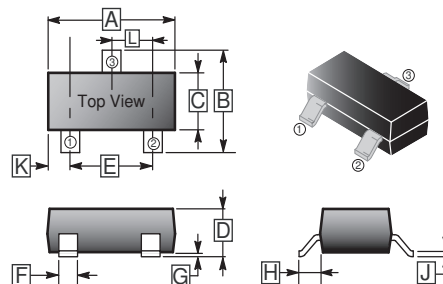


RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## FEATURES

- Epoxy Meets UL 94 V-0 Flammability Rating
- High Density Cell Design for Low  $R_{DS(ON)}$
- Voltage Controlled Small Signal Switch
- Rugged and Reliable
- ESD Protected up to 2KV(HBM)

## SOT-23



## MARKING

72KC

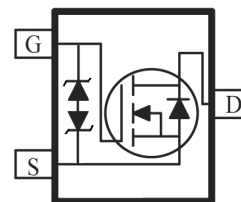
## PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0	0.18
B	2.10	3.00	H	0.55	REF.
C	1.20	1.80	J	0.08	0.26
D	0.89	1.3	K	0.6	REF.
E	1.70	2.3	L	0.95	BSC.
F	0.30	0.50			

## ORDER INFORMATION

Part Number	Type
SMS72KC-C	Lead (Pb)-free and Halogen-free



## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current	$I_D$	$T_A=25^\circ\text{C}$ , Steady State	300
		$T_A=70^\circ\text{C}$ , Steady State	240
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	1.5	A
Total Power Dissipation	$P_D$	350	mW
Thermal Resistance from Junction-Ambient <sup>2</sup>	$R_{\theta JA}$	416	$^\circ\text{C/W}$
Operating Junction and Storage Temperature	$T_J, T_{STG}$	-55~150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	60	-	-	V	$V_{GS}=0, I_D=250\mu\text{A}$
Zero Gate Voltage Drain Current	$I_{DSS}$	-	-	1	$\mu\text{A}$	$V_{DS}=60\text{V}, V_{GS}=0$
Gate-Body Leakage Current	$I_{GSS}$	-	-	$\pm 10$	$\mu\text{A}$	$V_{GS}=\pm 20\text{V}, V_{DS}=0$
Gate Threshold Voltage <sup>1</sup>	$V_{GS(th)}$	1	1.5	2.5	V	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$
Drain-Source On-Resistance <sup>1</sup>	$R_{DS(ON)}$	-	-	2.2	$\Omega$	$V_{GS}=10\text{V}, I_D=300\text{mA}$
		-	-	3		$V_{GS}=4.5\text{V}, I_D=200\text{mA}$
Total Gate Charge	$Q_G$	-	1.65	-	nC	$V_{GS}=10\text{V}, V_{DS}=30\text{V}, I_D=0.3\text{A}$
Turn-on Time	$t_{(on)}$	-	6.5	-	nS	$V_{GS}=10\text{V}, V_{DD}=30\text{V}, I_D=300\text{mA},$ $R_{GEN}=6\Omega$
Turn-off Time	$t_{(off)}$	-	9.6	-		
Reverse Recovery Time	$t_{rr}$	-	24	-		
Input Capacitance	$C_{iss}$	-	27	-	pF	$V_{DS}=30\text{V}, V_{GS}=0, f=1\text{MHz}$
Output Capacitance	$C_{oss}$	-	3	-		
Reverse Transfer Capacitance	$C_{rss}$	-	2	-		
<b>Source-Drain Diode</b>						
Diode Forward Voltage	$V_{SD}$	-	-	1.2	V	$V_S=0, I_S=300\text{mA}$

Notes:

1. Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .
2. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch

