

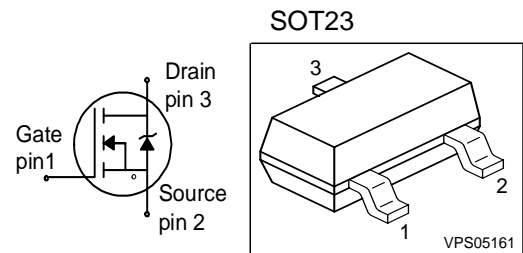
SIPMOS® Small-Signal-Transistor

Feature

- N-Channel
- Enhancement mode
- Logic Level
- dv/dt rated

Product Summary

V_{DS}	100	V
$R_{DS(on)}$	6	Ω
I_D	0.17	A



Type	Package	Ordering Code	Tape and Reel Information	Marking
BSS119	SOT23	Q67000-S007	E6327: 3000 pcs/reel	sSH

Maximum Ratings, at $T_j = 25\text{ }^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Value	Unit
Continuous drain current $T_A=25^\circ\text{C}$ $T_A=70^\circ\text{C}$	I_D	0.17 0.13	A
Pulsed drain current $T_A=25^\circ\text{C}$	$I_{D\text{ puls}}$	0.68	
Reverse diode dv/dt $I_S=0.17\text{A}$, $V_{DS}=80\text{V}$, $di/dt=200\text{A}/\mu\text{s}$, $T_{j\text{max}}=150^\circ\text{C}$	dv/dt	6	$\text{kV}/\mu\text{s}$
Gate source voltage	V_{GS}	± 20	V
Power dissipation $T_A=25^\circ\text{C}$	P_{tot}	0.36	W
Operating and storage temperature	T_j, T_{stg}	-55... +150	$^\circ\text{C}$
IEC climatic category; DIN IEC 68-1		55/150/56	

Thermal Characteristics

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Characteristics					
Thermal resistance, junction - ambient at minimal footprint	R_{thJS}	-	-	350	K/W

Electrical Characteristics, at $T_j = 25\text{ }^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Static Characteristics					
Drain-source breakdown voltage $V_{GS}=0, I_D=250\mu\text{A}$	$V_{(BR)DSS}$	100	-	-	V
Gate threshold voltage, $V_{GS} = V_{DS}$ $I_D=50\mu\text{A}$	$V_{GS(th)}$	1.3	1.8	2.3	
Zero gate voltage drain current $V_{DS}=100\text{V}, V_{GS}=0, T_j=25^\circ\text{C}$ $V_{DS}=100\text{V}, V_{GS}=0, T_j=150^\circ\text{C}$	I_{DSS}	-	0.05 0.5	0.1 5	μA
Gate-source leakage current $V_{GS}=20\text{V}, V_{DS}=0$	I_{GSS}	-	10	100	nA
Drain-source on-state resistance $V_{GS}=4.5\text{V}, I_D=0.13\text{A}$	$R_{DS(on)}$	-	4.9	10	Ω
Drain-source on-state resistance $V_{GS}=10\text{V}, I_D=0.17\text{A}$	$R_{DS(on)}$	-	3.4	6	

Electrical Characteristics, at $T_j = 25\text{ }^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Conditions	Values			Unit
			min.	typ.	max.	

Dynamic Characteristics

Transconductance	g_{fs}	$V_{DS} \geq 2 \cdot I_D \cdot R_{DS(on)max}$, $I_D = 0.13\text{A}$	0.08	0.17	-	S
Input capacitance	C_{iss}	$V_{GS} = 0$, $V_{DS} = 25\text{V}$, $f = 1\text{MHz}$	-	60	78	pF
Output capacitance	C_{oss}		-	8.6	11.2	
Reverse transfer capacitance	C_{rss}		-	3.1	4.1	
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 50\text{V}$, $V_{GS} = 10\text{V}$, $I_D = 0.17\text{A}$, $R_G = 6\Omega$	-	2.7	4	ns
Rise time	t_r		-	3.1	4.6	
Turn-off delay time	$t_{d(off)}$		-	9.3	14	
Fall time	t_f		-	27	40	

Gate Charge Characteristics

Gate to source charge	Q_{gs}	$V_{DD} = 80\text{V}$, $I_D = 0.17\text{A}$	-	0.08	0.12	nC
Gate to drain charge	Q_{gd}		-	0.76	1.1	
Gate charge total	Q_g	$V_{DD} = 80\text{V}$, $I_D = 0.17\text{A}$, $V_{GS} = 0$ to 10V	-	1.67	2.5	
Gate plateau voltage	$V_{(plateau)}$	$V_{DD} = 80\text{V}$, $I_D = 0.17\text{A}$	-	3.4	-	V

Reverse Diode

Inverse diode continuous forward current	I_S	$T_A = 25\text{ }^\circ\text{C}$	-	-	0.17	A
Inv. diode direct current, pulsed	I_{SM}		-	-	0.68	
Inverse diode forward voltage	V_{SD}	$V_{GS} = 0$, $I_F = I_S$	-	0.8	1.2	V
Reverse recovery time	t_{rr}	$V_R = 50\text{V}$, $I_F = I_S$, $di_F/dt = 100\text{A}/\mu\text{s}$	-	21.7	32.5	ns
Reverse recovery charge	Q_{rr}		-	10	15	