

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

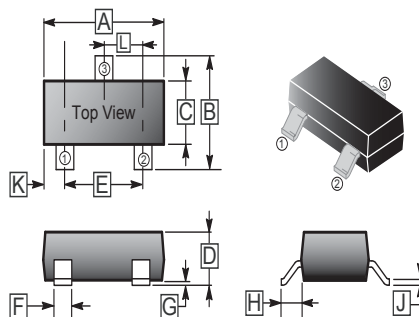
## FEATURES

- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage

## MECHANICAL DATA

- Case: SOT-23
- Case Material: Molded Plastic.  
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish Annealed over Alloy 42 leadframe)
- Terminal Connections: See Diagram
- Weight: 0.008 grams (approximate)

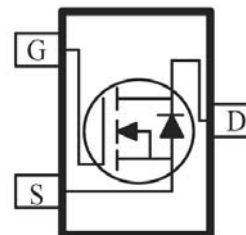
## SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.04	G	-	0.18
B	2.10	2.80	H	0.40	0.60
C	1.20	1.60	J	0.08	0.20
D	0.89	1.40	K	0.6 REF.	
E	1.78	2.04	L	0.85	1.15
F	0.30	0.50			

## MARKING

Product	Marking Code
SMS318	H03 / SS



## PACKAGE INFORMATION

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

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DSS}$	50	V
Continuous Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	220	mA
Power Dissipation	$P_D$	350	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Junction and Storage Temperature Range	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
<b>Off Characteristics</b> <sup>2</sup>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	50	-	-	V	$V_{GS} = 0, I_D = 250\mu\text{A}$
Gate-Body Leakage Current	$I_{GSS}$	-	-	$\pm 100$	nA	$V_{GS}=\pm 20\text{V}, V_{DS}=0$
Zero Gate Voltage Drain Current	$I_{DSS}$	-	-	0.5	$\mu\text{A}$	$V_{GS}=0, V_{DS}=50\text{V}$
				100	nA	$V_{GS}=0, V_{DS}=30\text{V}$
<b>On Characteristics</b> <sup>2</sup>						
Gate Threshold Voltage <sup>1</sup>	$V_{GS(th)}$	0.8	-	1.5	V	$V_{DS} = V_{GS}, I_D = 1\text{mA}$
Static Drain-Source On Resistance <sup>1</sup>	$R_{DS(ON)}$	-	-	3.5	$\Omega$	$V_{GS}=10\text{V}, I_D=0.22\text{A}$
		-	-	6		$V_{GS}=4.5\text{V}, I_D=0.22\text{A}$
Forward Transconductance <sup>1</sup>	$g_{FS}$	120	-	-	mS	$V_{DS}=10\text{V}, I_D=0.22\text{A}$
<b>Dynamic Characteristics</b> <sup>2</sup>						
Input Capacitance	$C_{iss}$	-	27	-	pF	$V_{DS}=25\text{V},$ $V_{GS}=0,$ $f=1\text{MHz}$
Output Capacitance	$C_{oss}$	-	13	-		
Reverse Transfer Capacitance	$C_{rss}$	-	6	-		
<b>Switching Characteristics</b>						
Turn-On Delay Time <sup>1,2</sup>	$t_{d(ON)}$	-	-	5	nS	$V_{DD}=30\text{V},$ $V_{DS}=10\text{V},$ $I_D=0.29\text{A},$ $R_{GEN}=6\Omega,$
Rise time <sup>1,2</sup>	$t_r$	-	-	18		
Turn-Off Delay Time <sup>1,2</sup>	$t_{d(OFF)}$	-	-	36		
Fall time <sup>1,2</sup>	$t_f$	-	-	14		
<b>Drain-source body diode characteristics</b>						
Body diode forward voltage <sup>1</sup>	$V_{SD}$	-	-	1.4	V	$V_{GS}=0, I_S=0.44\text{A}$

Notes:

1. Pulse Test ; Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .
2. These parameters have no way to verify.

**CHARACTERISTIC CURVES**

