

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	$2\Omega@10V$	0.22A
	$2.5\Omega@4.5V$	


合肥矽普半导体

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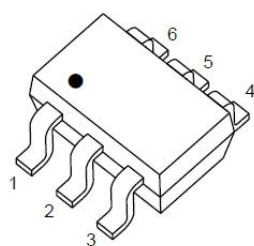
Feature

- High power and current handing capability
- Surface mount package
- ESD protected 2KV

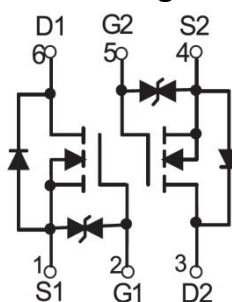
Application

- Battery Switch
- DC/DC Converter

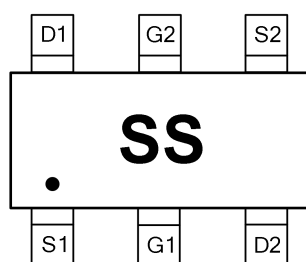
Package:


SOT-363

Circuit diagram



Marking


SS
:Device Code

Order Information

Device	Package	Unit/Tape
BSS138KDW	SOT-363	3000

**Absolute maximum ratings (Ta=25°C unless otherwise noted)**

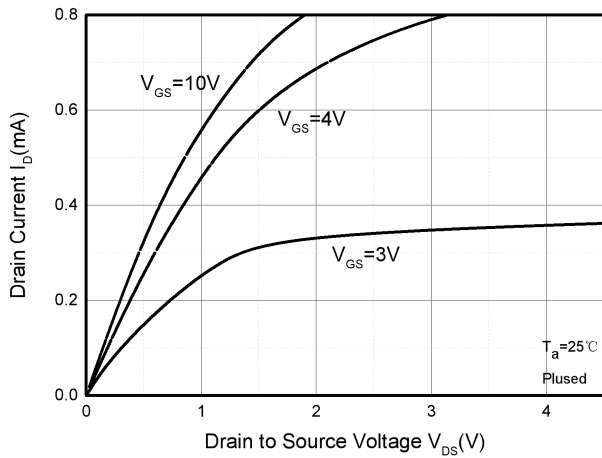
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	0.22	A
Pulse Drain Current Tested	I_D	0.88	A
Power Dissipation	P_D	0.15	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	833	$^{\circ}\text{C/W}$
Storage Temperature Range	T_J	-55 to 150	$^{\circ}\text{C}$
Operating Junction Temperature Range	T_{STG}	-55 to 150	$^{\circ}\text{C}$

Electrical characteristics (T_A=25 °C, unless otherwise noted)

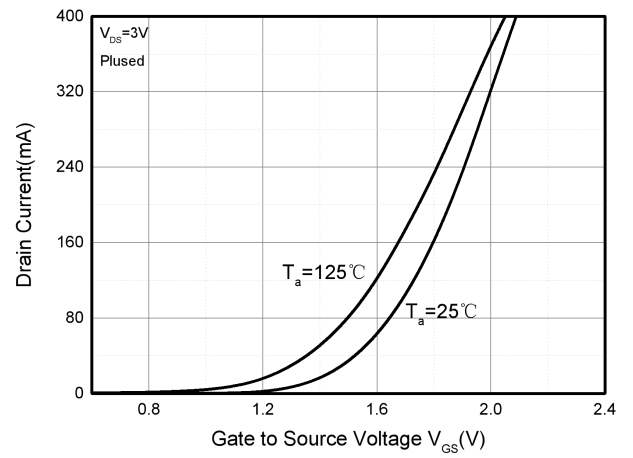
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	60	-	-	V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =48V,V _{GS} = 0V	-	-	1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V	-	-	±10	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	0.7	1	1.45	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =0.2A	-	2	5	Ω
		V _{GS} =4.5V, I _D =0.2A	-	2.5	8	
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =25V , V _{GS} =0V , f=1MHz	-	27	-	pF
Output Capacitance	C _{oss}		-	13	-	
Reverse Transfer Capacitance	C _{rss}		-	6	-	
Total Gate Charge	Q _g	V _{DS} =10V , V _{GS} =15V , I _D =1A	-	1.34	-	nC
Gate-Source Charge	Q _{gs}		-	0.29	-	
Gate-Drain Charge	Q _{gd}		-	0.2	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{DD} =30V , I _D =0.29A , V _{GS} =10V , R _G =6Ω	-	5	-	nS
Turn-On Rise Time	t _r		-	18	-	
Turn-Off Delay Time	t _{d(off)}		-	36	-	
Turn-Off Fall Time	t _f		-	14	-	
Source-Drain Diode characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V , I _S =1A , T _J =25℃	-	-	1.2	V



