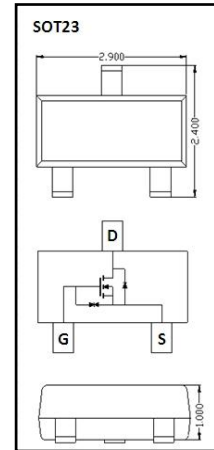
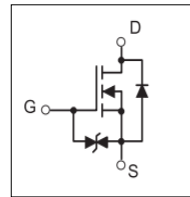


## DATA SHEET

### BSS123K

- ◇Epoxy Meets UL 94 V-0 Flammability Rating
- ◇High Density Cell Design For Low  $R_{DS(on)}$
- ◇Voltage Controlled Small Signal Switch Internal Structure
- ◇Rugged And Reliable
- ◇ESD Protected

Device Marking Code	
BSS123K	123K



#### MAXIMUM RATINGS (Ta = 25 °C)

Symbol	Parameter	Value	Units
$V_{DS}$	Drain-Source Voltage	100	V
$V_{GS}$	Gate-Source-Voltage	$\pm 20$	V
$I_D$	Drain Current- Continuous	0.17	A
Pd	Power Dissipation	0.35	W
TJ	Junction Temperature	-55 to 150	°C
$T_{STG}$	Storage Temperature	-55 to 150	°C
$R_{thJA}$	Thermal Resistance from Junction to Ambient	357	°C/W

#### ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	100			V
$V_{GS(th)}$	Gate-Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.5		2.5	V
$I_{GSS}$	Gate -Body Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 10$	$\mu A$
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=80V, V_{GS}=0V$			1	$\mu A$
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V, I_D=0.25A$ $V_{GS}=4.5V, I_D=0.2A$			6 9	$\Omega$
$V_{SD}$	Diode Forward Voltage	$V_{GS}=0V, I_S=0.4A$			1.3	V

