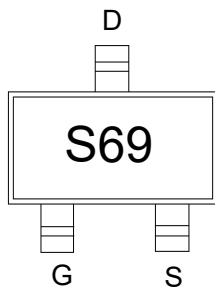


**Features**

- Green Device Available
- Super Low Gate Charge
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology

**Application**

- Battery protection
- Load switch
- Power management

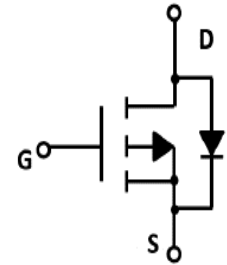
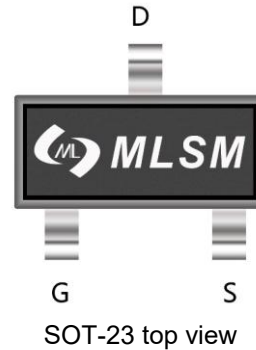


S69: Device code

Marking and pin assignment

**Product Summary**

$V_{DS}$	$R_{DS(ON)}$ MAX	$I_D$ MAX
-30V	27m $\Omega$ @-10V	-7.5A
	39m $\Omega$ @-4.5V	



Schematic diagram



Pb-Free



Halogen-Free

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

Symbol	Parameter	Rating	Unit
<b>Common Ratings (TC=25°C Unless Otherwise Noted)</b>			
$V_{DS}$	Drain-Source Breakdown Voltage	-30	V
$V_{GS}$	Gate-Source Voltage	-20/+16	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 -2.1	A
<b>Mounted on Large Heat Sink</b>			
$I_{DM}$	Pulse Drain Current Tested	Tc=25°C -50	A
$I_D$	Continuous Drain Current	Tc=25°C -7.5	A
$P_D$	Maximum Power Dissipation	Tc=25°C 2.5	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	100	°C/W

**Ordering Information (Example)**

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
Si2369BDS	SOT-23	S69	3,000	45,000	180,000	7"reel

Electrical Characteristics (T <sub>J</sub> =25°C unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
<b>Static Electrical Characteristics @ T<sub>J</sub> = 25°C (unless otherwise stated)</b>						
BV <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA	-30	--	--	V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V	--	--	-1	μA
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>GS</sub> =-20V/+16V, V <sub>DS</sub> =0V	--	--	±100	nA
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	-1.0	--	-2.2	V
R <sub>DS(on)</sub>	Drain-Source On-State Resistance	V <sub>GS</sub> =-10V, I <sub>D</sub> =-5A	--	22.5	27.0	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-3A	--	32.5	39.0	mΩ
<b>Dynamic Electrical Characteristics @ T<sub>J</sub> = 25°C (unless otherwise stated)</b>						
C <sub>ISS</sub>	Input Capacitance	V <sub>DS</sub> =-15V, V <sub>GS</sub> =0V, f=1MHz	--	745	--	pF
C <sub>OSS</sub>	Output Capacitance		--	340	--	pF
C <sub>RSS</sub>	Reverse Transfer Capacitance		--	40	--	pF
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =-15V, I <sub>D</sub> =-5.6A, V <sub>GS</sub> =-4.5V	--	6.2	--	nC
Q <sub>gs</sub>	Gate Source Charge		--	2.7	--	nC
Q <sub>gd</sub>	Gate Drain Charge		--	2	--	nC
<b>Switching Characteristics</b>						
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>DS</sub> =-15V, R <sub>L</sub> =3.4Ω, I <sub>D</sub> =-4.4A, V <sub>GS</sub> =-10V, R <sub>G</sub> =1Ω	--	12	--	nS
t <sub>r</sub>	Turn-on Rise Time		--	6	--	nS
t <sub>d(off)</sub>	Turn-Off Delay Time		--	40	--	nS
t <sub>f</sub>	Turn-Off Fall Time		--	22	--	nS
<b>Source- Drain Diode Characteristics</b>						
V <sub>SD</sub>	Forward on voltage	T <sub>J</sub> =25°C, I <sub>S</sub> =-4.4A	--	-0.8	-1.2	V

