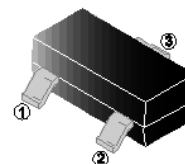


RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

### FEATURES

- Epoxy Meets UL 94 V-0 Flammability Rating
- High Density Cell Design For Low On-Resistance
- Voltage Controlled Small Signal Switch
- Rugged and Reliable
- ESD Protected

**SOT-23**



### MECHANICAL DATA

- Case: SOT-23 Package
- Terminals: Solderable per MIL-STD-750, Method 2026

### MARKING

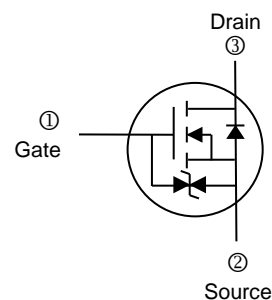
72K

### PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7' inch

### ORDER INFORMATION

Part Number	Type
SMS7K2-C	Lead (Pb)-free and Halogen-free



### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	60	V
Gate-Source Voltage	V <sub>GS</sub>	±20	
Continuous Drain Current	I <sub>D</sub>	340	mA
Maximum Power Dissipation	P <sub>D</sub>	300	mW
Thermal Resistance Junction-Ambient	R <sub>θJA</sub>	357	°C/W
Operating Junction & Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 ~ +150	°C

