DESCRIPTION

Available in SOT-363 package.
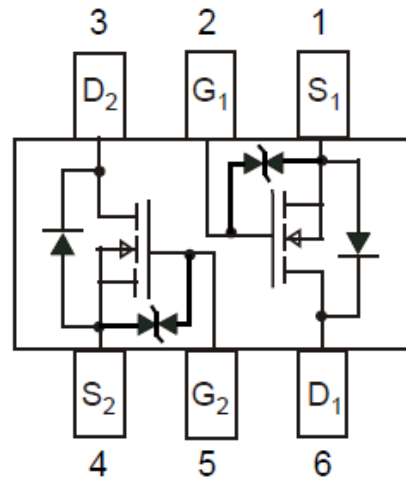
FEATURES

● ESD Protected: 1000V

● Available in SOT-363 package

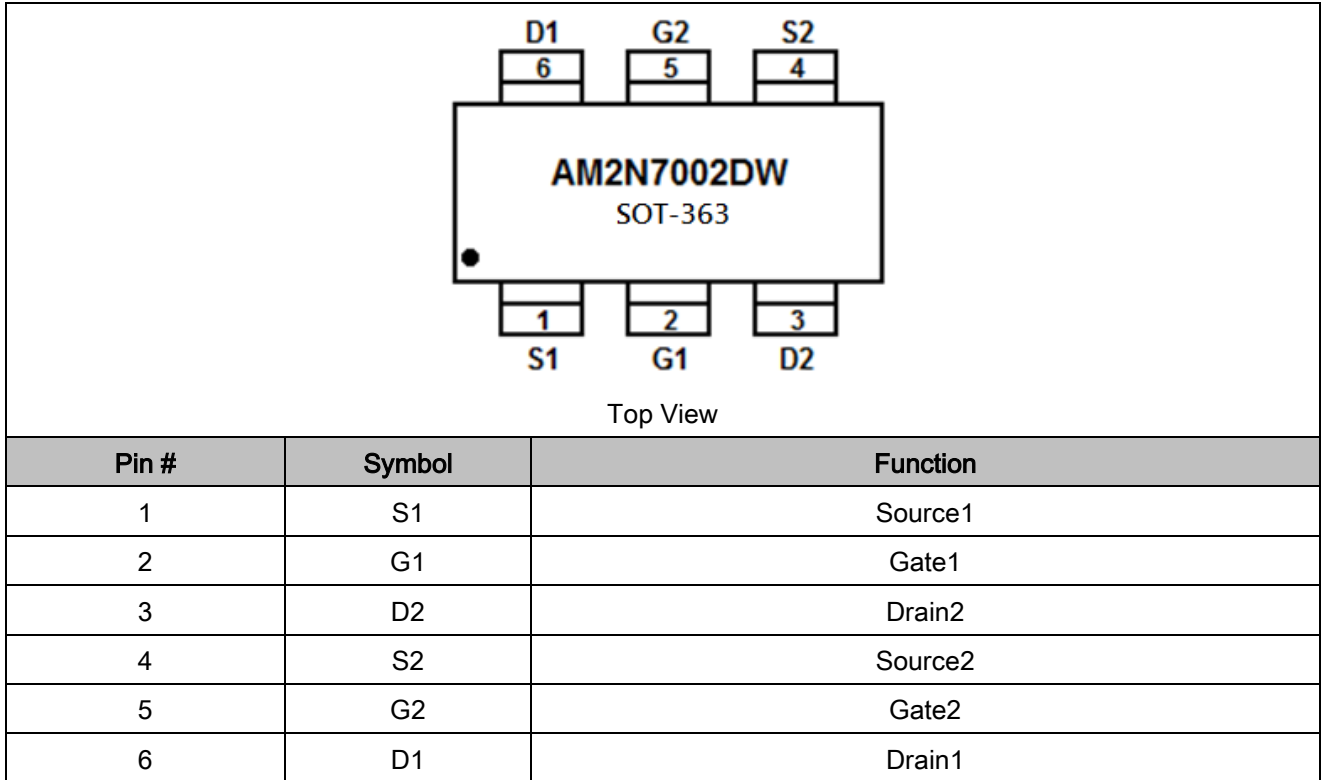## ORDERING INFORMATION

Package Type		Part Number
SOT-363 (SC70-6)	C6	AM2N7002DWC6R
		AM2N7002DWC6VR
Note	V: Halogen free Package R: Tape & Reel SPQ: 3,000pcs/Reel	
AiT provides all RoHS products Suffix " V " means Halogen free Package		

