

# SOT23 N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

**BSS123A**

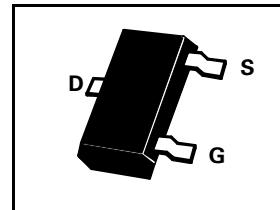
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## FEATURES

- \*  $BV_{DSS} = 100V$
- \* Low Threshold

PARTMARKING DETAIL

- SAA



## ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	$V_{DS}$	100	V
Drain-Gate Voltage	$V_{DGR}$	100	V
Continuous Drain Current at $T_{amb}=25^{\circ}\text{C}$	$I_D$	170	mA
Pulsed Drain Current	$I_{DM}$	680	mA
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Power Dissipation at $T_{amb}=25^{\circ}\text{C}$	$P_{tot}$	360	mW
Operating and Storage Temperature Range	$T_j:T_{stg}$	-55 to +150	°C

## ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	$BV_{DSS}$	100			V	$I_D=0.25\text{mA}$ , $V_{GS}=0\text{V}$
Gate-Source Threshold Voltage	$V_{GS(th)}$	0.5		2.0	V	$I_D=1\text{mA}$ , $V_{DS}=V_{GS}$
Gate-Body Leakage	$I_{GSS}$			50	nA	$V_{GS}=\pm 20\text{V}$ , $V_{DS}=0\text{V}$
Zero Gate Voltage Drain Current	$I_{DSS}$			500	nA	$V_{DS}=100\text{V}$ , $V_{GS}=0\text{V}$
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$			6 10	$\Omega$	$V_{GS}=10\text{V}$ , $I_D=170\text{mA}$ $V_{GS}=4.5\text{V}$ , $I_D=170\text{mA}$
Forward Transconductance(1)(2)	$g_{fs}$	80			mS	$V_{DS}=25\text{V}$ , $I_D=100\text{mA}$
Input Capacitance (2)	$C_{iss}$		25		pF	$V_{DS}=25\text{V}$ , $V_{GS}=0\text{V}$ , $f=1\text{MHz}$
Common Source Output Capacitance (2)	$C_{oss}$		9		pF	
Reverse Transfer Capacitance (2)	$C_{rss}$		4		pF	
Turn-On Delay Time (2)(3)	$t_{d(on)}$		10		ns	$V_{DD} \approx 30\text{V}$ , $I_D=280\text{mA}$
Rise Time (2)(3)	$t_r$		10		ns	
Turn-Off Delay Time (2)(3)	$t_{d(off)}$		15		ns	
Fall Time (2)(3)	$t_f$		25		ns	

(1) Measured under pulsed conditions. Width=300μs. Duty cycle ≤2%

(2) Sample test.

(3) Switching times measured with 50Ω source impedance and <5ns rise time on a pulse generator