Siliup Semiconductor

合肥矽普半导体
Siliup Semiconductor Technology Co.Ltd
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Product Summary

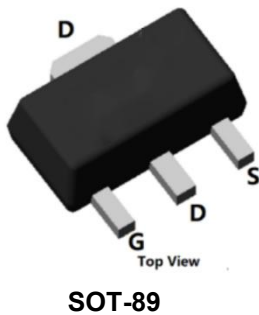| $V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	90mΩ@10V	5A
	100mΩ@4.5V	

Feature

- High power and current handing capability
- Surface mount package
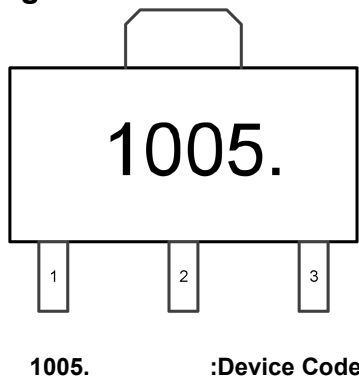
Application

- Battery Switch
- DC/DC Converter

Package

SOT-89

Circuit diagram

Marking

1005.　　　　**:Device Code**
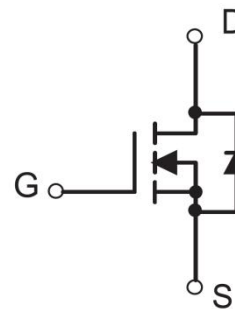
Order Information

Device	Package	Unit/Tape
SP010N90T8	SOT-89	1000

Absolute maximum ratings (Ta=25℃, unless otherwise noted)

| Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	100	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current	I_D	5	A
Pulse Drain Current Tested	I_{DM}	20	A
Power Dissipation	P_D	1.5	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	83	°C/W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

Electrical characteristics (Ta=25℃, unless otherwise noted)

| Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	VGS=0V , ID=250μA	100	-	-	V
Drain-Source Leakage Current	I_{DSS}	VDS=80V , VGS=0V	-	-	1	uA
Gate-Source Leakage Current	I_{GSS}	VGS=±20V , VDS=0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	VDS=VGS , ID=250μA	1.0	1.5	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	VGS=10V, ID=5A	-	90	130	mΩ
		VGS=4.5V, ID=3A	-	100	140	
Dynamic characteristics						
Input Capacitance	C_{iss}	VDS=50V , VGS=0V , f=1MHz	-	790	-	pF
Output Capacitance	C_{oss}		-	38	-	
Reverse Transfer Capacitance	C_{rss}		-	30	-	
Total Gate Charge	Q_g	VDS=50V , VGS=10V , ID=3A	-	16	-	nC
Gate-Source Charge	Q_{gs}		-	2.5	-	
Gate-Drain Charge	Q_{gd}		-	2.6	-	
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	VDD=50V VGS=10V , RG=3Ω, ID=5A	-	5	-	nS
Turn-On Rise Time	t_r		-	40	-	
Turn-Off Delay Time	$t_{d(off)}$		-	20	-	
Turn-Off Fall Time	t_f		-	7	-	
Source-Drain Diode characteristics						
Diode Forward Voltage	V_{SD}	VGS=0V , IS=1A , TJ=25℃	-	-	1.2	V

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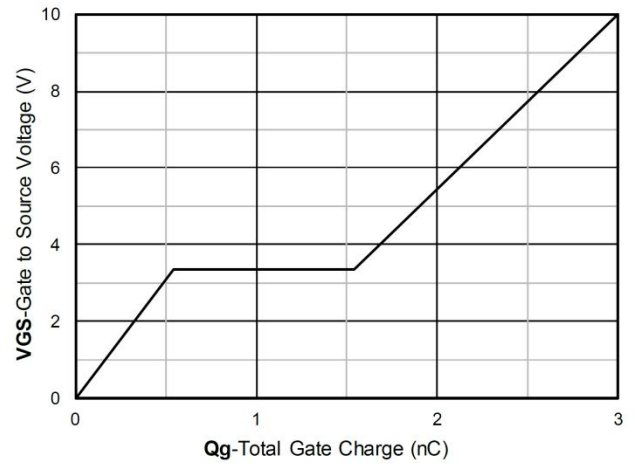**Siliup Semiconductor**

