DESCRIPTION

The AM2N7002T is available in SC-89 package.

FEATURES

- Low Gate Charge for Fast Switching
- Small 1.6 X 1.6 mm Footprint
- ESD Protected Gate
- ESD Protected: 2000V
- Available in SC-89 Package

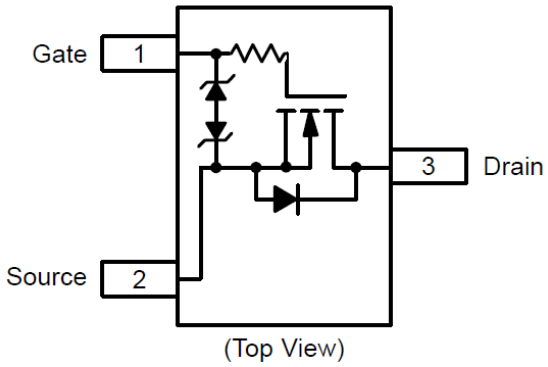
ORDERING INFORMATION

Package Type	Part Number	
SC-89 SPQ: 3,000pcs/Reel	CK3	AM2N7002TCK3R
		AM2N7002TCK3VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

APPLICATION

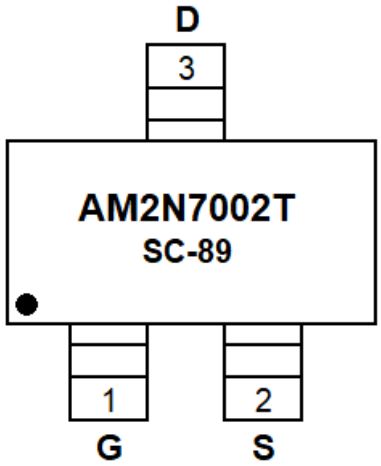
- Power Management Load Switch
- Level Shift
- Portable Applications such as Cell Phones, Media Players, Digital Cameras, PDA's, Video Games, Hand Held Computers, etc.

PIN DESCRIPTION



(Top View)

PIN DESCRIPTION



Top View

Pin #	Symbol	Function
1	G	Gate
2	S	Source
3	D	Drain

ABSOLUTE MAXIMUM RATINGS

T_A=25℃

V_{DSS}, Drain−to−Source Voltage	30V
V_{GS}, Gate−to−Source Voltage	±10V
I_D, Continuous Drain Current[NOTE1]	154mA
P_D, Power Dissipation[NOTE1]	300mW
I_{DM}, Pulsed Drain Current (tp ≤10μs)	618mA
T_J, T_{STG}, Operating Junction and Storage Temperature	-55°C ~+150°C
I_{SD}, Continuous Source Current (Body Diode)	154mA
T_L, Lead Temperature for Soldering Purposes (1/8″ from case for 10s)	260°C

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	Limit	Units
Junction−to−Ambient – Steady State[NOTE1]	$R_{\theta JA}$	416	°C/W

ELECTRICAL CHARACTERISTICS

T_A=25℃

Parameter	Symbol	Conditions	Min	Typ.	Max	Units
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=100μA	30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=30V	-	-	1	μA
		V_{GS}=0V, V_{DS}=20V, T_J=85 °C	-	-	1	
Gate−to−Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±10V	-	-	±25	μA
		V_{DS}=0V, V_{GS}=±5V	-	-	±1	
		V_{DS}=0V, V_{GS}=±5V, T_J=85°C	-	-	±1	
ON CHARACTERISTICSNOTE 2						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=100μA	0.5	1	1.5	V
Drain−to−Source On Resistance	$R_{DS(ON)}$	V_{GS}=4.5V,I_D=154mA	-	1.4	7	Ohm
		V_{GS}=2.5V,I_D=154mA	-	2.3	7.5	
Forward Transconductance	g_{FS}	V_{DS}=3V,I_D=154mA	-	80	-	mS
CAPACITANCES						
Input Capacitance	C_{lss}	V_{DS}=5.0V, V_{GS}=0V, f=1.0MHz	-	11.5	-	pF
Output Capacitance	C_{oss}		-	10	-	
Reverse Transfer Capacitance	C_{rss}		-	3.5	-	
SWITCHING CHARACTERISTICSNOTE 3						
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=4.5 V, V_{DS}= 5.0V, I_D=75mA, R_G=10Ohm	-	13	-	ns
Rise Time	t_r		-	15	-	
Turn-Off Delay Time	$t_{d(off)}$		-	98	-	
Fall Time	t_f		-	60	-	
DRAIN−SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=0.154A	-	0.77	0.9	V