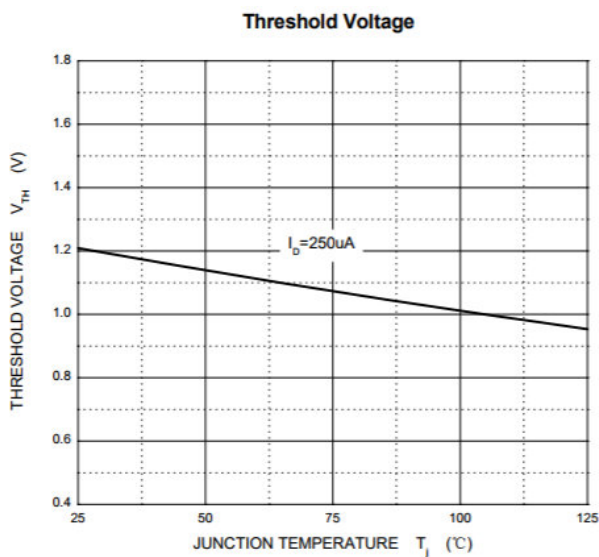
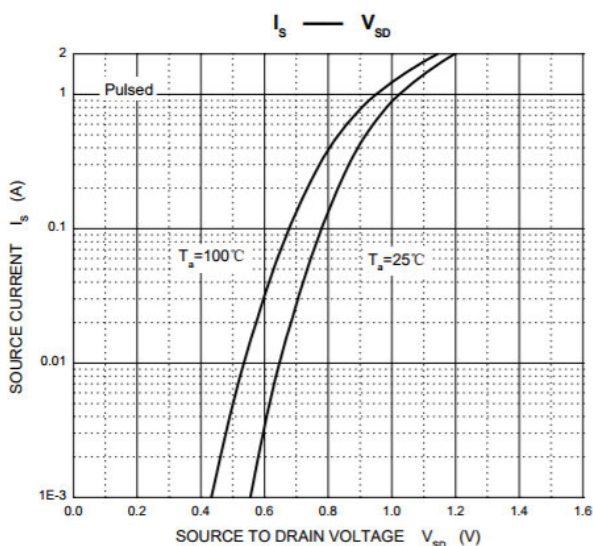
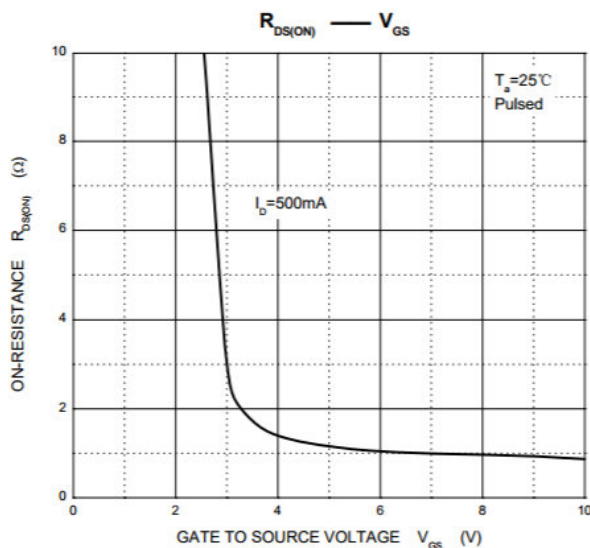
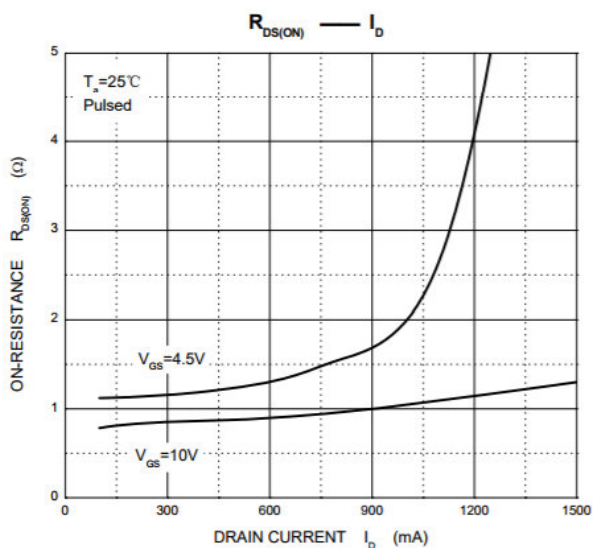
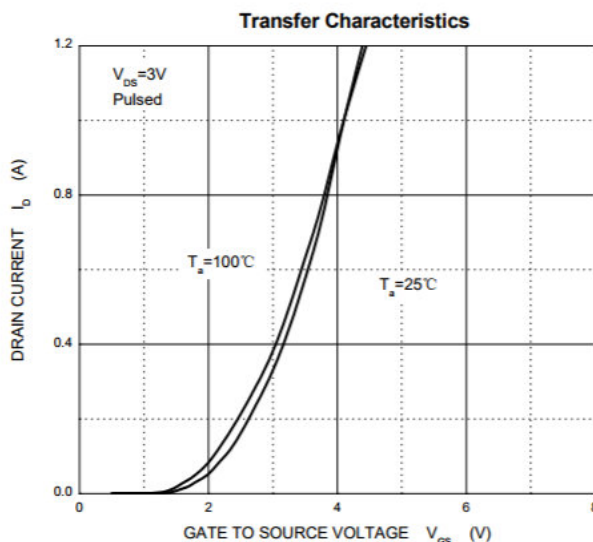
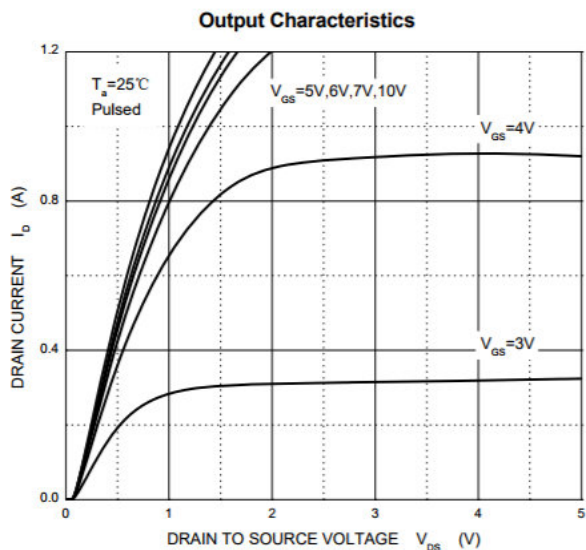
**ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	60	-	-	V	$V_{GS}=0, I_D=10\mu\text{A}$
Gate Threshold Voltage <sup>1</sup>	$V_{GS(th)}$	1	-	2.5		$V_{DS}=V_{GS}, I_D=1\text{mA}$
Zero Gate Voltage Drain Current	$I_{DSS}$	-	-	1	$\mu\text{A}$	$V_{DS}=48\text{V}, V_{GS}=0$
Gate-Body Leakage Current	$I_{GSS}$	-	-	10	$\mu\text{A}$	$V_{GS}= \pm 20\text{V}, V_{DS}=0$
		-	-	$\pm 100$	nA	$V_{GS}= \pm 5\text{V}, V_{DS}=0$
		-	-	$\pm 200$		$V_{GS}= \pm 10\text{V}, V_{DS}=0$
Drain-Source On-Resistance <sup>1</sup>	$R_{DS(ON)}$	-	-	5	$\Omega$	$V_{GS}=10\text{V}, I_D=500\text{mA}$
		-	-	5.3		$V_{GS}=4.5\text{V}, I_D=200\text{mA}$
Turn-on Time	$t_{(on)}$	-	10	-	nS	$V_{GS}=10\text{V}, V_{DD}=50\text{V}, R_G=50\Omega$ $R_{GS}=50\Omega, R_L=250\Omega$
Turn-off Time	$t_{(off)}$	-	15	-		
Input Capacitance	$C_{iss}$	-	40	-	pF	$V_{DS}=10\text{V}$ $V_{GS}=0$ $f=1\text{MHz}$
Output Capacitance	$C_{oss}$	-	30	-		
Reverse Transfer Capacitance	$C_{rss}$	-	10	-		
<b>Source-Drain Diode</b>						
Diode Forward Voltage <sup>1</sup>	$V_{SD}$	-	-	1.5	V	$V_{GS}=0, I_S=300\text{mA}$
Recovered Charge	$Q_r$	-	30	-	nC	$V_{GS}=0, I_S=300\text{mA}, V_R=25\text{V}$ $di_S/dt= -100\text{A}/\mu\text{s}$
Reverse Recovery Time	$t_{rr}$	-	30	-	nS	