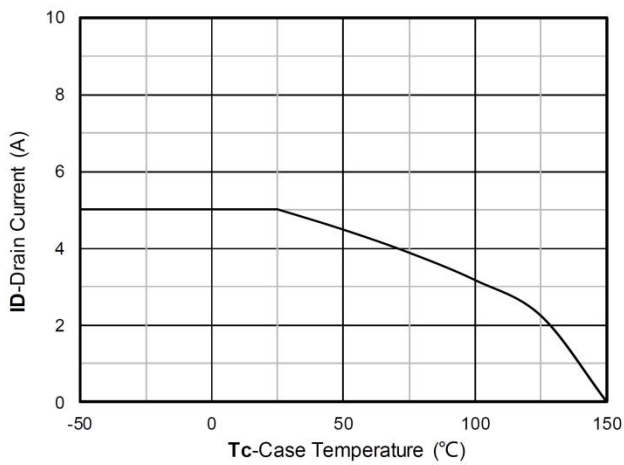## Typical Characteristics
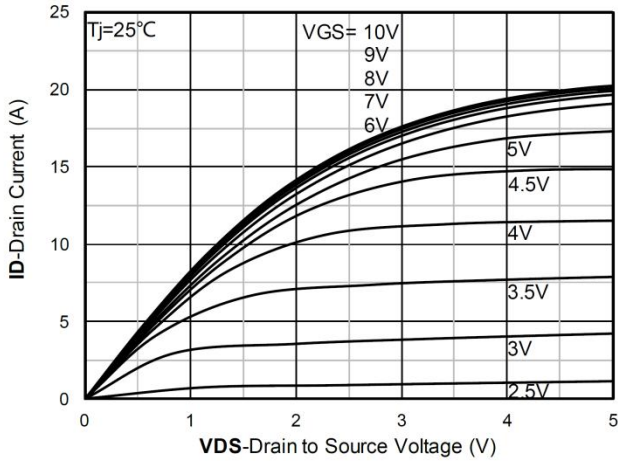
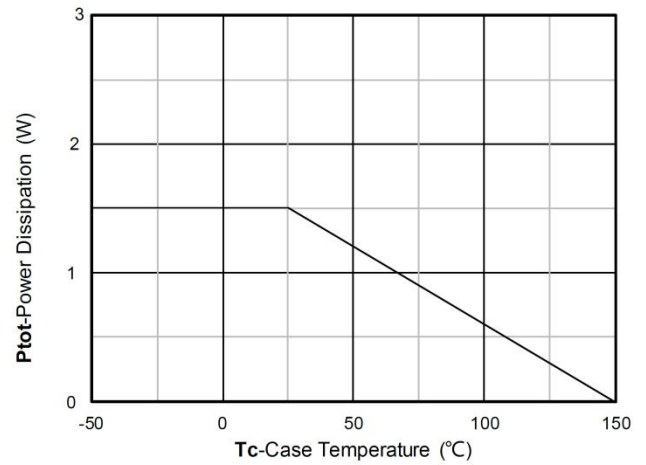Output Characteristics
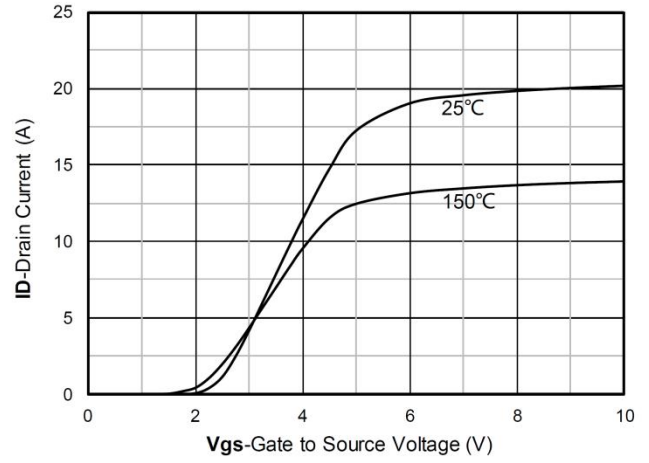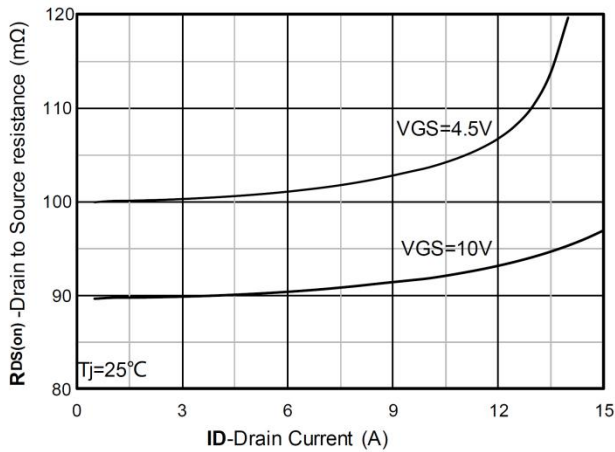

