

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

BSS127-G1-MS

Product specification

Features

- Trench Power LV MOSFET technology
- High Density Cell Design for Low $R_{DS(ON)}$
- High Speed switching

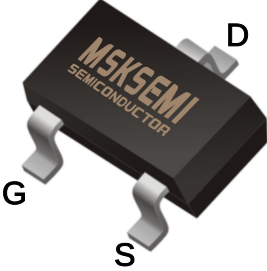
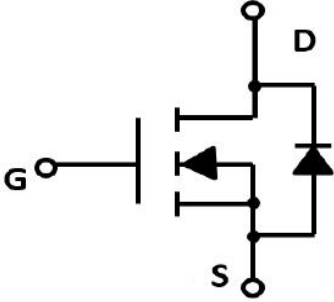
Application

- Battery protection
- Load switch
- Power management

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_b
600V	310 Ω @10V	0.021A
	330 Ω @4.5V	

Reference News

SOT-23	SCHEMATIC DIAGRAM	MARKING
		

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{DS}	Drain-Source Breakdown Voltage		600	V
V _{GS}	Gate-Source Voltage		±20	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	°C
I _S	Diode Continuous Forward Current	Tc=25°C	0.021	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	0.09	A
I _D	Continuous Drain Current	Tc=25°C	0.021	A
P _D	Maximum Power Dissipation	Tc=25°C	0.5	W
R _{θJA}	Thermal Resistance Junction-Ambient		135	°C/W

Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
BV(BR)DSS	Drain-Source Breakdown Voltage	VGS=0V, ID=250μA	600	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=600V, VGS=0V	--	--	0.1	μA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=8μA	1.4	--	2.6	V
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=16mA	--	310	500	Ω
		VGS=4.5V, ID=16mA	--	330	600	Ω
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=25V, VGS=0V, f=1MHz	--	21	--	pF
COSS	Output Capacitance		--	2.4	--	pF
CRSS	Reverse Transfer Capacitance		--	1	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDD=300V, ID=0.01A, VGS=0 to 10V	--	0.07	--	nC
Qgs	Gate Source Charge		--	0.31	--	nC
Qgd	Gate Drain Charge		--	0.65	--	nC
td(on)	Turn-on Delay Time	VDD=300V, ID=0.01A, VGS=10V, RG=6Ω	--	6.1	--	nS
tr	Turn-on Rise Time		--	9.7	--	nS
td(off)	Turn-Off Delay Time		--	14	--	nS
tf	Turn-Off Fall Time		--	114	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	Tj=25°C, Is=0.016A	--	--	1.2	V

