source On-State Voltage	V _{DS(on)}	V _{GS} = 10Vdc, I _D = 500mAdc	-	-	3.75	Vdc	
		V _{GS} = 5.0Vdc, I _D = 50mAdc	-	-	0.375		
Static Drain-Source On- State Resistance	R _{DS(ON)}	V _{GS} = 10Vdc, I _D = 500mAdc	T _C = 25°C	-	1.4	7.5	Ohms
			T _C = 125°C	-	-	13.5	
		V _{GS} = 5.0Vdc, I _D = 50mAdc	T _C = 25°C	-	1.8	7.5	
			T _C = 125°C	-	-	13.5	
Forward Transconductance	G _{FS}	V _{DS} ≥ 2.0V _{DS(on)} , I _D =200mAdc	80	-	-	mmhos	
DYNAMIC CHARACTERISTICS							
Input Capacitance	C _{iss}	V _{DS} = 25V, V _{GS} = 0, f = 1.0MHz	-	17	50	pF	
Output Capacitance	C _{oss}		-	10	25		
Reverse Transfer Capacitance	C _{rss}		-	2.5	5.0		
SWITCHING CHARACTERISTICS							
Turn-On Delay Time	t _{d(on)}	V _{DD} = 25Vdc, I _D =500mAdc, R _G = 25Ω, R _L = 50Ω, V _{gen} = 10V	-	7	20	ns	
Turn-Off Delay Time	t _{d(off)}		-	11	40		
BODY-DRAIN DIODE RATINGS							
Diode Forward On-Voltage	V _{SD}	I _S = 115mAdc, V _{GS} = 0V	-	-	-1.5	Vdc	
Source Current Continuous	I _S	Body Diode	-	-	-115	mAdc	
Source Current Pulsed	I _{SM}		-	-	-800	mAdc	

NOTE3: Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%.

