



DESCRIPTION

The AM2N7002FDW is available in SOT-363 Package

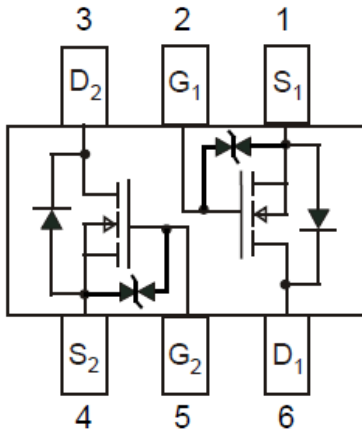
ORDERING INFORMATION

Package Type	Part Number	
SOT-363 (SC70-6)	C6	AM2N7002FDWC6R
		AM2N7002FDWC6VR
Note	V: Halogen free Package R: Tape & Reel SPQ: 3,000pcs/Reel	
AiT provides all RoHS products Suffix " V " means Halogen free Package		

FEATURES

- $R_{DS(ON)} \leq 8\Omega @ V_{GS}=4V$
- $R_{DS(ON)} \leq 13\Omega @ V_{GS}=2.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- Capable doing Cu wire bonding
- ESD Protected:1000V
- Available in SOT-363 Package

PIN DESCRIPTION

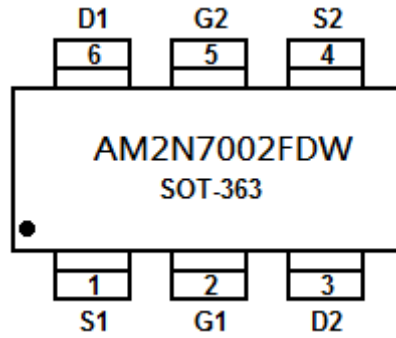


APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- Load Switch



PIN DESCRIPTION



Top View

Pin #	Symbol	Function
1	S1	Source1
2	G1	Gate1
3	D2	Drain2
4	S2	Source2
5	G2	Gate2
6	D1	Drain1



ABSOLUTE MAXIMUM RATINGS

T_A=25°C, unless Otherwise Noted

V _{DS} , Drain-Source Voltage	30V
V _{GS} , Gate-Source Voltage	±20V

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	Min.	Unit
Total Device Dissipation FR-5 Board ^{NOTE1} T _A = 25°C Derate above 25°C	P _D	225 1.8	mW mW/°C
Thermal Resistance, Junction to Ambient	R _{θJA}	556	°C/W
Total Device Dissipation Alumina Substrate, ^{NOTE 2} T _A = 25°C Derate above 25°C	P _D	300 2.4	mW mW/°C
Thermal Resistance, Junction to Ambient	R _{θJA}	417	°C/W
Junction and Storage Temperature	T _J , T _{STG}	-55 to +150	°C

NOTE1: FR-5 = 1.0 x 0.75 x 0.062 in.

NOTE2: Alumina = 0.4 x 0.3 x 0.025 in 99.5% alumina.



ELECTRICAL CHARACTERISTICS

T_J =25°C, unless Otherwise Specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
STATIC						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	30	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.8	-	1.5	V
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V	-	-	±10	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V	-	-	1.0	μA
Drain-Source On-Resistance ^{NOTE3}	R _{DS(on)}	V _{GS} =4V, I _D =10mA	-	5.0	8.0	Ω
		V _{GS} =2.5V, I _D =1mA	-	7.0	13	
Diode Forward Voltage ^{NOTE3}	V _{SD}	I _S =200mA, V _{GS} =0V	-	-	1.2	V
DYNAMIC						
Total Gate Charge	Q _g	V _{DS} =25V, V _{GS} =10V, I _D =0.22A	-	4.9	-	nC
Gate-Source Charge	Q _{gs}		-	2.1	-	
Gate-Drain Charge	Q _{gd}		-	0.6	-	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz	-	21	-	pF
Output Capacitance	C _{oss}		-	10	-	
Reverse Transfer Capacitance	C _{rss}		-	2.0	-	
Turn-On Delay Time	t _{d(on)}	V _{DD} =5V, R _L =500Ω, V _{GES} =5V, R _G =10Ω	-	10.1	-	ns
Turn-On Rise Time	t _r		-	7.3	-	
Turn-Off Delay Time	t _{d(off)}		-	31.3	-	
Turn-Off Fall Time	t _f		-	28.2	-	

NOTE3: Pulse test; pulse width≤300μs, duty cycle≤2%.