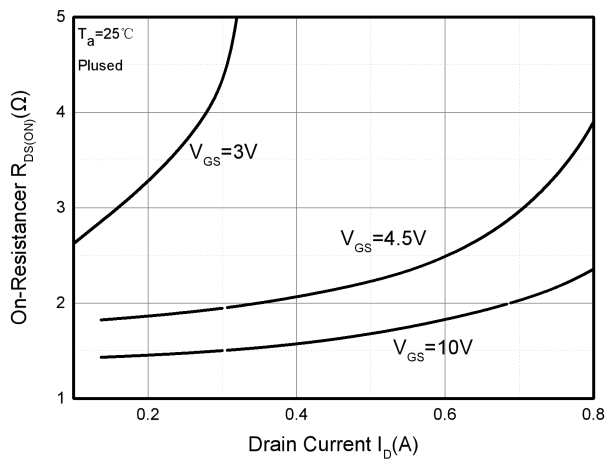
Typical Characteristics



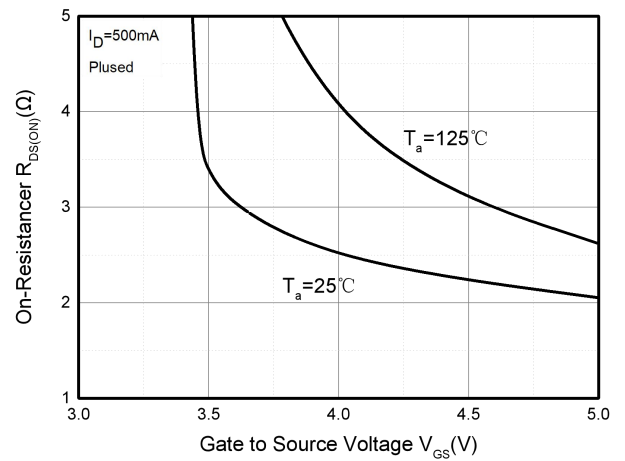
Output Characteristics



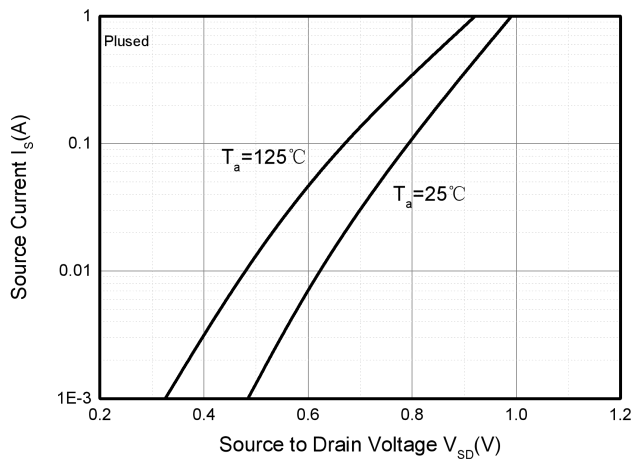
Transfer Characteristics



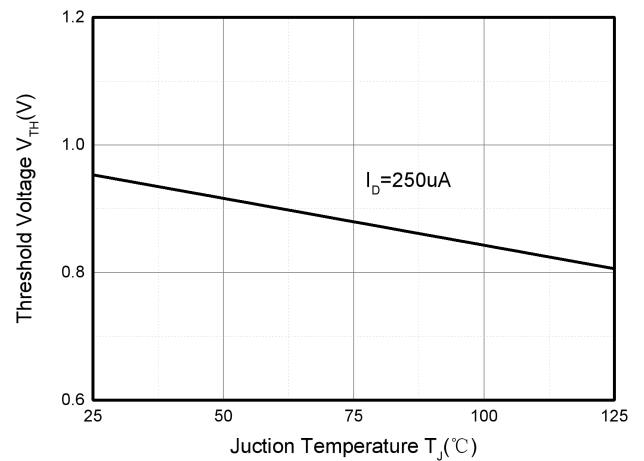
RDS(ON)—ID



