

# SOT23 N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

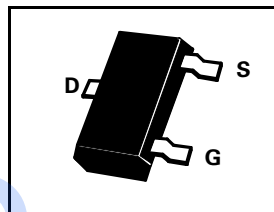
## BSS123A

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

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	$BV_{DSS}$	100			V	$I_D=0.25mA, V_{GS}=0V$
Gate-Source Threshold Voltage	$V_{GS(th)}$	0.5		2.0	V	$I_D=1mA, V_{DS}=V_{GS}$
Gate-Body Leakage	$I_{GSS}$			50	nA	$V_{GS}=\pm 20V, V_{DS}=0V$
Zero Gate Voltage Drain Current	$I_{DSS}$			500	nA	$V_{DS}=100V, V_{GS}=0V$
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$			6 10	$\Omega$ $\Omega$	$V_{GS}=10V, I_D=170mA$ $V_{GS}=4.5V, I_D=170mA$
Forward Transconductance(1)(2)	$g_{fs}$	80			mS	$V_{DS}=25V, I_D=100mA$
Input Capacitance (2)	$C_{iss}$		25		pF	$V_{DS}=25V, V_{GS}=0V, f=1MHz$
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	$V_{DD}=30V, I_D=280mA$
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=300 $\mu$ s. Duty cycle  $\leq 2\%$  (2) Sample test.

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