



DESCRIPTION

$V_{DS}=60V$

$V_{GS}=\pm 20V$

$I_D(A)=0.29A$

$R_{DS(ON)}=1.5\Omega(Typ.) @V_{GS}=10V$

$R_{DS(ON)}=2.0\Omega(Typ.) @V_{GS}=4.5V$

The AM6N7002K is available in SC70-6 package

ORDERING INFORMATION

Package Type	Part Number	
SC70-6 SPQ: 3,000pcs/Reel	C6	AM6N7002KC6R
		AM6N7002KC6VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

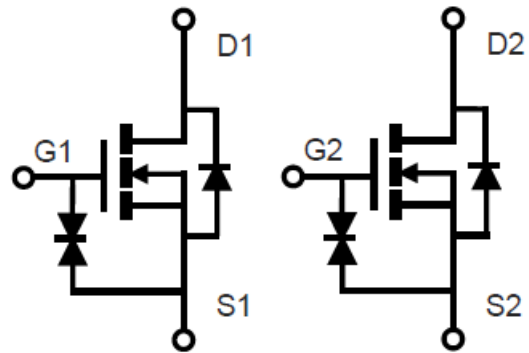
FEATURES

- High Speed Switching
- ESD Protection $>\pm 2kV$ HBM
- Available in SC70-6 package

APPLICATIONS

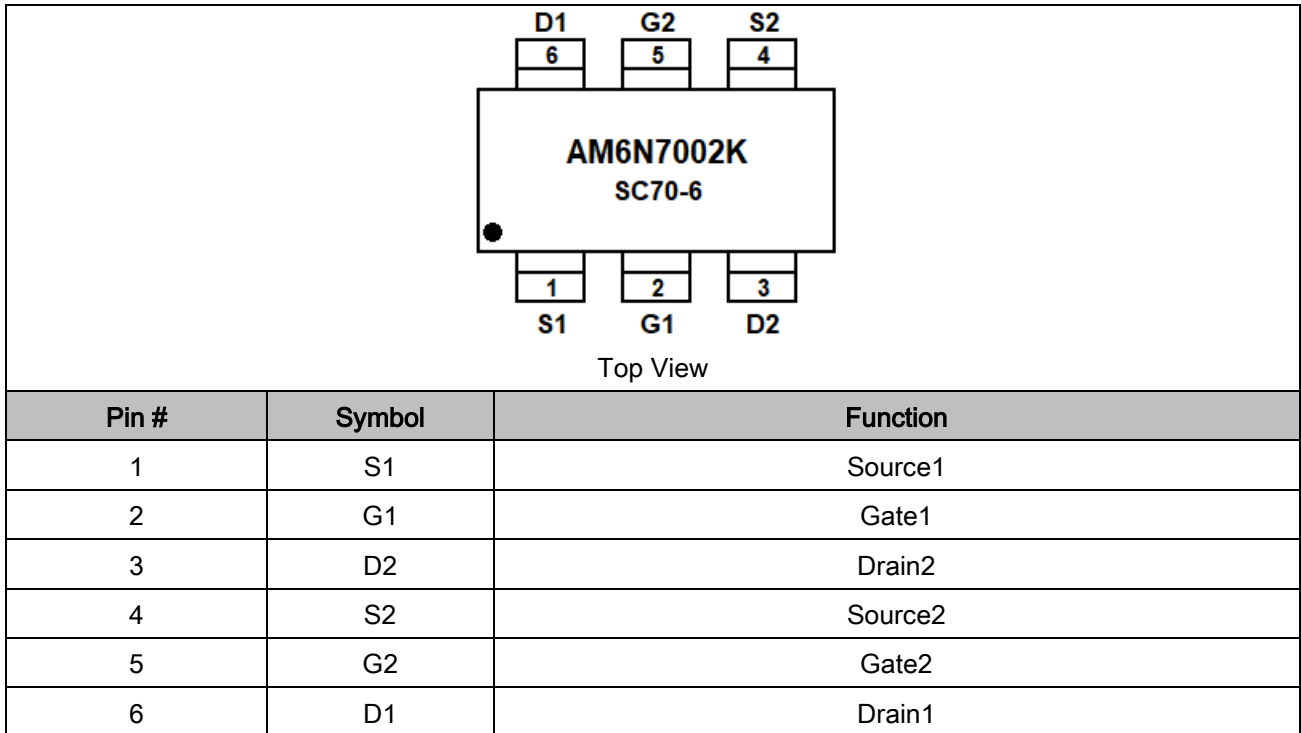
- Portable appliances
- Analog switching application.

