Elektronische Bauelemente

SMS72K-C

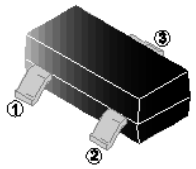
320mA, 60V, $R_{DS(ON)}$ 3Ω
N-Ch Enhancement Mode Power MOSFET

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- High Density Cell Design for Low $R_{DS(ON)}$
- Very Low Leakage Current In Off Condition
- ESD Protected up to 2.5kV (HBM)

SOT-23

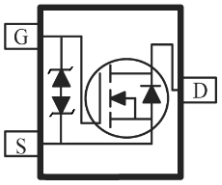


MARKING

K72

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch



ORDER INFORMATION

Part Number	Type
SMS72K-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current	I_D	320	mA
Pulsed Drain Current [1]	I_{DM}	2	A
Total Power Dissipation [3]	P_D	350	mW
Thermal Resistance from Junction-Ambient	$R_{\theta JA}$	357	°C/W
Operating Junction & Storage Temperature Range	T_J, T_{STG}	-55~150	°C

Notes:
1. Maximum DC current limited by the package
2. Pulse Test: Pulse Width≦300μA, Duty Cycle≦2%.
3. 1*MRP FR-4 PC board,2oz.

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	60	-	-	V	V_{GS}=0, I_D=10μA
Gate Threshold Voltage	$V_{GS(th)}$	1	-	2.1	V	V_{DS}=V_{GS}, I_D=250μA
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=60V, V_{GS}=0
Gate-Body Leakage Current	I_{GSS}	-	-	±10	μA	V_{GS}= ±20V, V_{DS}=0
Drain-Source On-Resistance	$R_{DS(ON)}$	-	-	3	Ω	V_{GS}=10V, I_D=500mA
		-	-	3.2		V_{GS}=4.5V, I_D=200mA
		-	-	2.8		V_{GS}=5V, I_D=50mA
Forward Transconductance	g_{fs}	-	300	-	mS	V_{DS}=0, I_D=250mA
Total Gate Charge	Q_g	-	0.8	-	nC	V_{DS}=15V, V_{GS}=5V, I_D=200mA
Turn-on Time	$t_{(on)}$	-	6	-	nS	V_{DD}=30V, V_{GEN}=10V, I_D=200mA R_G=10Ω, R_L=250Ω
Turn-off Time	$t_{(off)}$	-	13	-		
Input Capacitance	C_{iss}	-	35	-	pF	V_{DS}=25V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	12	-		
Reverse Transfer Capacitance	C_{rss}	-	7	-		
Source-Drain Diode						
Continuous Source Current	I_S	-	-	300	mA	V_{GS}=0, I_S=200mA
Diode Forward Voltage	V_{SD}	-	-	1.1	V	V_{GS}=0, I_S=200mA
Recovered Charge	Q_r	-	9.02	-	nC	V_{GS}=0, V_{DD}=30V, I_S=1A dI_S/dt=100A/μs
Reverse Recovery Time	t_{rr}	-	16.42	-	nS	