RDS(ON)—VGS



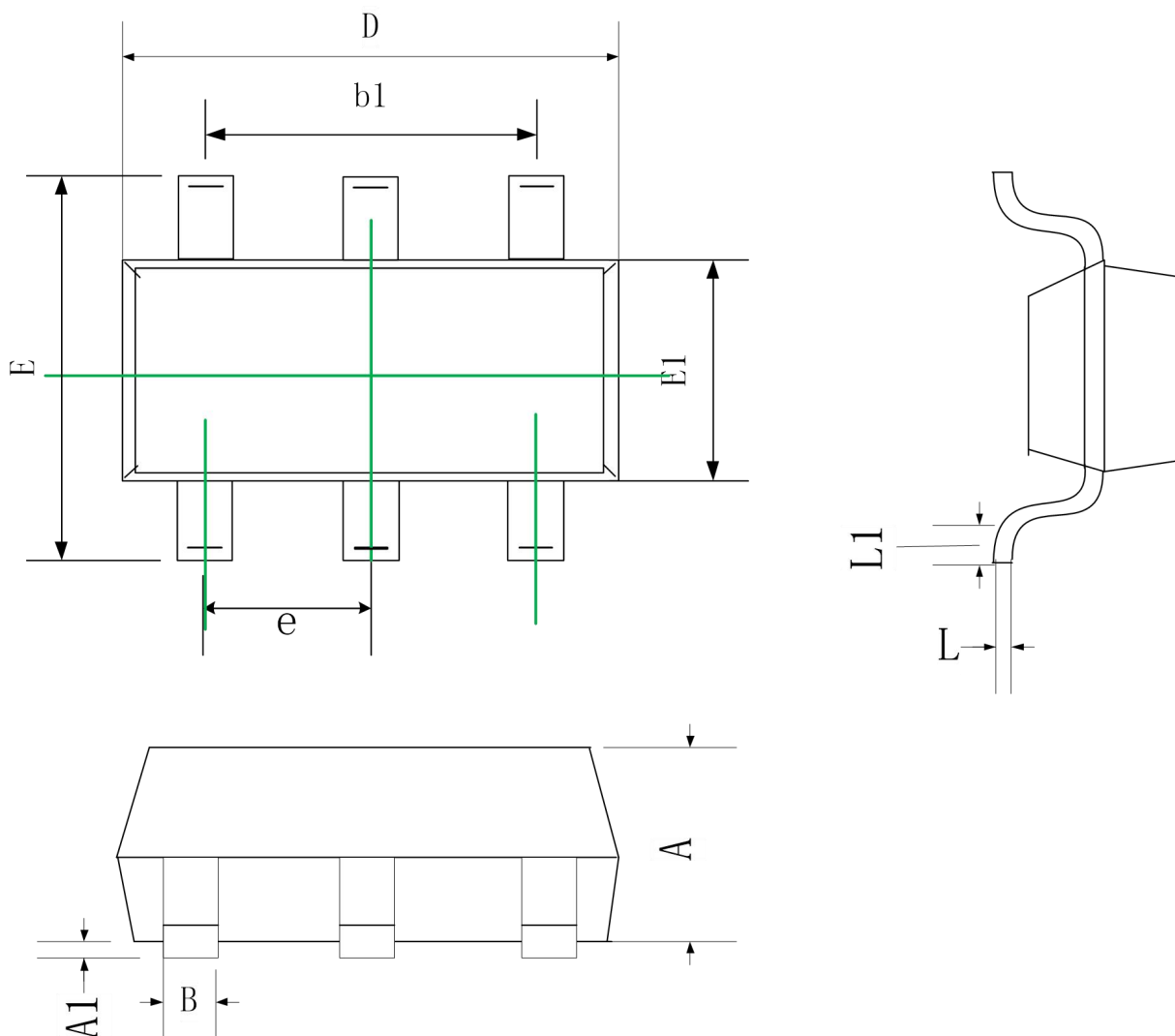
IS—VSD



Threshold Voltage



SOT-363 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.00
A1	0.00	0.10
B	0.10	0.30
b1	1.30	
D	1.80	2.20
E	2.00	2.20
E1	1.15	1.35
e	0.65 TYP.	
L	0.10	0.25
L1	0.15	0.4