Transfer Characteristics
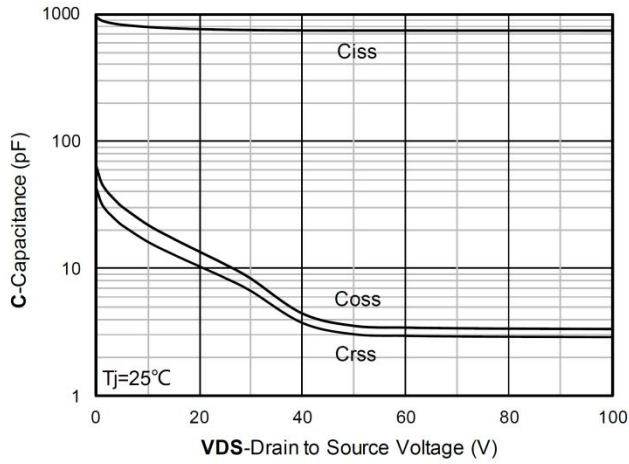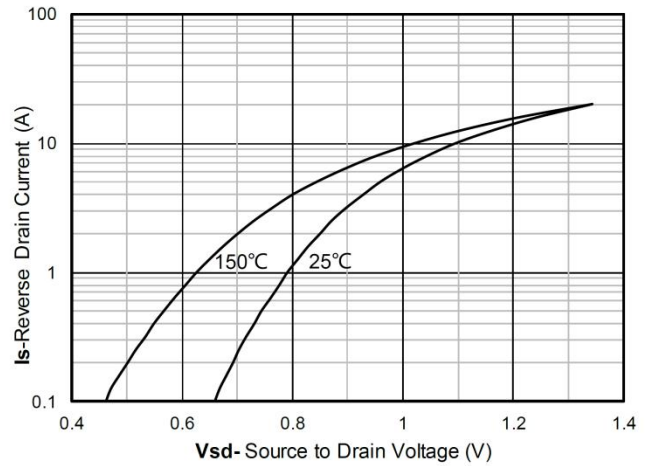