CHARACTERISTICS CURVES

FIG. 1-Output Characteristics

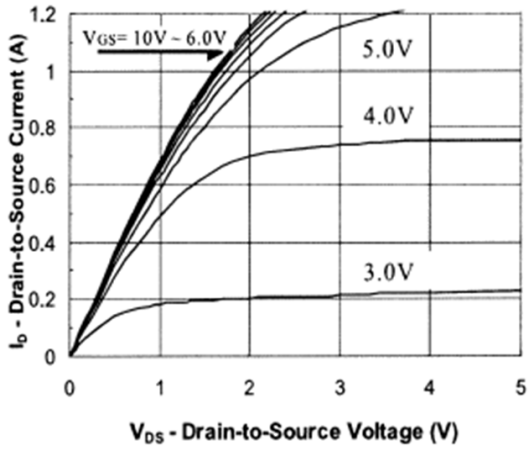


FIG. 2-Breakdown Voltage VS. Junction Temperature

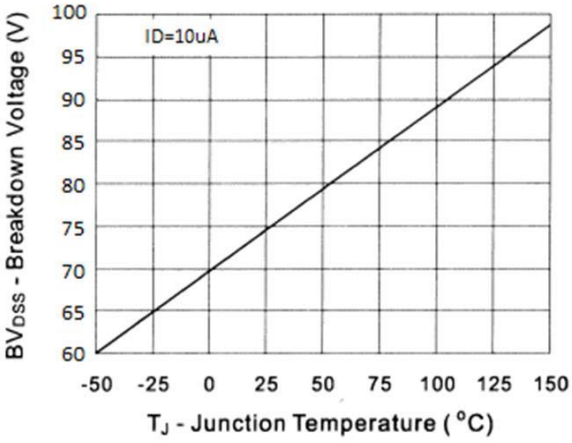


FIG. 3-On-Resistance VS. Drain Current

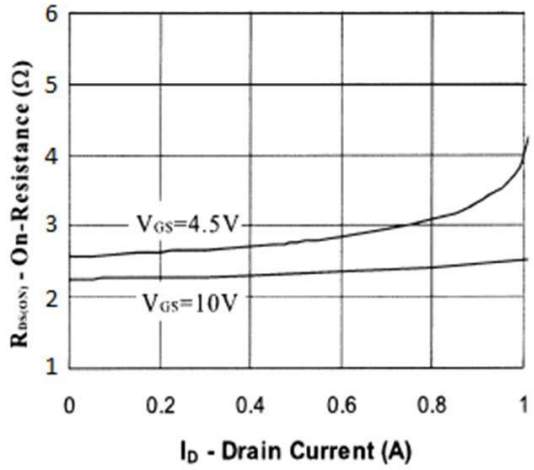


FIG. 4-On-Resistance VS. Gate-Source voltage

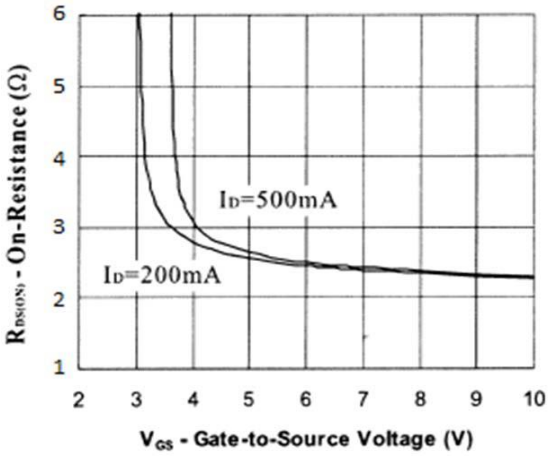


FIG. 5-On-Resistance VS. Junction Temperature

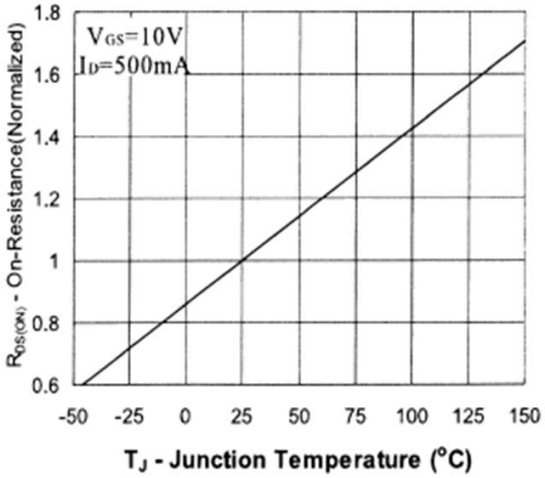
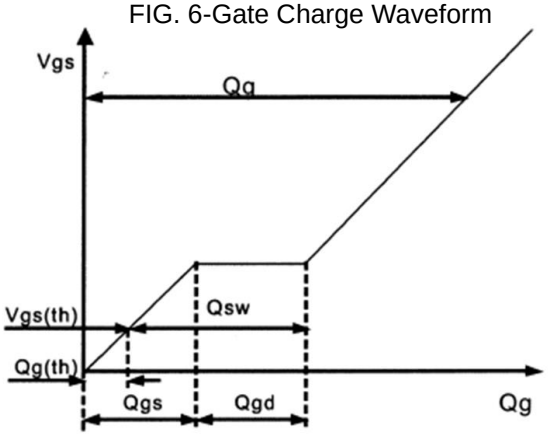