N CHANNEL MOSFET

PIN DESCRIPTION

D1	G2	S2
6	5	4

AM2N7002DW
SOT-363

1	2	3
S1	G1	D2

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

V_{DSS}, Drain−Source Voltage	60Vdc
V_{DGR}, Drain−Gate Voltage (R_{GS} = 1.0MΩ)	60Vdc
Drain Current	
I_D, Continuous T_C = 25°C [NOTE1]	±115mAdc
T_C = 100°C [NOTE1]	±75mAdc
I_{DM}, Pulsed [NOTE2]	±800mAdc
Gate-Source Voltage	
V_{GS}, Continuous	±20Vdc
V_{GSM}, Non−repetitive (tp ≤ 50μs)	±40Vpk

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	Max.	Unit
Total Device Dissipation	P_D	380	mW
Per Device		250	
FR-5 Board [NOTE1]			
T_A = 25°C			
Derate above 25°C		3.0	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	328	°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	°C

ELECTRICAL CHARACTERISTICS

T_A = 25°C, unless otherwise specified

| Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	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	µAdc
Gate–Body Leakage Current, Reverse	I_{GSSR}	V_{GS} = -20Vdc		-	-	-1	µAdc
ON CHARACTERISTICS [NOTE2]							
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS} = V_{GS}, I_D = 250µAdc		1.0	-	2.0	Vdc
On-State Drain Current	$I_{D(ON)}$	V_{DS} ≥ 2.0$V_{DS(ON)}$, 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} = 10V, I_D = 500mAdc	T_J = 25°C	-	-	7.5	Ohms
			T_J = 125°C	-	-	13.5	
		V_{GS} = 5.0Vdc, I_D = 50mAdc	T_J = 25°C	-	-	7.5	
			T_J = 125°C	-	-	13.5	
Forward Transconductance	g_{FS}	V_{DS} ≥2.0$V_{DS(ON)}$,I_D=200mAdc		80	-	-	mS
DYNAMIC CHARACTERISTICS							
Input Capacitance	C_{ISS}	V_{DS} = 25Vcd, V_{GS} = 0, f = 1.0MHz		-	-	50	pF
Output Capacitance	C_{OSS}			-	-	25	
Reverse Transfer Capacitance	C_{RSS}			-	-	5.0	
SWITCHING CHARACTERISTICS [NOTE2]							
Turn-On Delay Time	$t_{d(ON)}$	V_{DD} = 25Vdc , I_D ≅500mAdc, R_G = 25Ω, R_L = 50Ω, V_{GEN} = 10V		-	-	20	ns
Turn-Off Delay Time	$t_{d(OFF)}$			-	-	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

NOTE1: FR−5 = 1.0 x 0.75 x 0.062 in

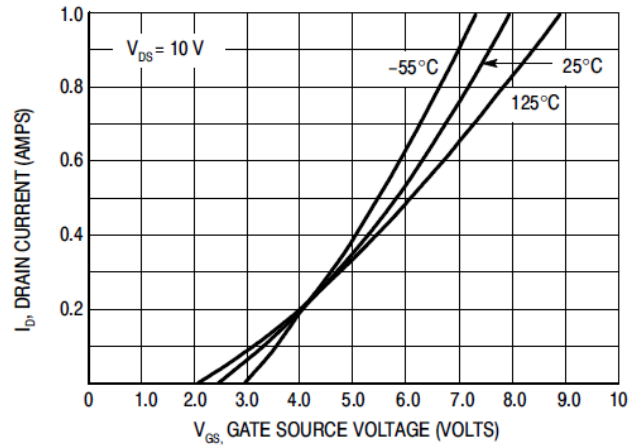NOTE2: Pulse Test: Pulse Width ≤ 300µs, Duty Cycle ≤ 2.0%.

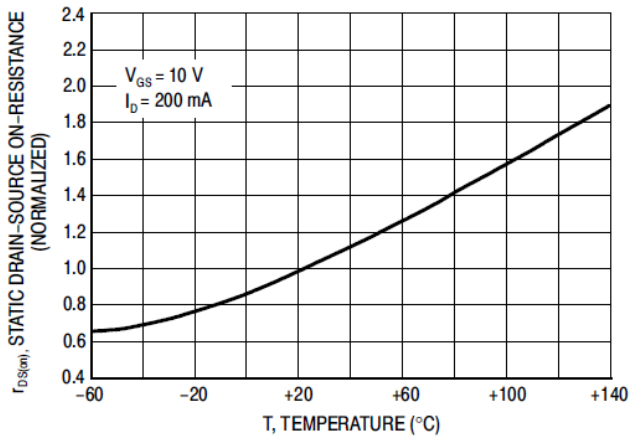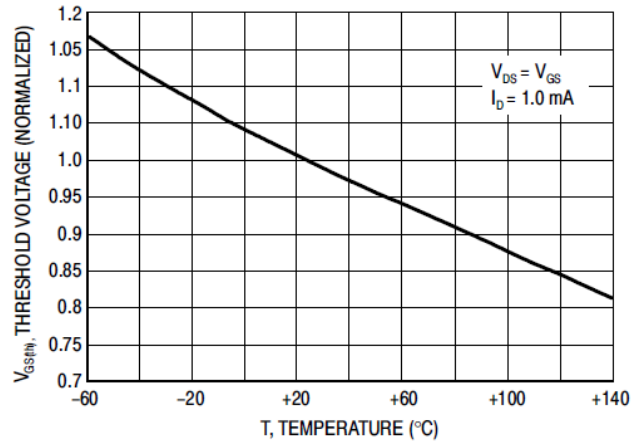## TYPICAL PERFORMANCE CHARACTERISTICS