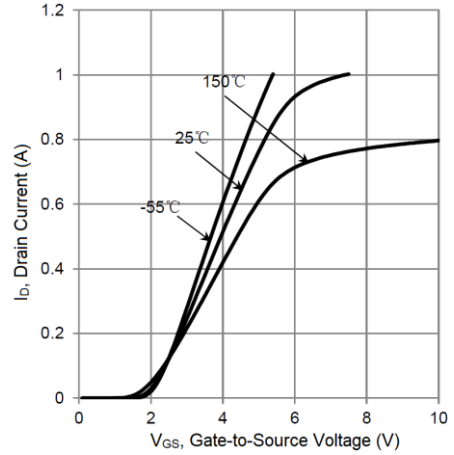


TYPICAL PERFORMANCE CHARACTERISTICS

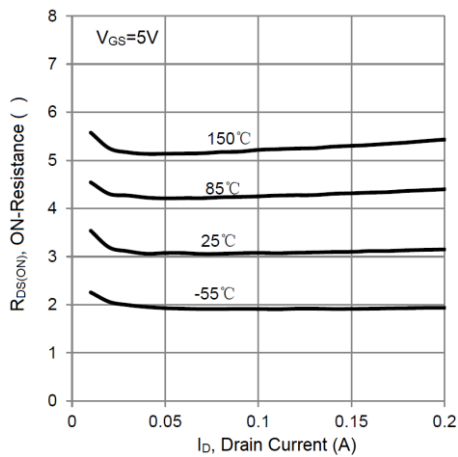
1. ON-Region Characteristics



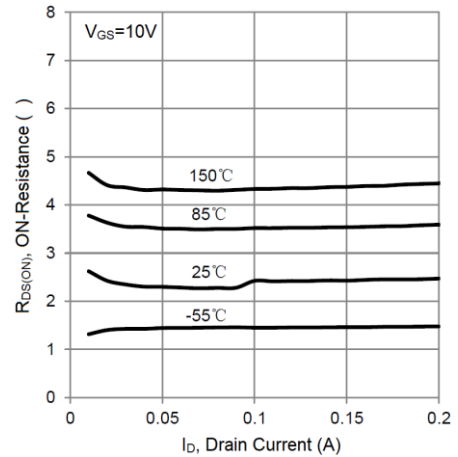
2. Transfer Characteristics



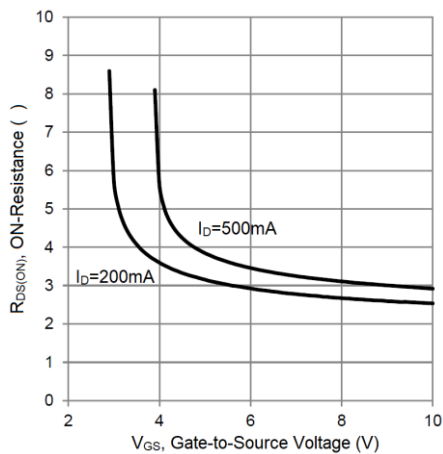
3. $R_{DS(ON)}$ vs. I_D



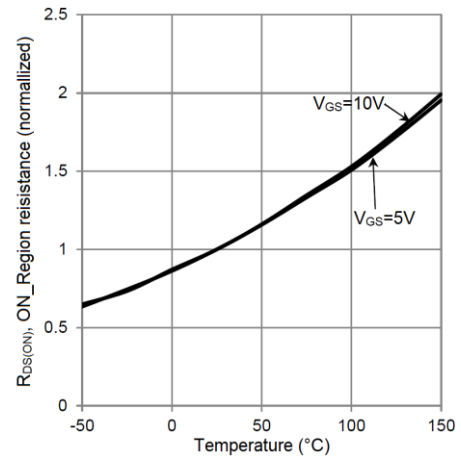
4. $R_{DS(ON)}$ vs. I_D



5. $R_{DS(ON)}$ vs. V_{GS}

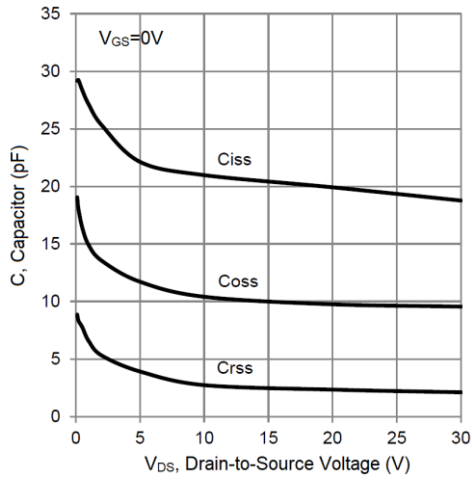


6. $R_{DS(ON)}$ vs. Temperature

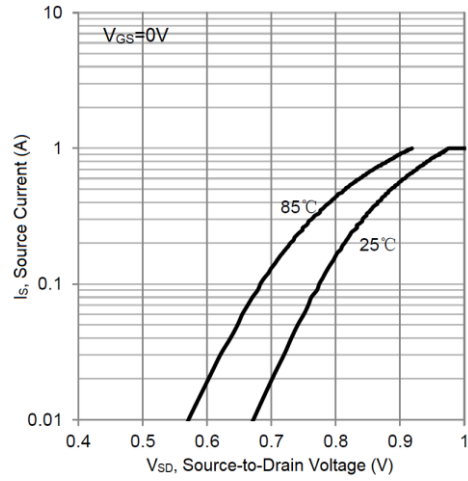




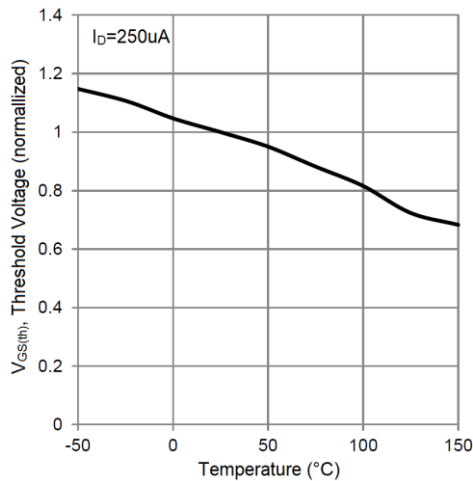