FIG. 6-Gate Charge Waveform



CHARACTERISTICS CURVES

FIG. 7-Gate Charge

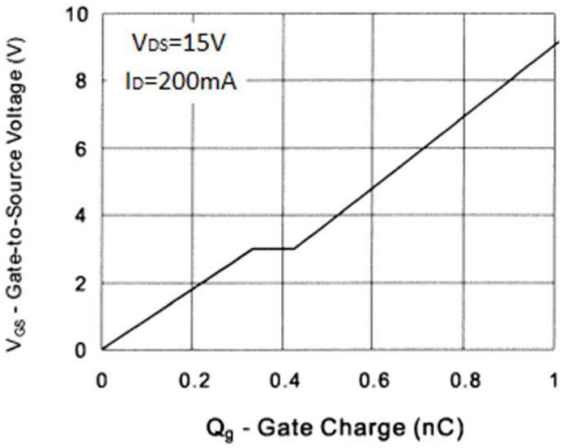


FIG. 8-Threshold Voltage VS. Temperature

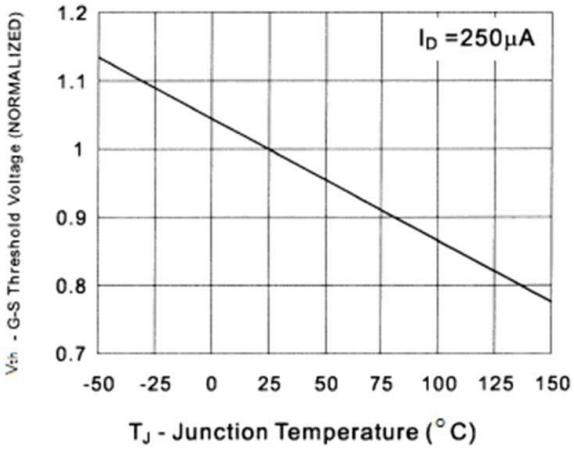


FIG. 9-Capacitance VS. Drain to Source Voltage

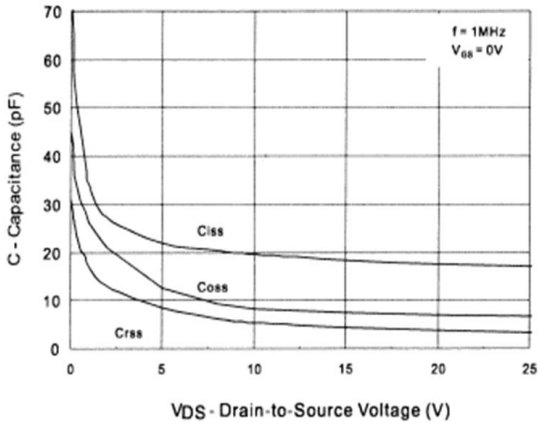


FIG. 10-Source-Drain Diode Forward Voltage

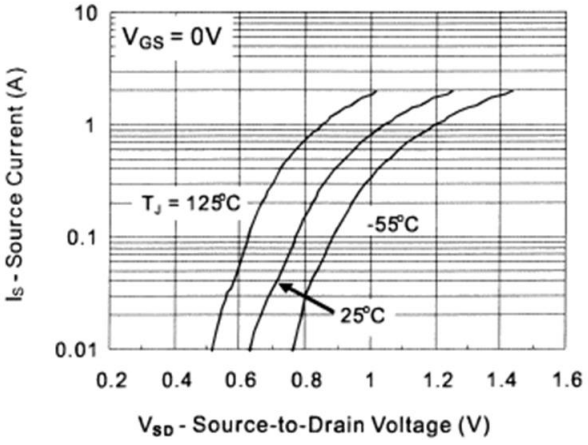
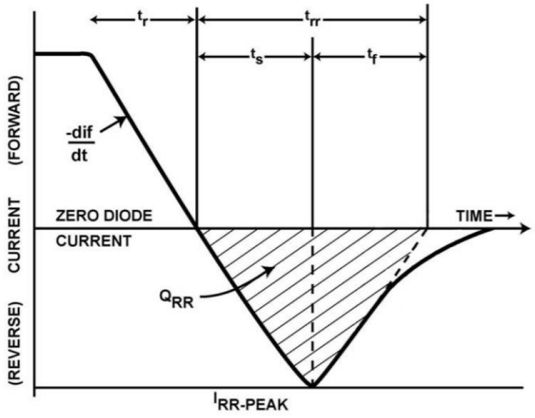
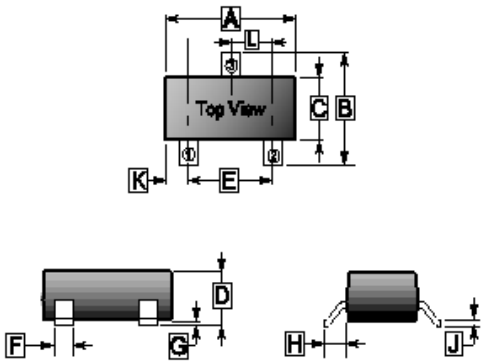


FIG. 11-Q_{RR} and T_{RR} Waveform definitions



PACKAGE OUTLINE DIMENSIONS

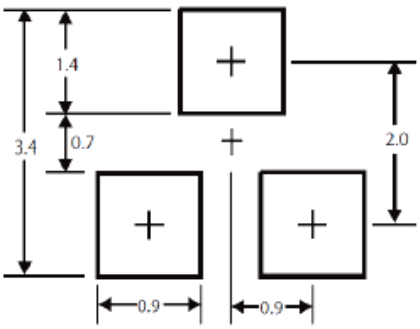
SOT-23



REF.	Millimeter	
	Min.	Max.
A	2.65	3.10
B	2.10	3.00
C	1.10	1.80
D	0.89	1.40
E	1.70	2.30
F	0.28	0.55
G	-	0.18
H	0.55 REF.	
J	0.05	0.26
K	0.60 REF.	
L	0.95 TYP.	

MOUNTING PAD LAYOUT

SOT-23



*Dimensions in millimeters