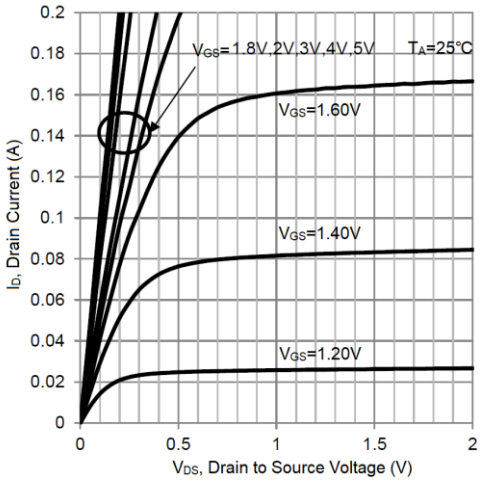
NOTE1: Surface−mounted on FR4 board using 1 in sq pad size

NOTE2: Pulse Test: pulse width ≤300μs, duty cycle ≤ 2%.

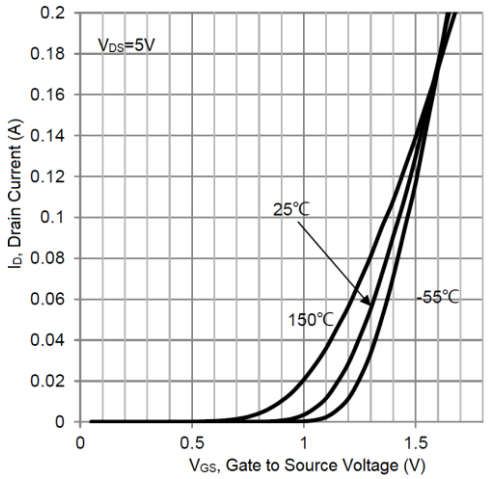
NOTE3: Switching characteristics are independent of operating junction temperatures.

