Elektronische Bauelemente

SCG7002K-C

300mA, 60V, $R_{DS(ON)}$ 2.5Ω

N-Ch Enhancement Mode Power MOSFET

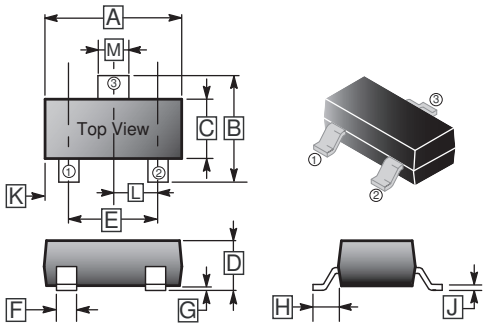
RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

FEATURES

- Trench Power MV MOSFET Technology
- Voltage Controlled Small Signal Switch
- Low Input Capacitance
- Fast Switching Speed
- Low Input / Output Leakage
- ESD Protected Up to 2kV (HBM)

SOT-523



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.50	1.70	G	-	0.10
B	1.45	1.75	H	0.55 REF.	
C	0.70	0.90	J	0.08	0.20
D	0.60	0.90	K	-	
E	0.90	1.10	L	0.50 TYP.	
F	0.15	0.35	M	0.25	0.45

MARKING

72C

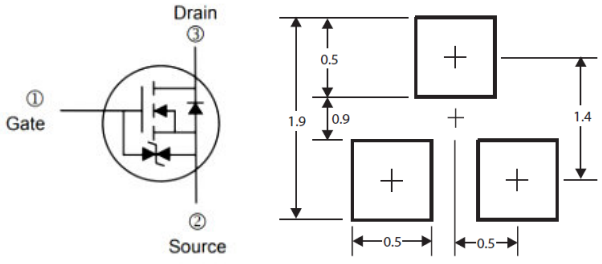
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-523	3K	7 inch

ORDER INFORMATION

Part Number	Type
SCG7002K-C	Lead (Pb)-free and Halogen-free

Mounting Pad Layout



*Dimensions in millimeters

MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current @V_{GS}=10V	T_A=25℃	I_D	300	mA
	T_A=70℃		240	
Pulsed Drain Current [1]		I_{DM}	1.5	A
Power Dissipation	T_A=25℃	P_D	300	mW
Thermal Resistance from Junction-Ambient [2]		$R_{\theta JA}$	416	℃/W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	℃

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	60	-	-	V	V_{GS}=0, I_D=250μA
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	2.5	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Body Leakage	I_{GSS}	-	-	±10	μA	V_{DS}=0, V_{GS}= ±20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=60V, V_{GS}=0
Drain-Source On Resistance	$R_{DS(ON)}$	-	1.9	2.5	Ω	V_{GS}=10V, I_D=300mA
		-	2	3		V_{GS}=4.5V, I_D=200mA
Total Gate Charge	Q_g	-	1.65	-	nC	I_D=0.3A, V_{DS}=30V, V_{GS}=10V
Turn-on Delay Time	$T_{d(on)}$	-	6.5	-	nS	V_{DD}=30V, I_D=300mA, V_{GS}=10V, R_{GEN}=6Ω
Turn-off Delay Time	$T_{d(off)}$	-	9.6	-		
Input Capacitance	C_{iss}	-	27	-	pF	V_{DS}=30V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	3	-		
Reverse Transfer Capacitance	C_{rss}	-	2	-		
Source-Drain Diode						
Diode Forward Voltage	V_{SD}	-	-	1.2	V	I_S=300mA, V_{GS}=0V
Continuous Source Current	I_S	-	-	300	mA	
Reverse Recovery Time	t_{rr}	-	24	-	nS	I_S=300mA, V_{GS}=0V, V_R=25V, dI/dt=100A/μs

Notes:
1. Pulse Test: Pulse Width≤300us, Duty cycle≤2%.
2. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