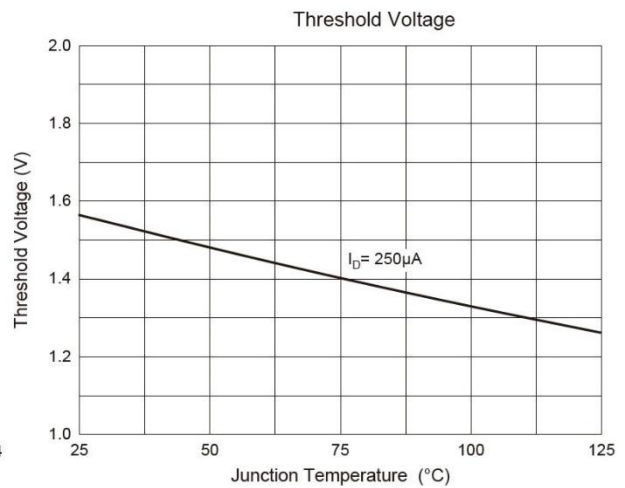
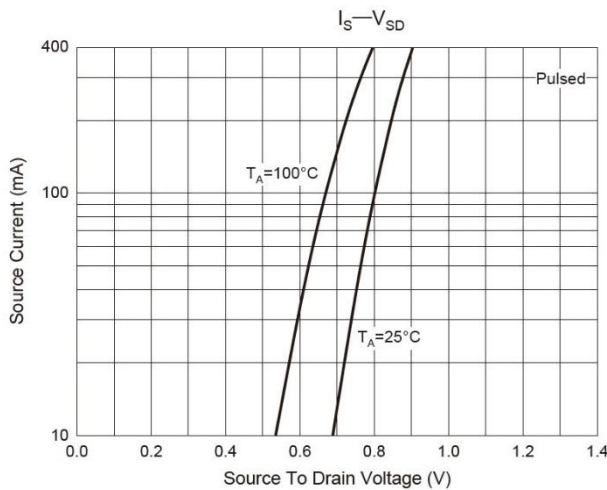
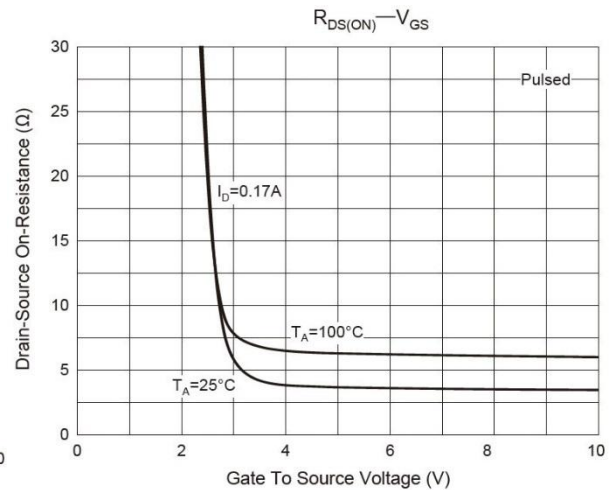
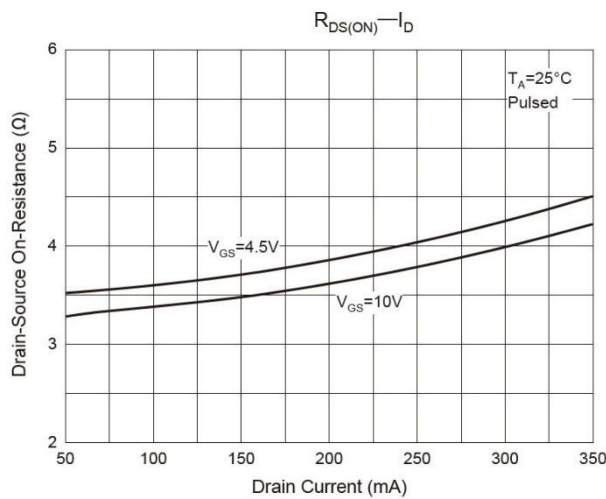
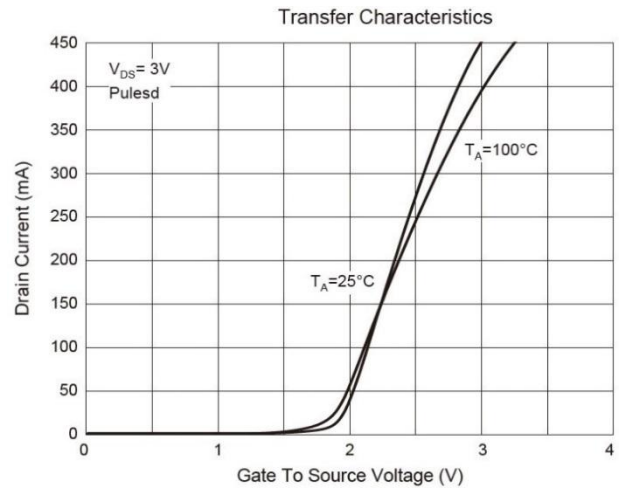
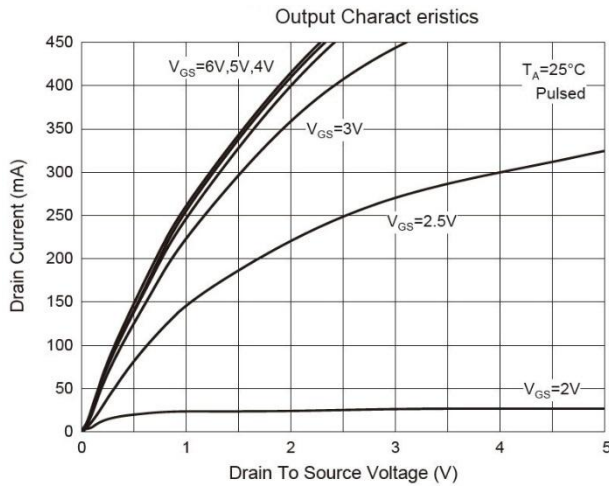
**DYNAMIC CHARACTERISTICS**