N CHANNEL MOSFET





PIN DESCRIPTION





ABSOLUTE MAXIMUM RATINGS

T_A=25°C, unless otherwise noted

V _{DS} , Drain-Source Voltage		60V
V _{GS} , Gate-Source Voltage		±20V
I _D , Continuous Drain Current	T _A =25°C	0.29A
	T _A =70°C	0.23A
I _{DM} , Pulsed Drain Current ^{NOTE2}		1A
P _D , Power Dissipation ^{NOTE1}	T _A =25°C	0.26W
	T _A =70°C	0.17W
T _J , Operation Junction Temperature		-55°C ~ 150°C
T _{STG} , Storage Temperature Range		-55°C ~ 150°C
ESD, Gate-Source ESD Rating (HBM)		2kV

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
Thermal Resistance Junction to Ambient ^{NOTE1,3}	teady-State	R _{θJA}	480	°C/W



ELECTRICAL CHARACTERISTICS

T_A=25°C, unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Parameters						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	60	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.6	2.5	V
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V	-	-	±10	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V, T _J =25°C	-	-	1	μA
		V _{DS} =12V, V _{GS} =0V, T _J =85°C	-	-	30	
Drain-source On-Resistance ^{NOTE4}	R _{DS(on)}	V _{GS} =10V, I _D =0.26A	-	1.5	1.8	Ω
		V _{GS} =4.5V, I _D =0.2A	-	2	2.5	
Diode Characteristics						
Diode Forward Voltage ^{NOTE4}	V _{SD}	I _S =0.2A, V _{GS} =0V	-	-	1	V
Diode Continuous Forward Current	I _S		-	-	0.15	A
Reverse Recovery Time	t _{rr}	I _S =0.4A, dI/dt=100A/μs	-	40	-	ns
Reverse Recovery Charge	Q _{rr}		-	39	-	nC
Dynamic and Switching Parameters^{NOTE5}						
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} =10V, I _D =0.4A	-	0.65	-	nC
Gate-Source Charge	Q _{gs}		-	0.1	-	
Gate-Drain Charge	Q _{gd}		-	0.21	-	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz	-	31	-	pF
Output Capacitance	C _{oss}		-	4.2	-	
Reverse Transfer Capacitance	C _{rss}		-	3	-	
Turn-On Time	t _{d(on)}	V _{DD} =30V, V _{GS} =10V, R _G =25Ω, I _D =0.4A	-	3.8	7	ns
	t _r		-	3.6	6.8	
Turn-Off Time	t _{d(off)}		-	16	30	
	t _f		-	10	19	

NOTE1: Surface mounted on FR4 board using the minimum recommended pad size.

NOTE2: Pulsed width limited by maximum junction temperature, T_{J(MAX)}=150°C.

NOTE3: Using ≤ 10s junction-to-ambient thermal resistance is base on T_{J(MAX)}=150°C.

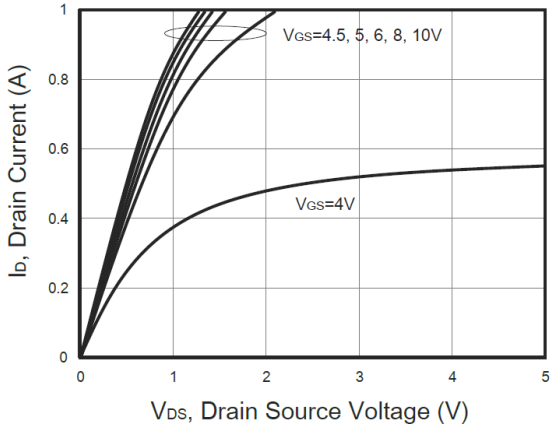
NOTE4: Pulse test width ≤300μs and duty cycle ≤ 2%.

NOTE5: Guaranteed by design, not subject to production testing.

