

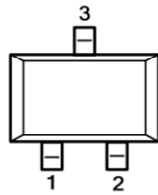
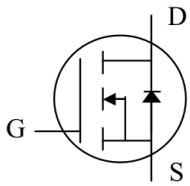
## N-Channel 100V MOSFET

### Features:

- Surface-mounted package
- Halogen free

### Application

- DC-DC
- Portable appliance
- Power management



Top View  
SOT23S-3L

$B_{VDSS} = 100V$  ,  
 $R_{DS(ON)} < 6\Omega @ V_{GS} = 10V$   
 $I_D = 0.17A$

### Absolute Maximum Ratings ( $T_A = 25^\circ C$ Unless Otherwise Noted)

Parameter	Symbol	BSS123	Unit
	Marking	SA	
Drain-Source Voltage	$V_{DSS}$	100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current <sup>(1)</sup>	$I_D$	0.17	A
Pulsed Drain Current <sup>(2)</sup>	$I_{DM}$	0.68	A
Power Dissipation(FR-5 board) <sup>(3)</sup>	$P_D$	225	mW
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	$^\circ C$

### Thermal Characteristics

Symbol	Characteristic	Max.	Units
$R_{\theta JA}$	Junction-to-Ambient	556	$^\circ C/W$

Note :

- (1) The Power dissipation of the package may result in a lower continuous drain current.
- (2) Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$
- (3) FR-5= 1.0 X 0.75 X 0.062 in

**N-Channel 100V MOSFET**
**Electrical Characteristics** ( $T_A = 25^\circ\text{C}$  Unless Otherwise Specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
<b>Static</b>						
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	100	--	--	V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=1mA$	0.8	--	2.8	V
$I_{GSS}$	Gate-Body Leakage	$V_{DS}=0V, V_{GS}=\pm 20V$	--	--	$\pm 50$	nA
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=100V, V_{GS}=0V$	--	--	15	$\mu A$
$R_{DS(ON)}$	Drain-Source On-Resistance	$V_{GS}=10V, I_D=100mA$	--	5.0	6.0	$\Omega$
$V_{SD}$	Diode Forward On-voltage	$V_{GS}=0V, I_D=0.34A$	--	--	1.3	V
$g_{FS}$	Forward Transconductance	$I_D=100mA, V_{DS}=25V$	80	--	--	mS
<b>Dynamic<sup>(4)</sup></b>						
$C_{iss}$	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	--	32	--	pF
$C_{oss}$	Output Capacitance		--	12	--	
$C_{rSS}$	Reverse Transfer Capacitance		--	7	--	
$t_{d(on)}$	Turn-On Delay Time	$V_{DS}=30V, I_D=0.28A,$ $V_{GS}=3V, R_{GS}=220\Omega$	--	20	--	ns
$t_{d(off)}$	Turn-Off Delay Time		--	10	--	

Note :

 (4) Pulse test: pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$

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TYPICAL ELECTRICAL CHARACTERISTICS