TYPICAL CHARACTERISTIC CURVES

Figure1. Output Characteristics

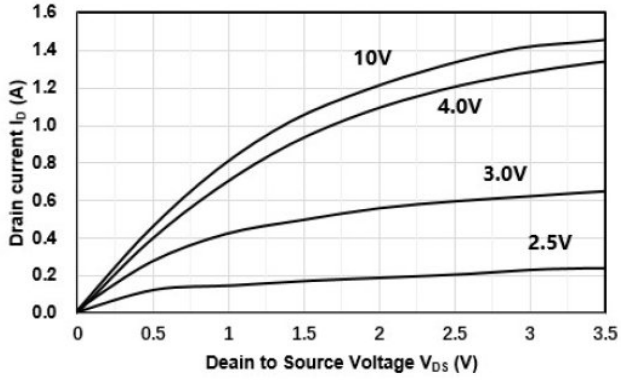


Figure2. Transfer Characteristics

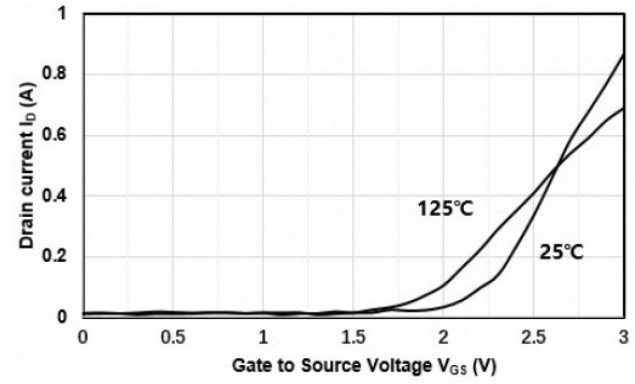


Figure3. Capacitance Characteristics

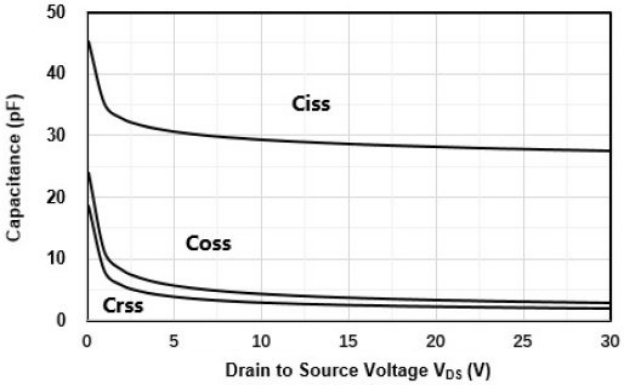


Figure4. Gate Charge

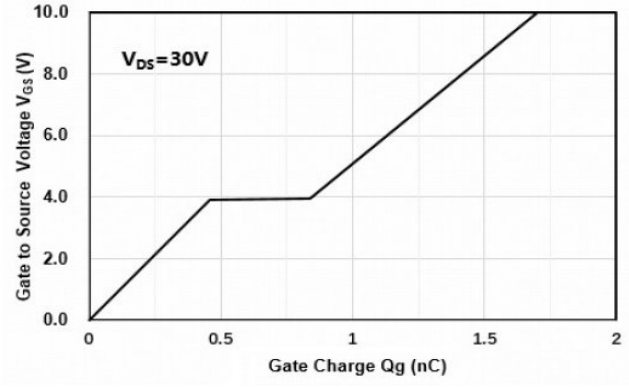


Figure5. Drain-Source on Resistance

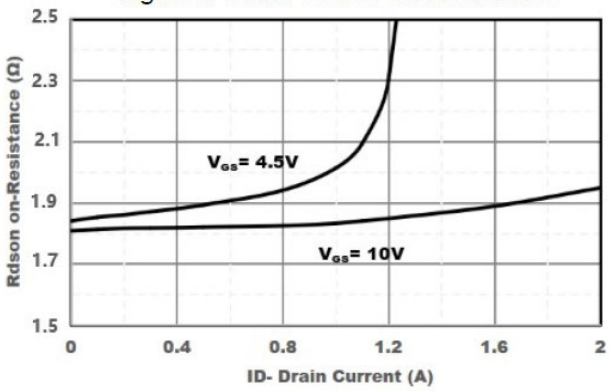


Figure6. Drain-Source on Resistance

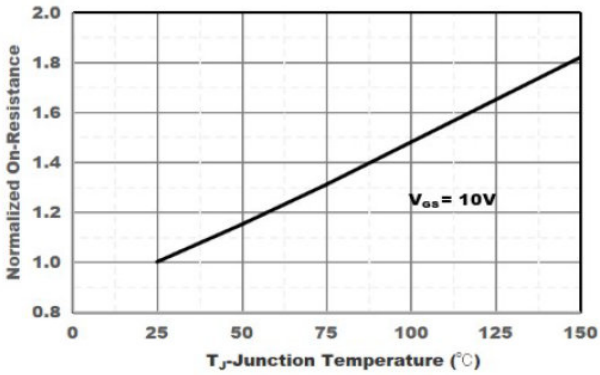


Figure7. Safe Operation Area

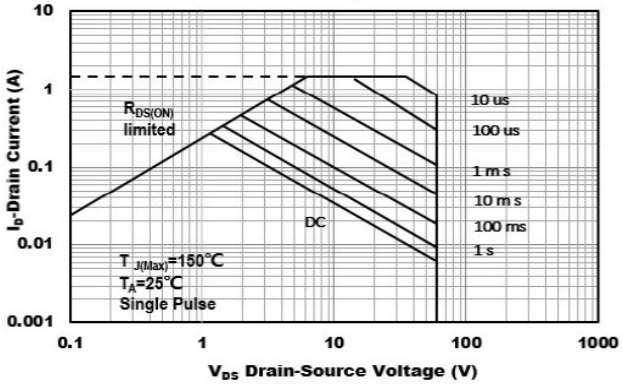


Figure8. Switching wave