**TYPICAL CHARACTERISTICS**

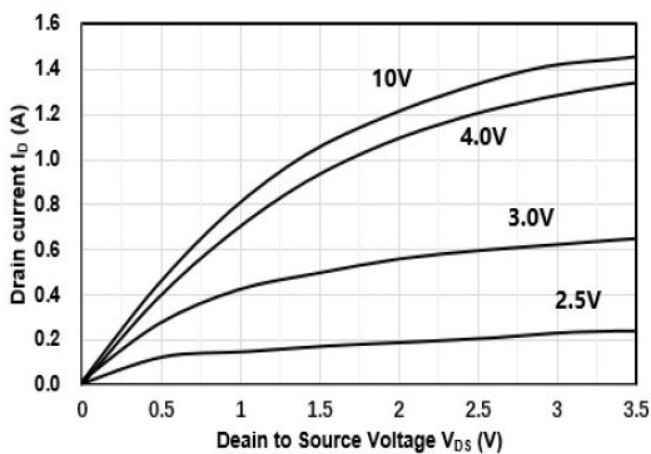


Figure1. Output Characteristics

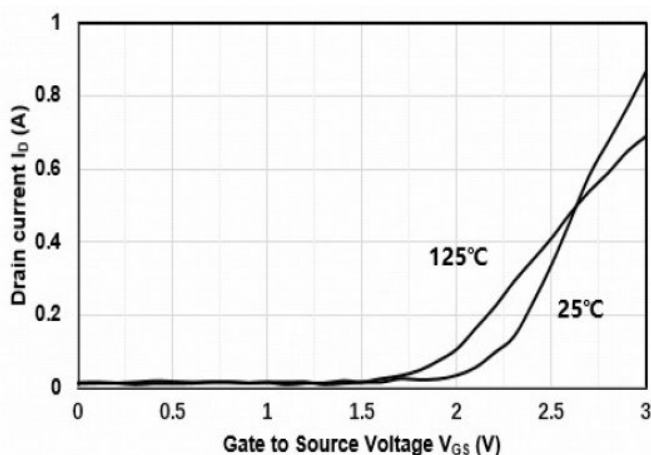


Figure2. Transfer Characteristics

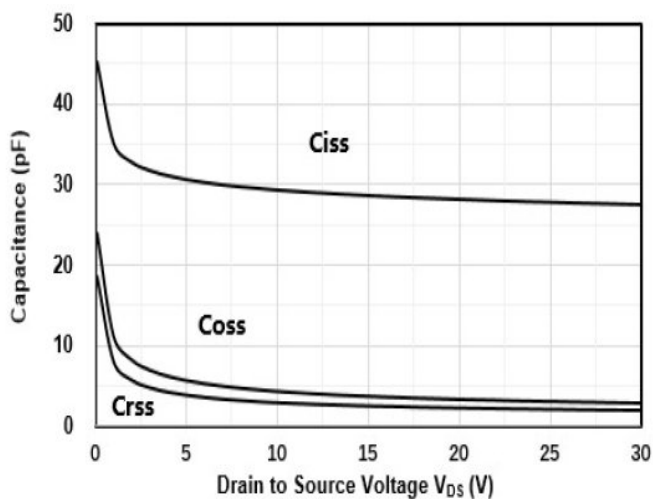


Figure3. Capacitance Characteristics

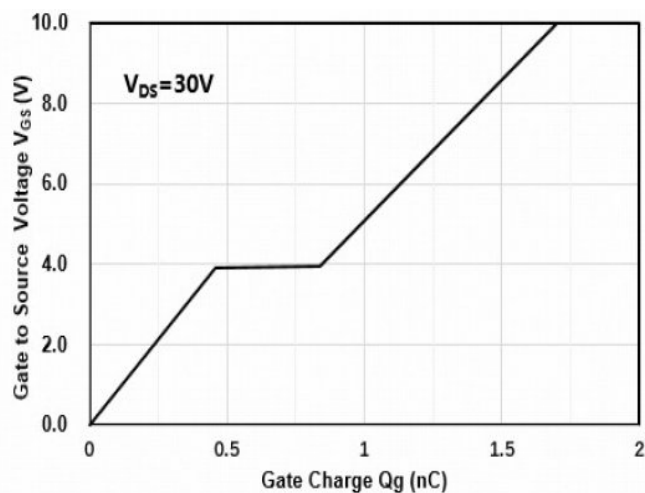


Figure4. Gate Charge

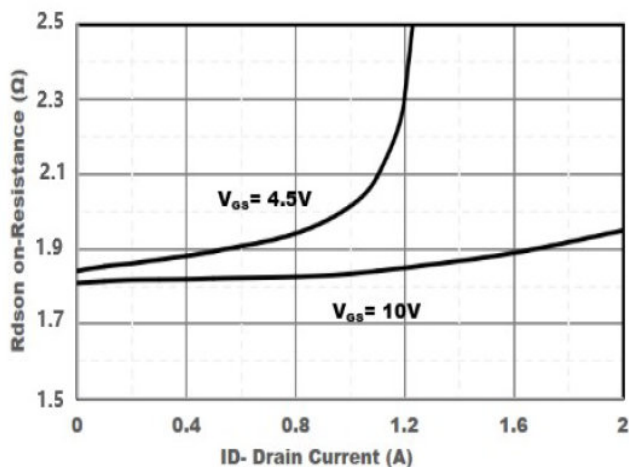