**Typical Operating Characteristics**

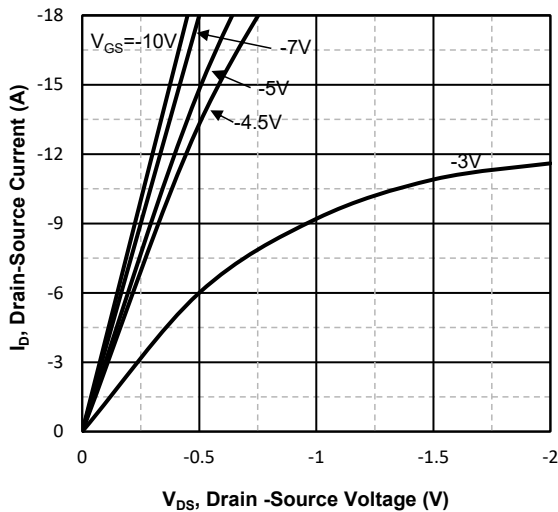


Fig1. Typical Output Characteristics

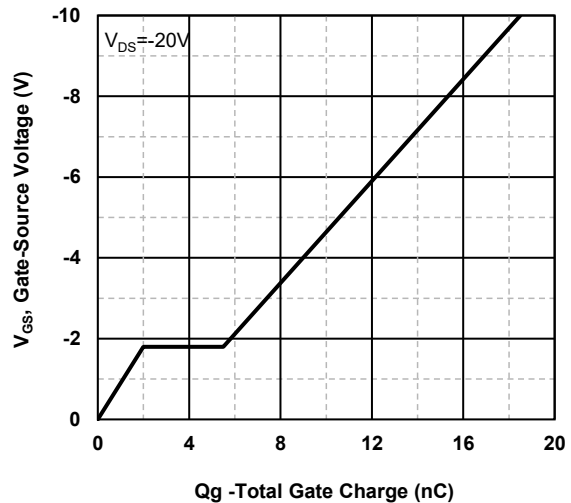


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

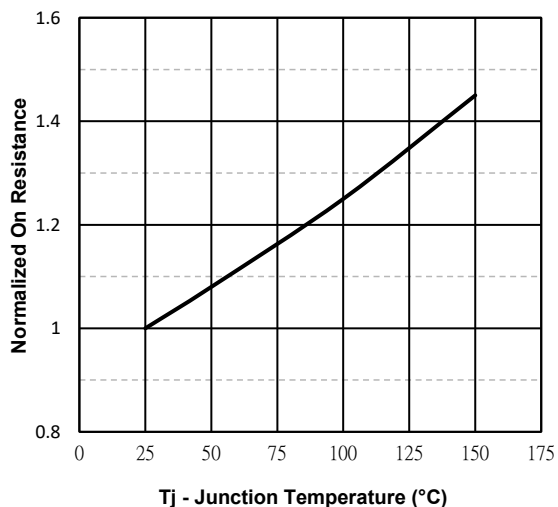


Fig3. Normalized On-Resistance Vs. Temperature

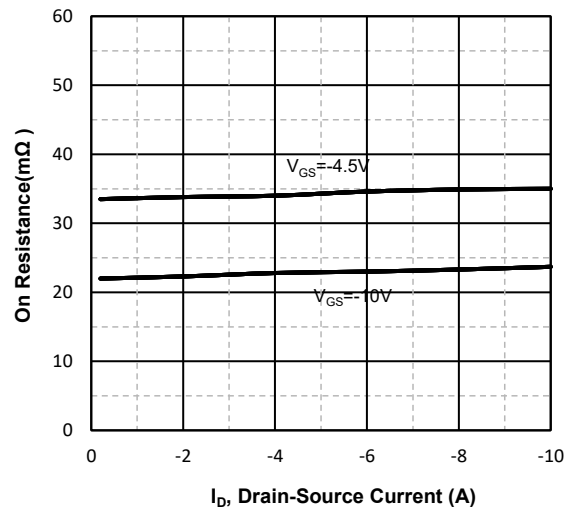


Fig4. On-Resistance Vs. Drain-Source Current