1. Ohmic Region
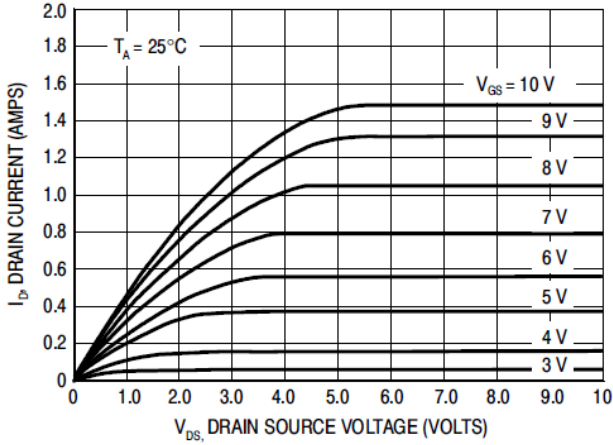
2. Transfer Characteristics
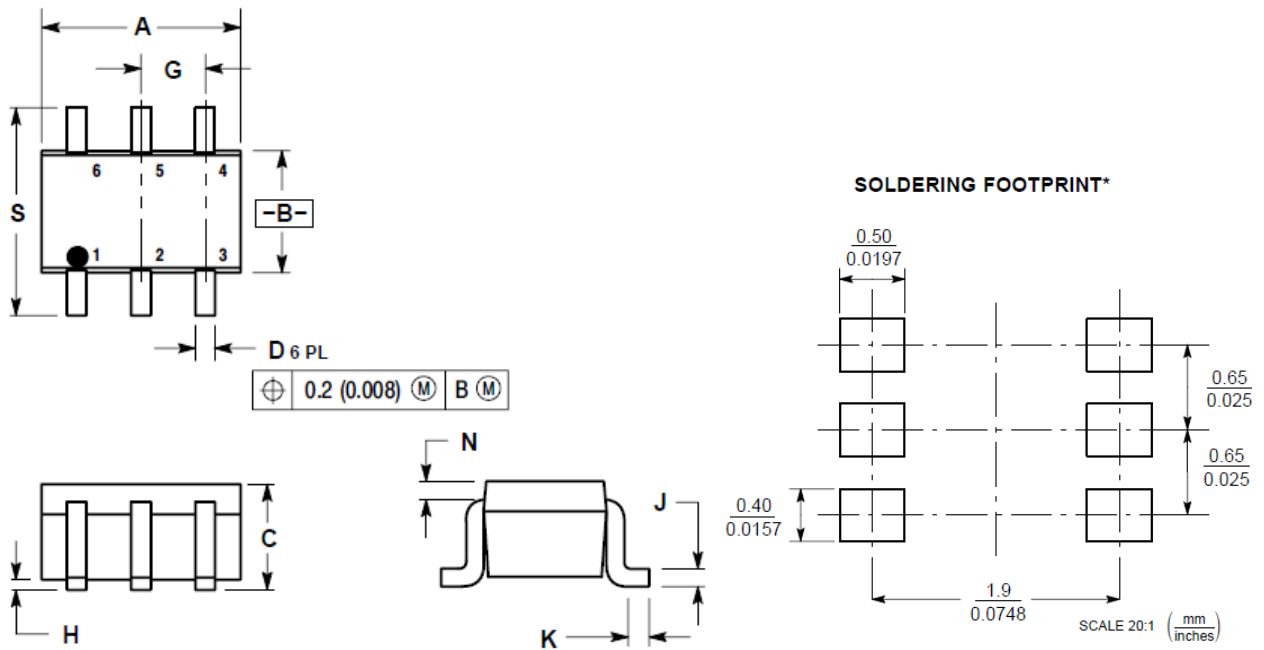
3. Temperature vs. Static Drain–Source On–Resistance

4. Temperature vs. Gate Threshold Voltage

PACKAGE INFORMATION

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

SOLDERING FOOTPRINT*

SYMBOL	MIN	MAX
A	1.800	2.200
B	1.150	1.350
C	0.800	1.100
D	0.100	0.300
G	0.650 BSC	
H	-	0.100
J	0.100	0.250
K	0.100	0.300
N	0.200 REF	
S	2.000	2.200

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