Figure5. Drain-Source on Resistance

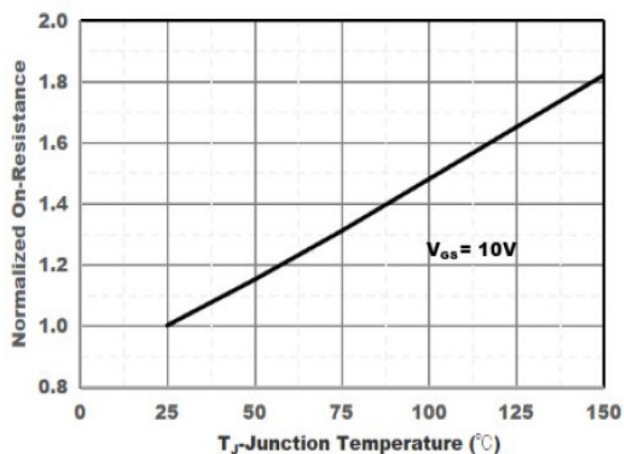


Figure6. Drain-Source on Resistance

**TYPICAL CHARACTERISTICS**

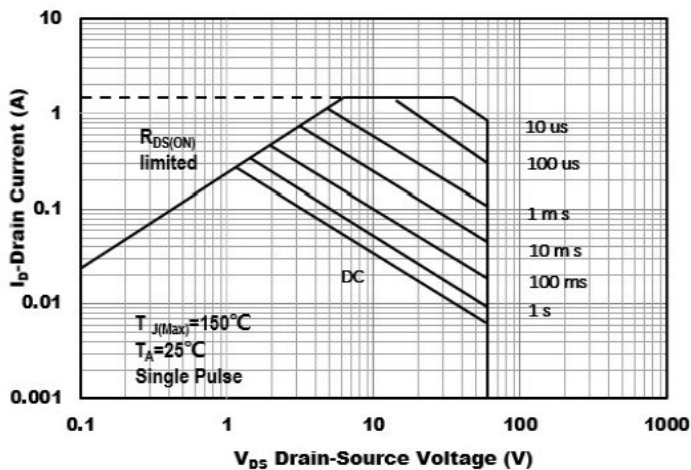


Figure7. Safe Operation Area

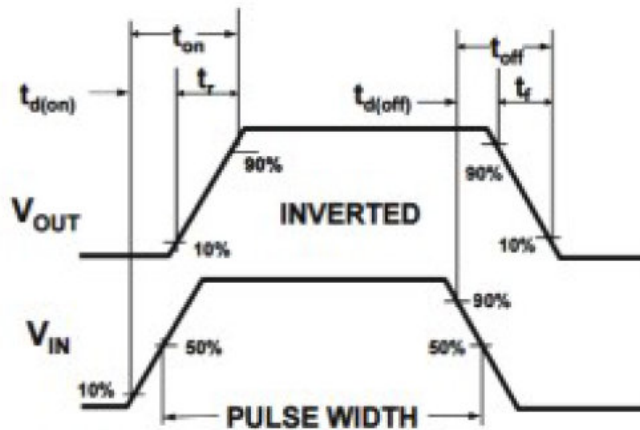
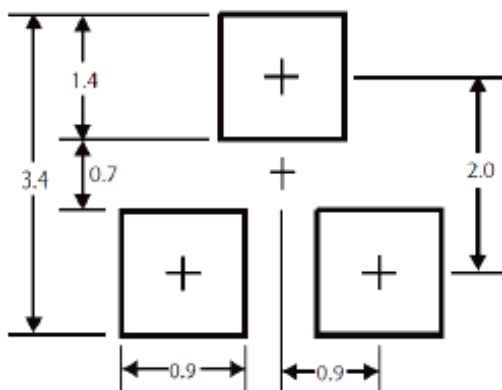


Figure8. Switching wave



\*Dimensions in millimeters

Figure12. Mounting Pad Layout