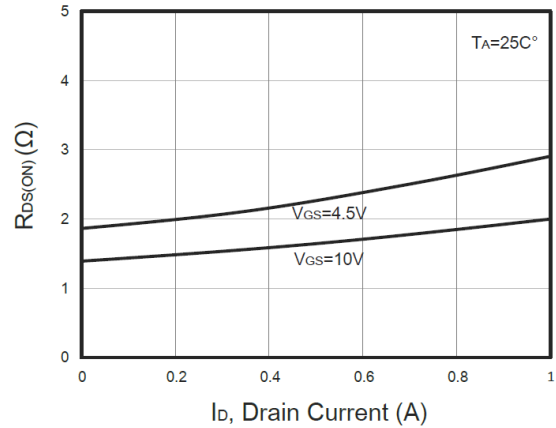


TYPICAL CHARACTERISTICS

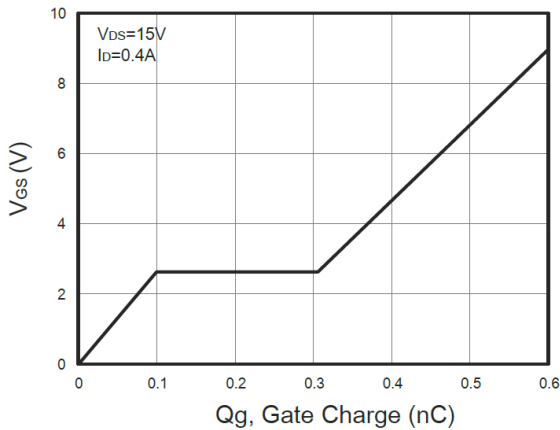
1. Output Characteristics



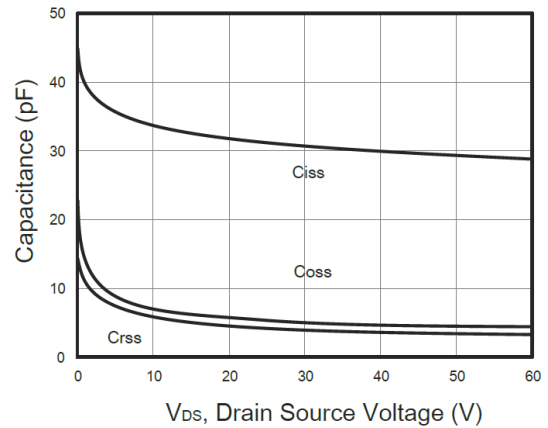
2. Drain-Source On Resistance



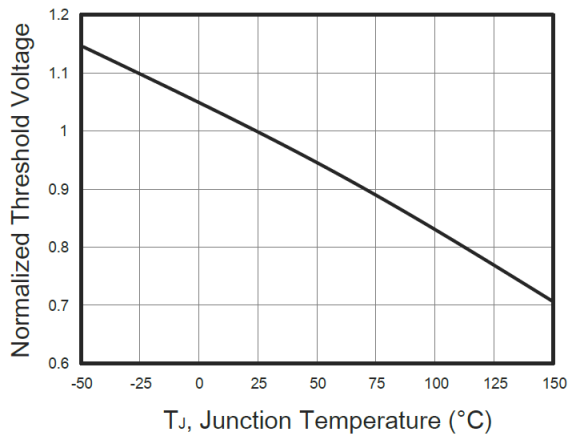
3. Gate Charge



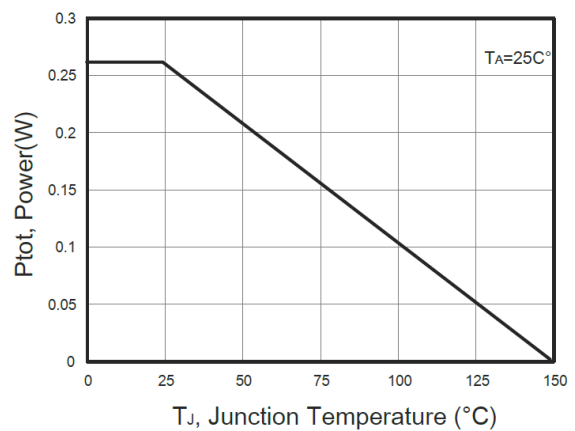
4. Capacitance



5. Gate Threshold Voltage

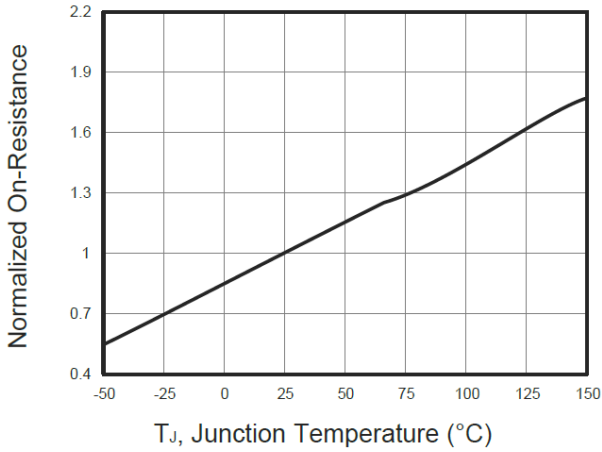


6. Power Dissipation

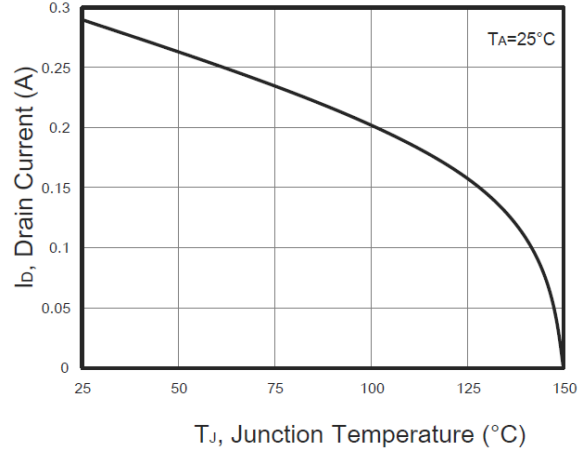