TYPICAL CHARACTERISTICS

$T_J = 25^\circ\text{C}$ Noted

Figure 1. On Resistance vs. Junction

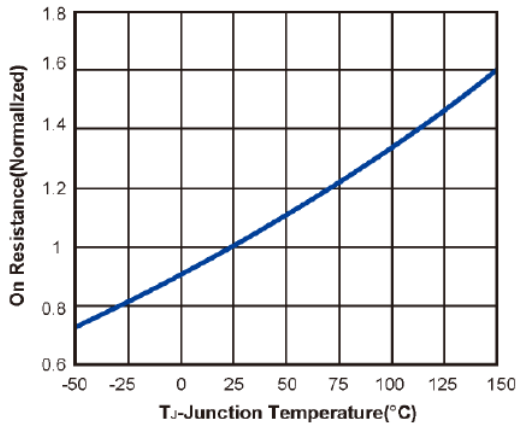


Figure 2. On Resistance vs. Drain Current

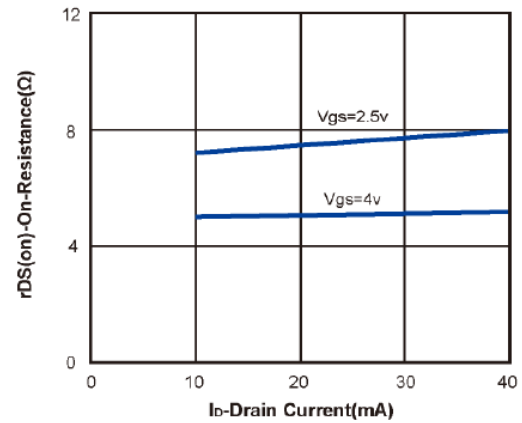


Figure 3. Capacitance

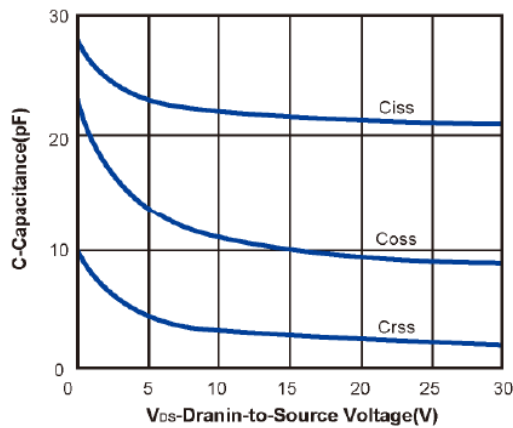


Figure 4. On Resistance vs. Gate-to-Source Voltage

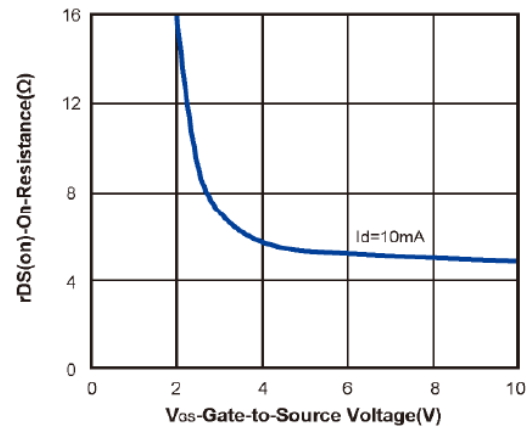


Figure 5. Threshold Voltage

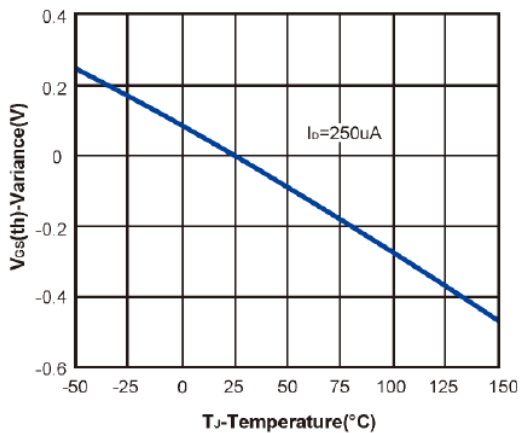


Figure 6. On-Region Characteristics

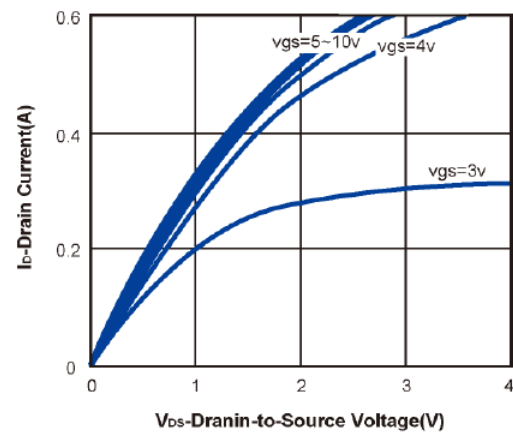




Figure 7. Gate Charge