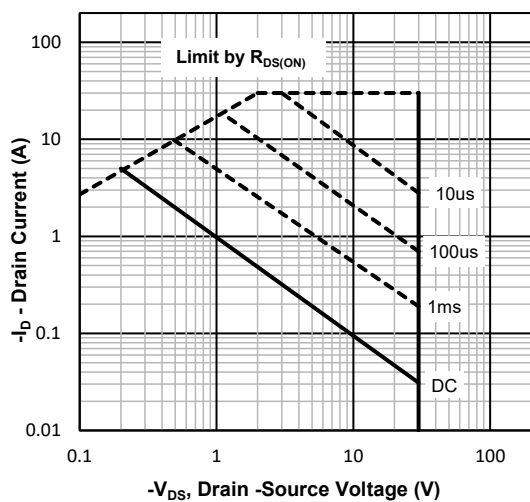


Fig5. Maximum Safe Operating Area

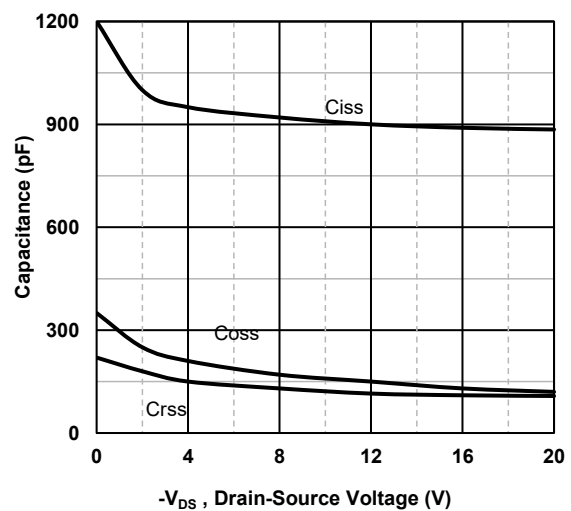
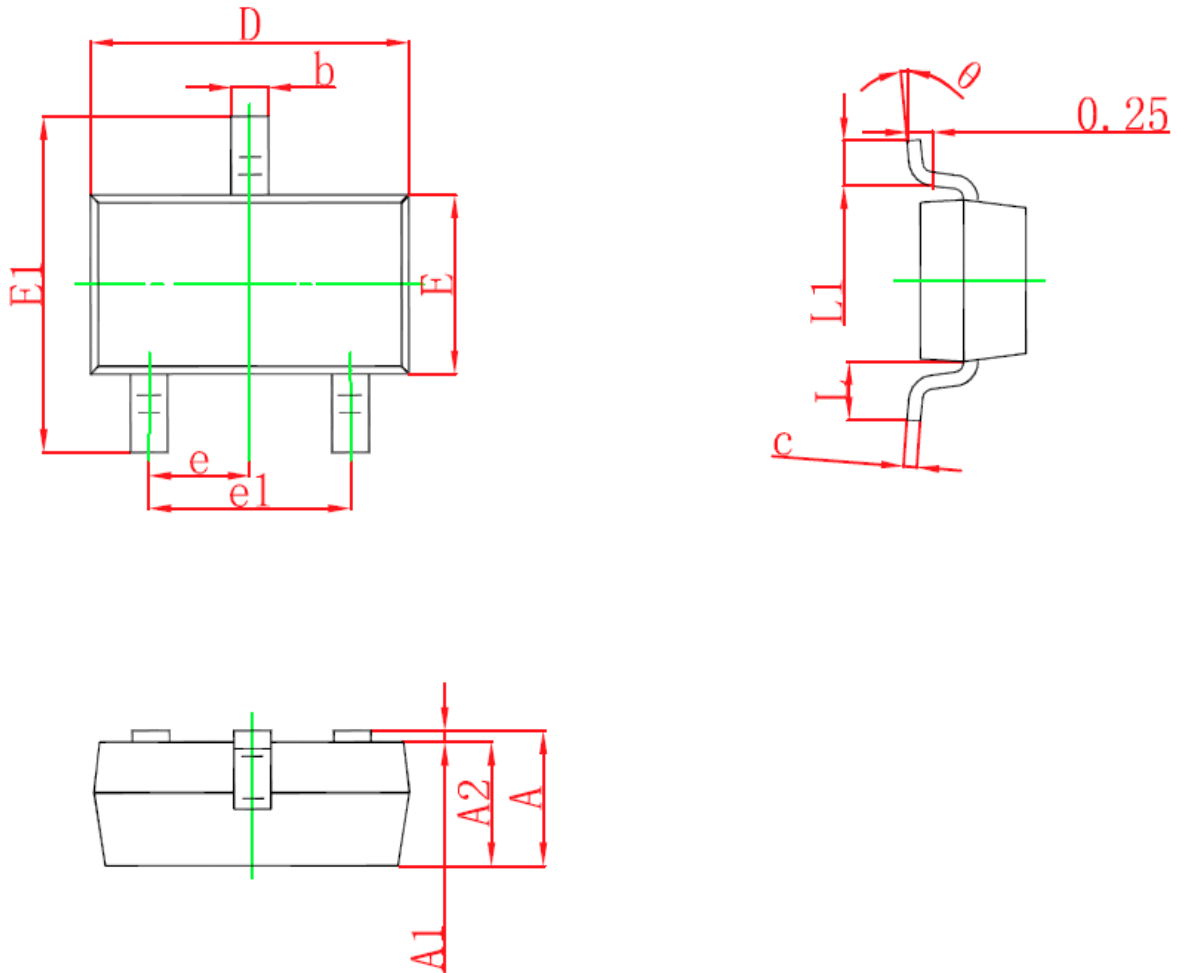


Fig6 Typical Capacitance Vs. Drain-Source

**SOT-23 Package information**


Symbol	Dimensions in Millimeters(mm)		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
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
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°