$C_{iss}$	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		60	pF
$C_{oss}$	Output Capacitance			15	
$C_{riss}$	Reverse Transfer Capacitance			6	

**SWITCHING CHARACTERISTICS**

$Q_g$	Total Gate Charge	$V_{DS}=10V, V_{GS}=10V, I_D=0.22A$			2	nC
$Q_{gs}$	Gate-Source Charge				0.25	
$Q_{gd}$	Gate-Drain Charge				0.4	
$t_{d(on)}$	Turn-On Delay Time	$V_{DD}=30V, V_{GS}=10V, R_G=50\Omega, I_D=0.28A$			8	ns
$t_r$	Turn-On Rise Time				8	
$t_{d(off)}$	Turn-Off Delay Time				13	
$t_f$	Turn-Off Fall Time				16	

Typical Characteristics

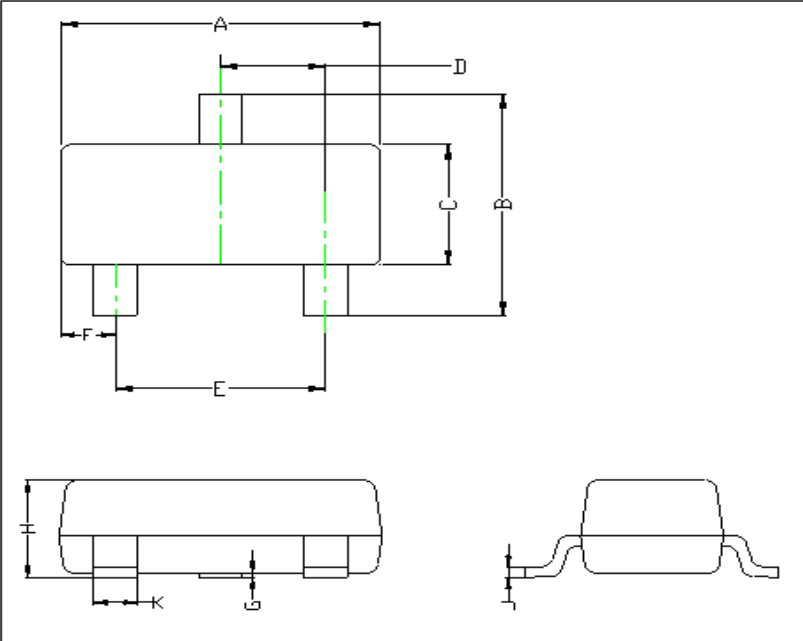


**ORDERING INFORMATION**

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
BSS123K	SOT23	Tape & Reel 3000pcs /7" Reel	8mm	4mm	Conductive	

**PACKAGE DIMENSIONS**

**Package Outline : SOT23**



The diagram shows three views of the SOT23 package: a top view with dimensions A, B, C, D, E, and F; a side view with dimensions G, H, and K; and a perspective view. Dimension A is the total width, B is the width of the main body, C is the width of the leads, D is the width of the top lead, E is the distance between the leads, and F is the lead thickness. G is the height of the package, H is the height of the leads, and K is the lead length.

Symbol	Dimensions in mm	
	Min.	Max.
A	2.800	3.040
B	2.100	2.640
C	1.200	1.400
D	0.890	1.030
E	1.780	2.050
F	0.450	0.600
G	0.013	0.100
H	0.900	1.110
J	0.090	0.180
K	0.370	0.510

**SOT23 Package Outline**

**Note:**  
 1. Halogen free ,EMC  
 2. Pb free solder  
 3. Lead thickness solder plating  
 4. Lead frame CAC-5  
 5. Other Tolerance  $\pm 0.05$   
 6. Dimensions are exclusive of Burrs Mold Flash and Tie Bar extrusions  
 7. Unit : mm

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