TYPICAL PERFORMANCE CHARACTERISTICS

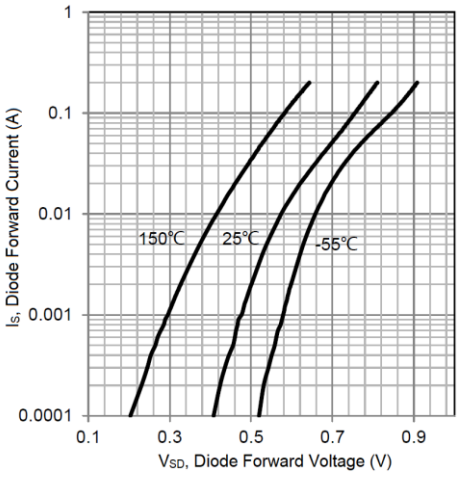
1. I_D vs. V_{DS}



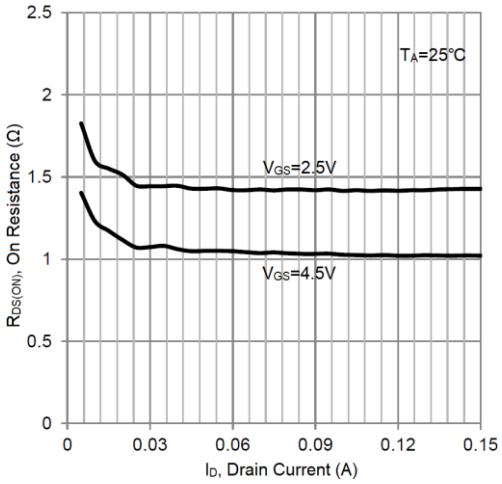
2. I_D vs. V_{GS}



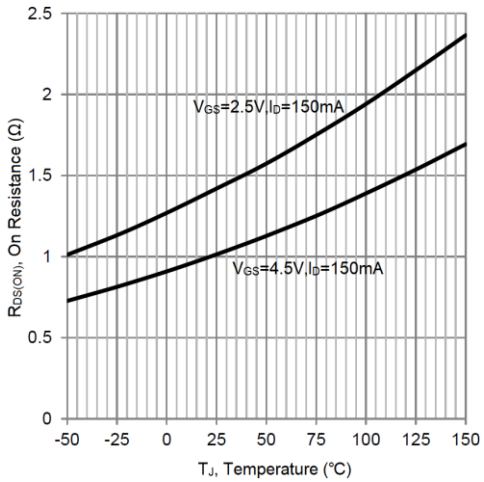
3. I_S vs. V_{SD}



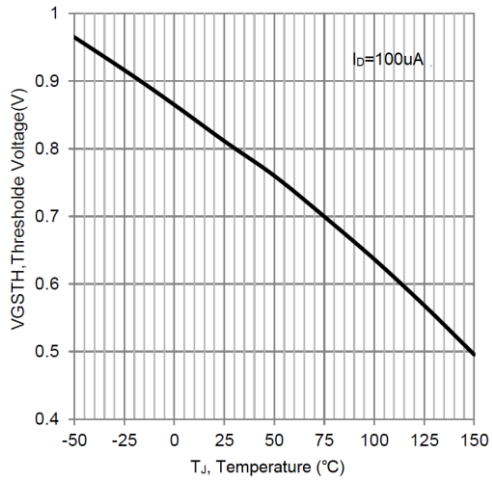
4. $R_{DS(ON)}$ vs. I_D



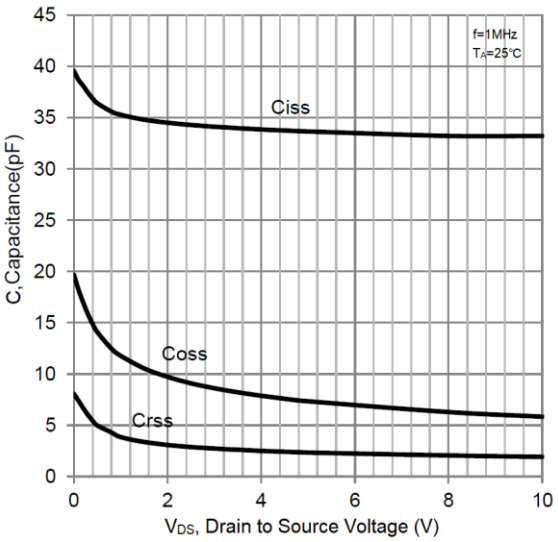
5. $R_{DS(ON)}$ vs. T_J



6. V_{GSTH} vs. T_J

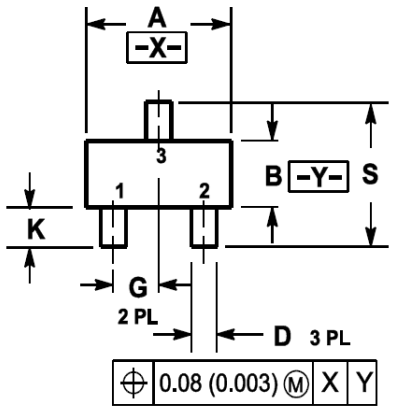


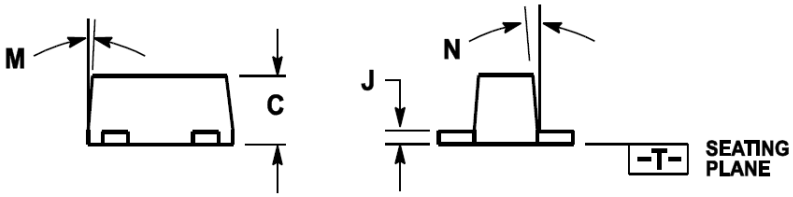
7. Capacitance



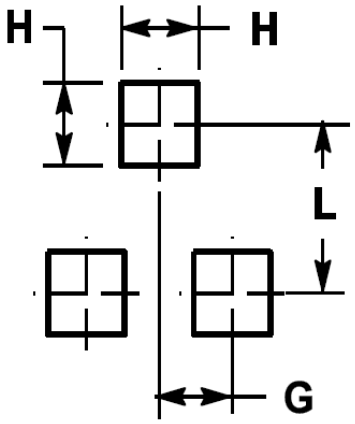
PACKAGE INFORMATION

Dimension in SC-89 Package (Unit: mm)





SOLDERING FOOTPRINT



DIM	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	1.50	1.70	0.059	0.067
B	0.75	0.95	0.030	0.040
C	0.60	0.80	0.024	0.031
D	0.23	0.33	0.009	0.013
G	0.50 BSC		0.020 BSC	
H	0.53 REF		0.021 REF	
J	0.10	0.20	0.004	0.008
K	0.30	0.50	0.012	0.020
L	1.10 REF		0.043 REF	
M	-	10°	-	10°
N	-	10°	-	10°
S	1.50	1.70	0.059	0.067

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