Typical Operating Characteristics

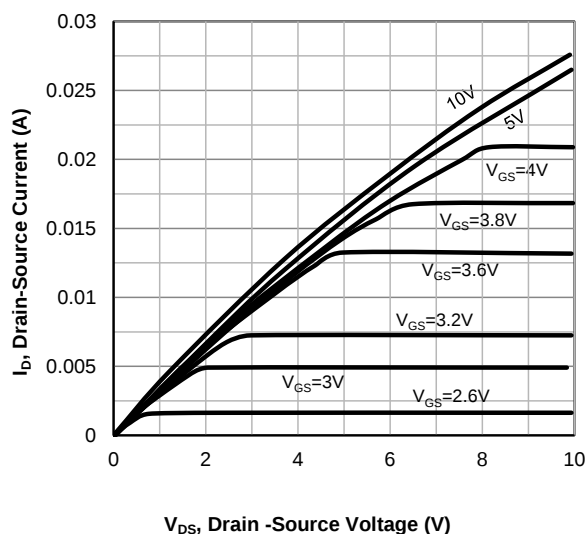


Fig1. Typical Output Characteristics

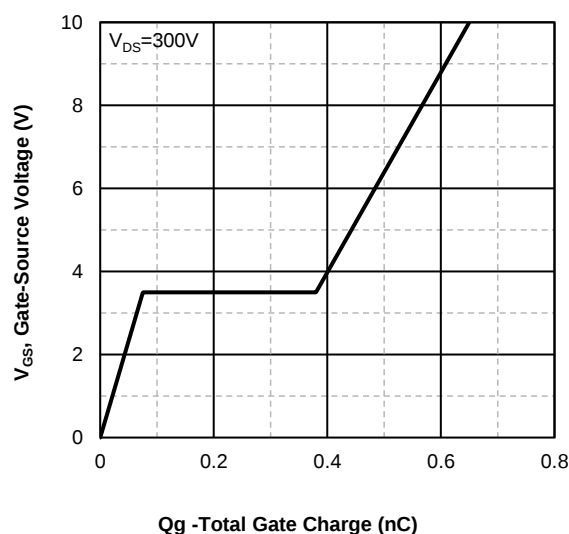


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

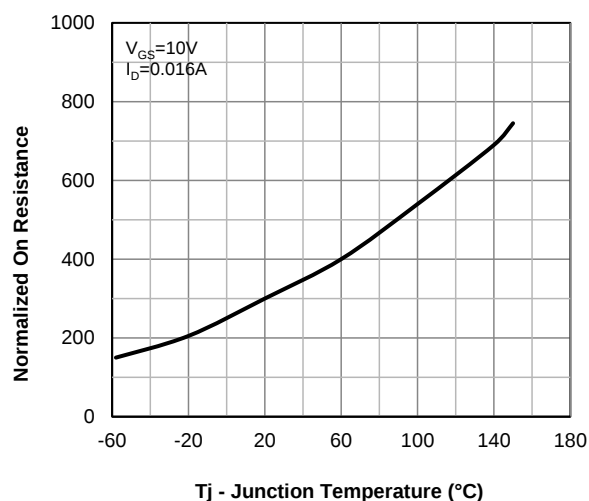


Fig3. Normalized On-Resistance Vs. Temperature

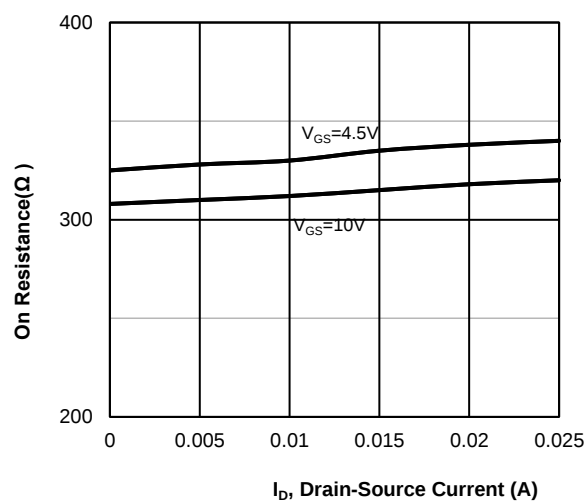


Fig4. On-Resistance Vs. Drain-Source Current

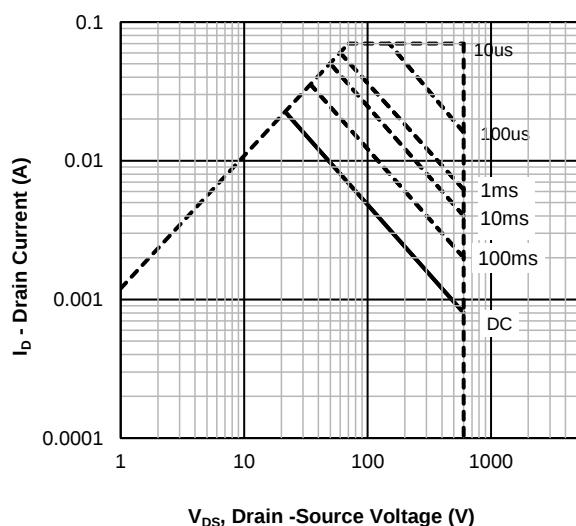


Fig5. Maximum Safe Operating Area

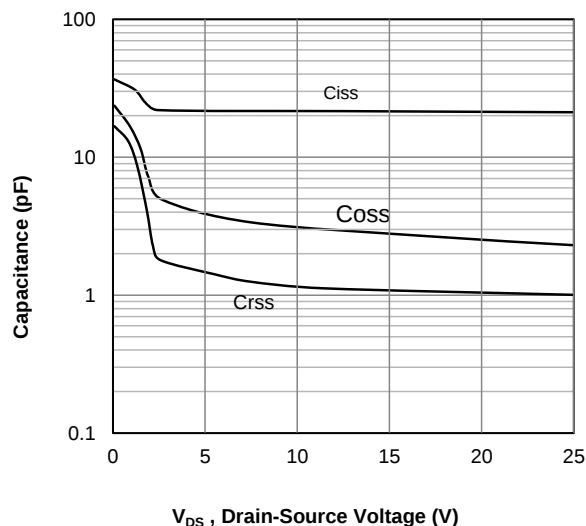
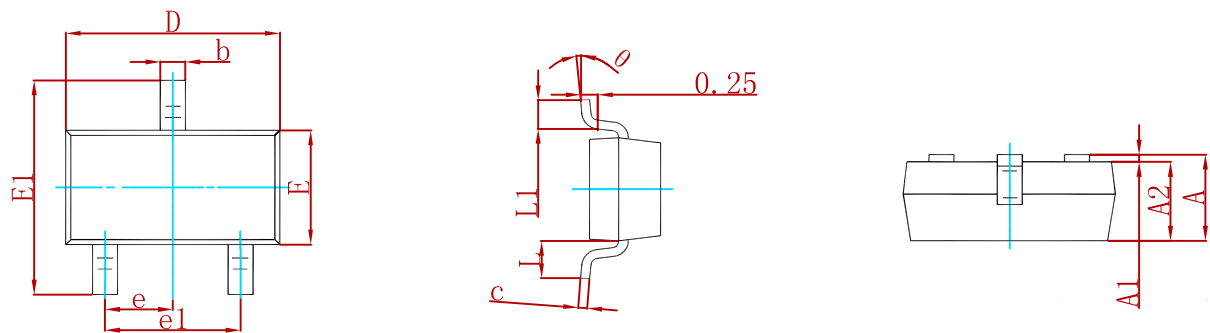


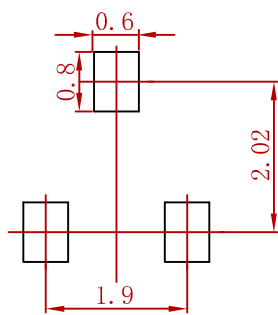
Fig6 Typical Capacitance Vs. Drain-Source Voltage

PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
BSS127-G1-MS	SOT-23	3000

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