7. Capacitor vs. V_{DS}



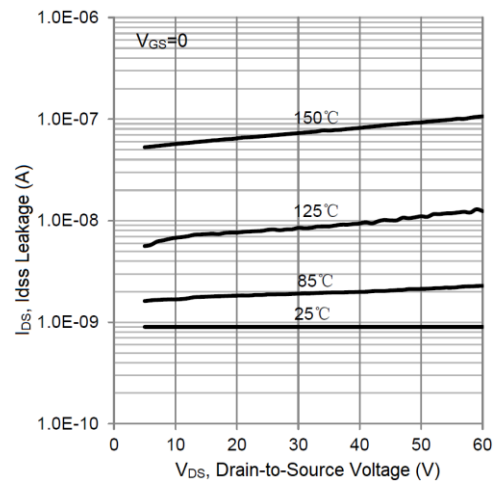
8. I_s vs. V_{SD}



9. $V_{GS(th)}$ vs. Temperature



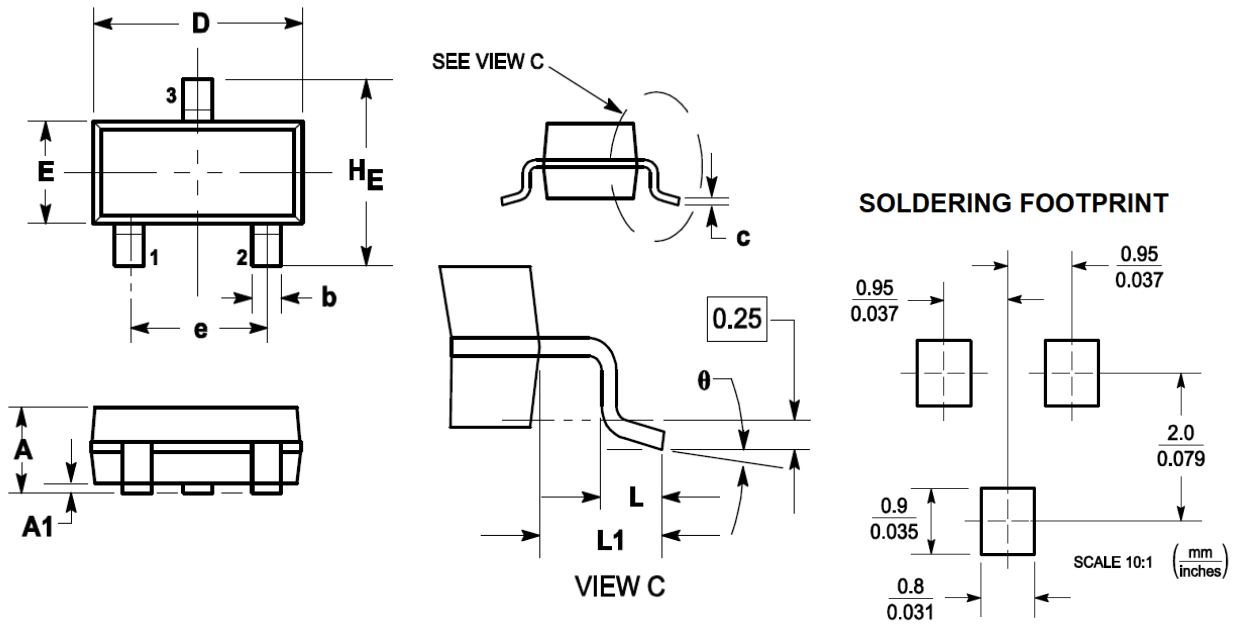
10. I_{DS} vs. V_{DS}





PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.89	1.11	0.035	0.044
A1	0.01	0.10	0.001	0.004
b	0.37	0.50	0.015	0.020
c	0.09	0.18	0.003	0.007
D	2.80	3.04	0.110	0.120
E	1.20	1.40	0.047	0.055
e	1.78	2.04	0.070	0.081
L	0.10	0.30	0.004	0.012
L1	0.35	0.69	0.014	0.029
He	2.10	2.64	0.083	0.104
θ	0°	10°	0°	10°



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