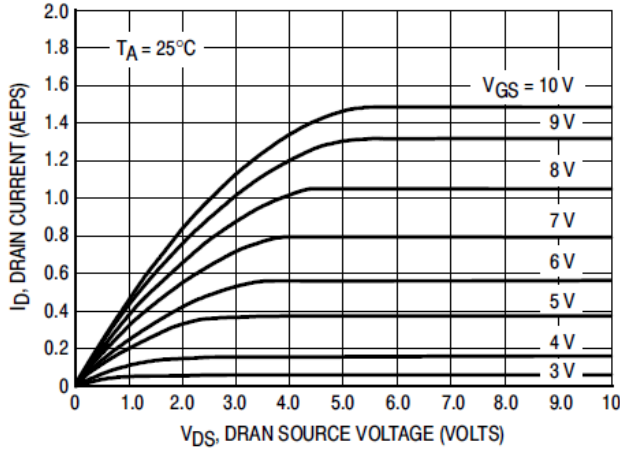


Figure 1. Ohmic Region

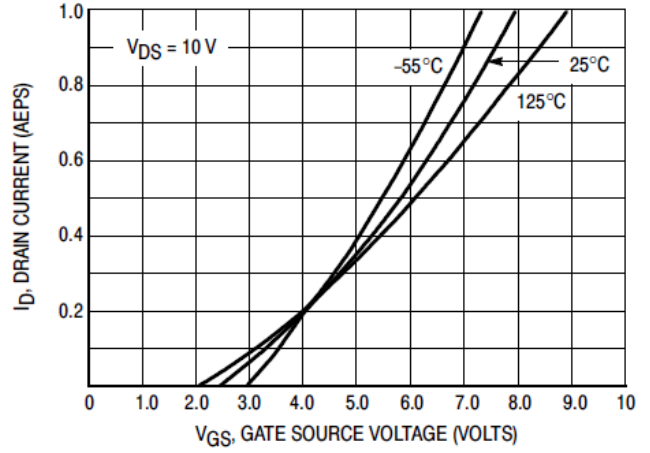


Figure 2. Transfer Characteristics

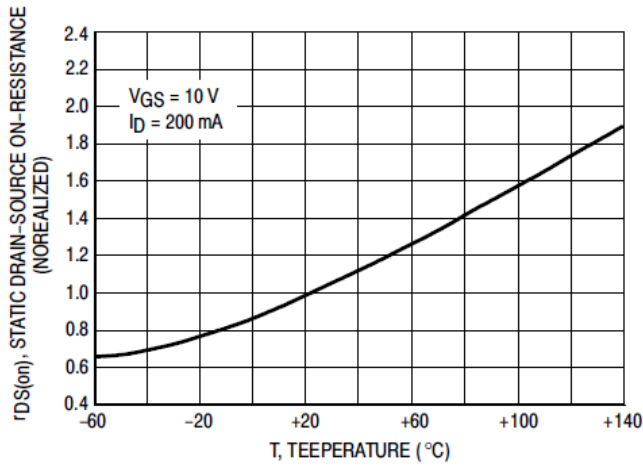


Figure 3. Temperature versus Static Drain-Source On-Resistance

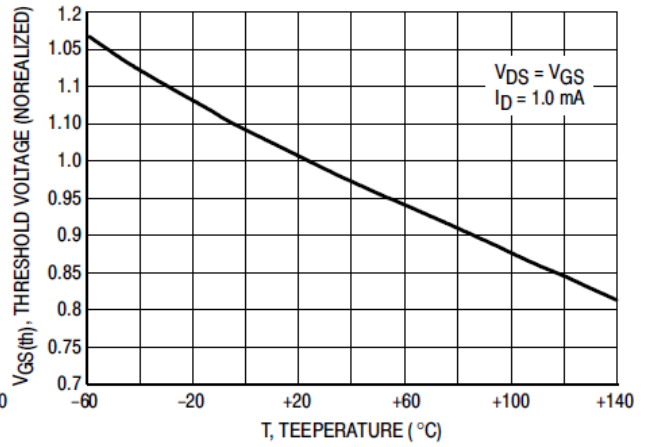
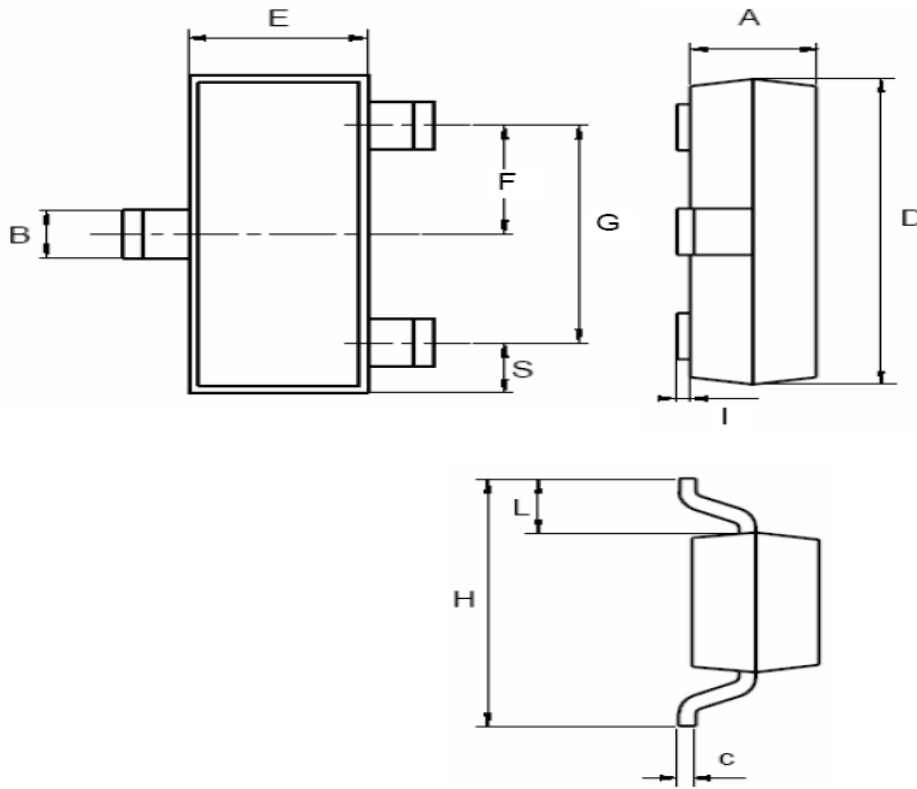


Figure 4. Temperature versus Gate Threshold Voltage

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SOT-23		
DIM.	MIN.	MAX.
A	0.89	1.40
B	0.30	0.51
C	0.085	0.18
D	2.75	3.04
E	1.20	1.60
F	0.85	1.05
G	1.70	2.10
H	2.10	2.75
I	0.0	0.1
L	0.60 typ.	
S	0.35	0.65
All Dimensions in millimeter		

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