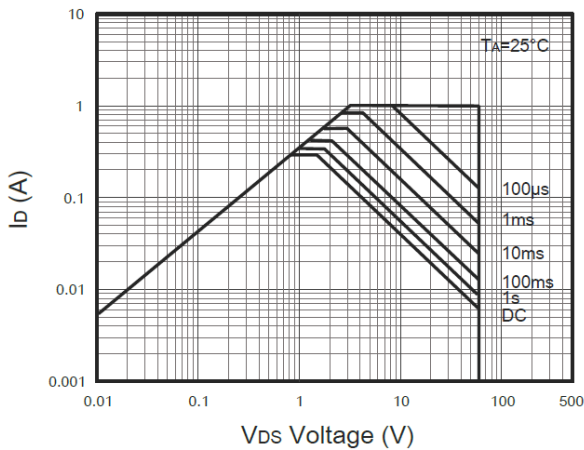
7. Drain-Source On Resistance



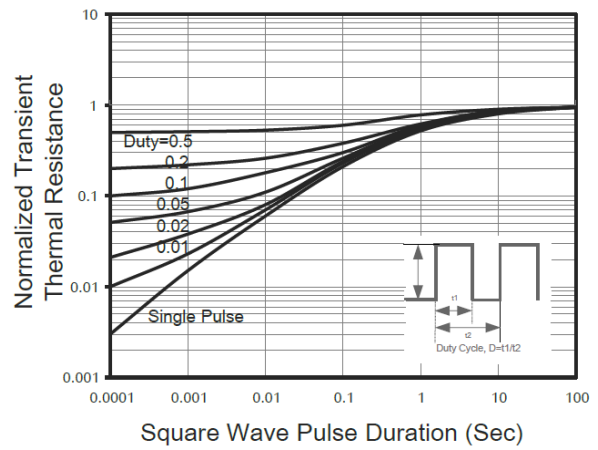
8. Drain Current vs Tj



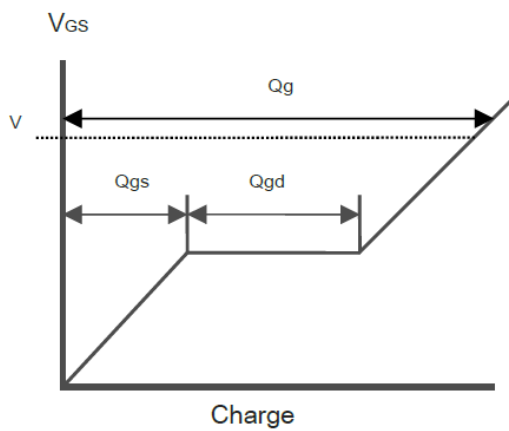
9. Maximum Safe Operation Area



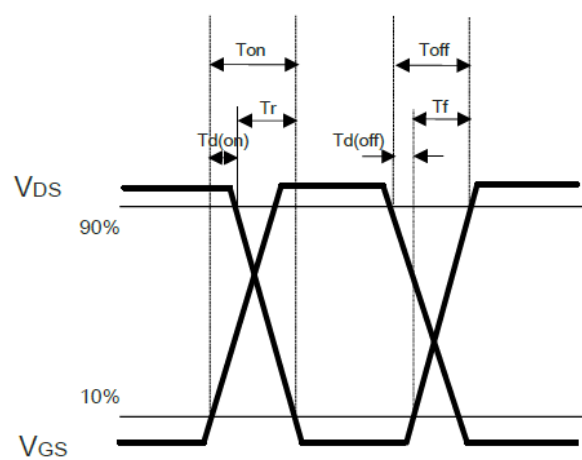
10. Thermal Transient Impedance



11. Gate Chrg Waveform



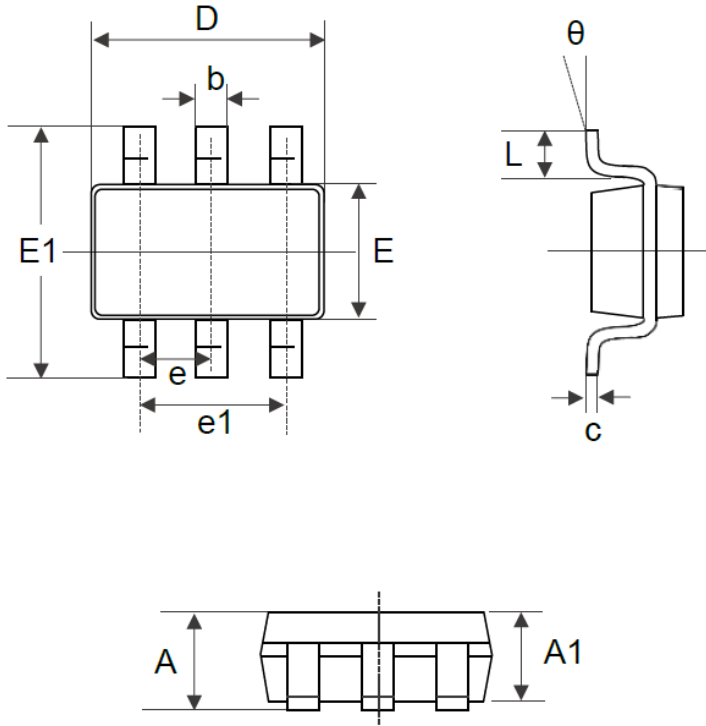
12. Switching Time Waveform



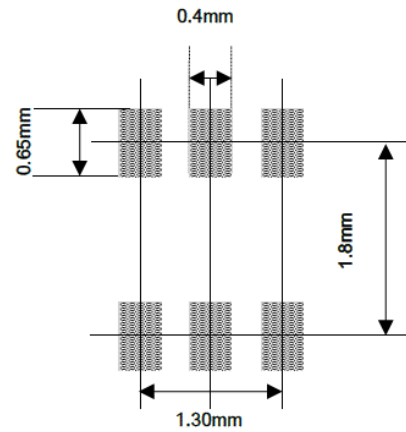


PACKAGE INFORMATION

Dimension in SC70-6 (Unit: mm)



Recommended Land Pattern



Symbol	Inches		Millimeters	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.800	1.000	0.031	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.250	0.004	0.010
D	1.800	2.200	0.071	0.087
E	1.150	1.350	0.045	0.053
E1	2.000	2.400	0.079	0.092
e	0.650 BSC		0.026 BSC	
e1	1.200	1.400	0.047	0.055
L	0.100	0.350	0.004	0.014
theta	0°	8°	0°	8°



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