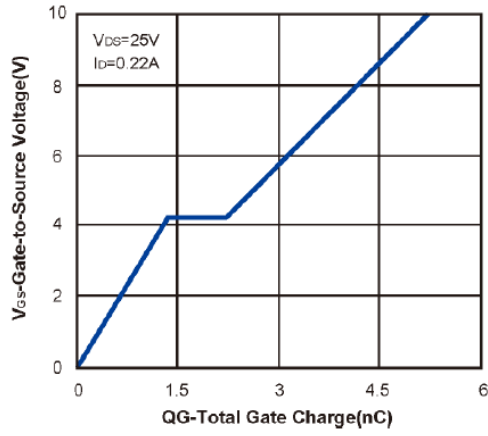
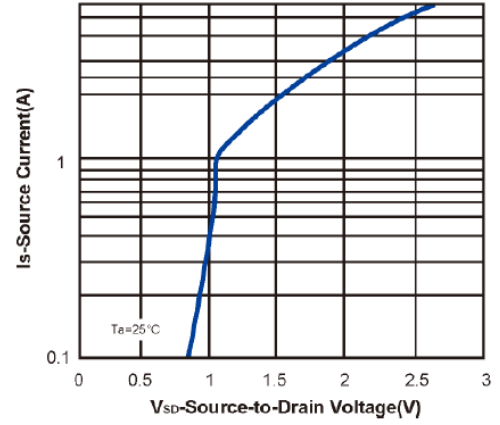


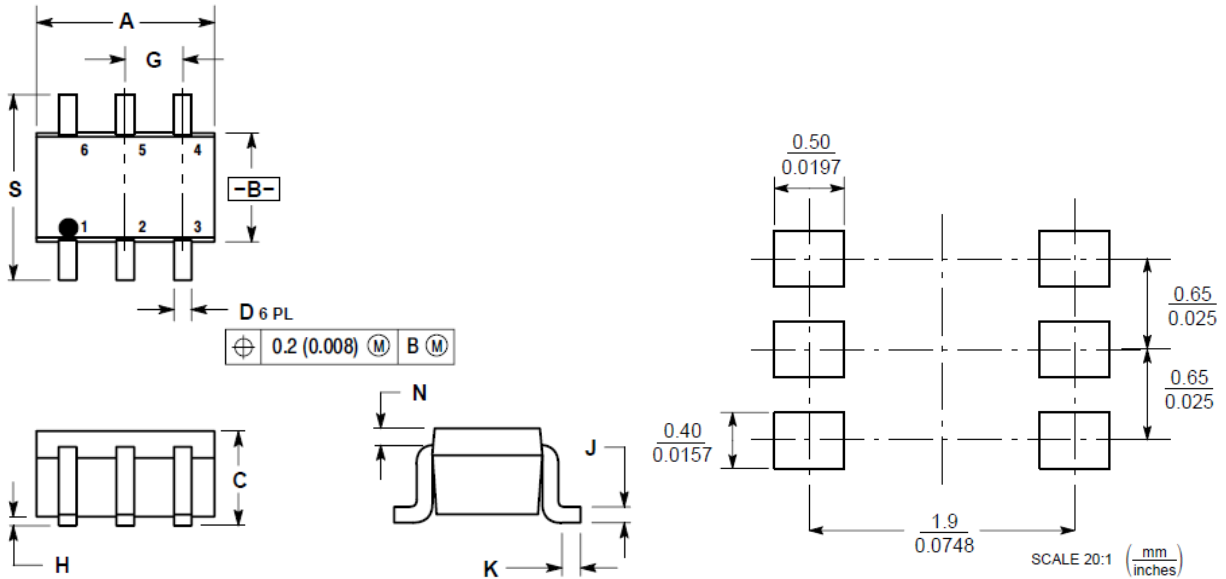
Figure 8. Body-diode Characteristics





PACKAGE INFORMATION

Dimension in SOT-363 (SC70-6) (Unit: mm)



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.800	2.200
B	0.045	0.053	1.150	1.350
C	0.031	0.043	0.800	1.100
D	0.004	0.012	0.100	0.300
G	0.026 BSC		0.650 BSC	
H	-	0.004	-	0.100
J	0.004	0.010	0.100	0.250
K	0.004	0.012	0.100	0.300
N	0.008 REF		0.200 REF	
S	0.079	0.087	2.000	2.200



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