Note:

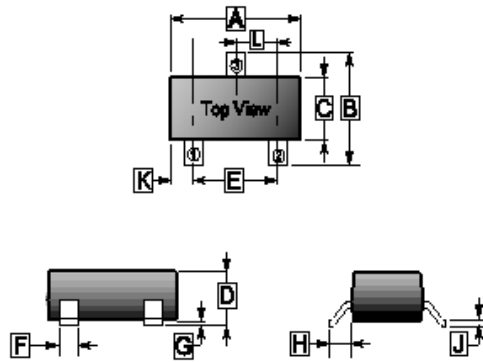
1. Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

**TYPICAL CHARACTERISTICS**



**PACKAGE OUTLINE DIMENSIONS**

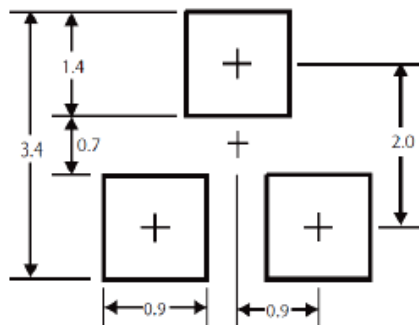
**SOT-23**



REF.	Millimeter	
	Min.	Max.
A	2.80	3.04
B	2.10	2.64
C	1.20	1.40
D	0.90	1.11
E	1.78	2.05
F	0.37	0.51
G	0.013	0.10
H	0.55 REF.	
J	0.09	0.18
K	0.45	0.60
L	0.89	1.03

**MOUNTING PAD LAYOUT**

**SOT-23**



\*Dimensions in millimeters