Capacitance Characteristics
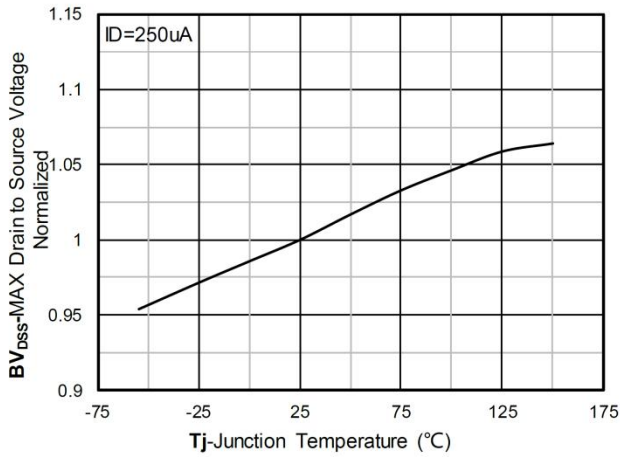

Gate Charge

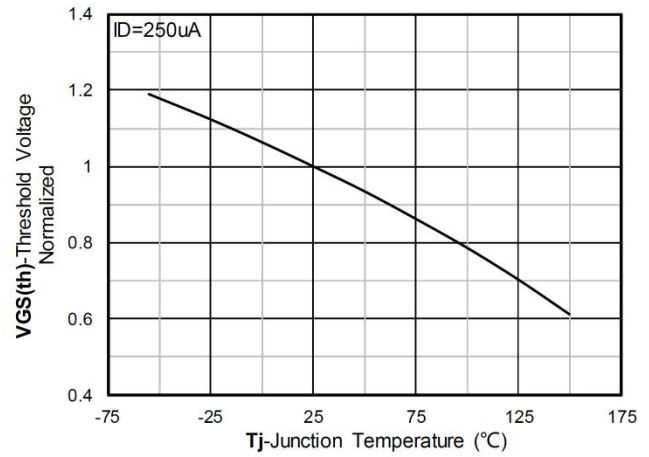
Current dissipation

Power dissipation
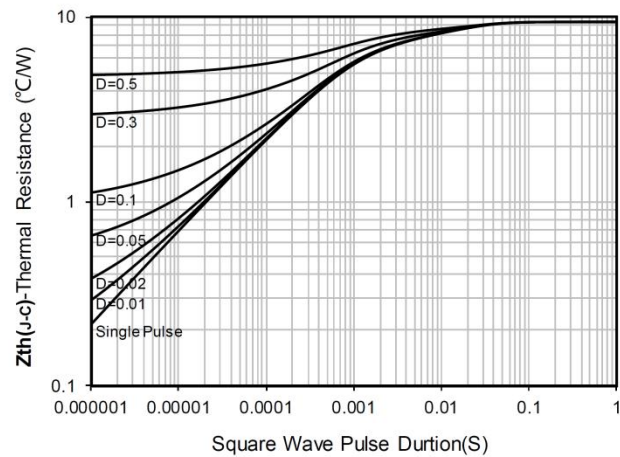
R_DS(on) VS Drain Current

Forward characteristics of reverse diode
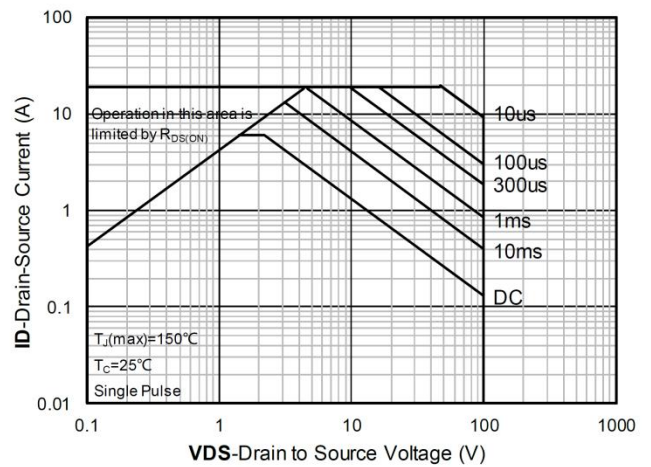

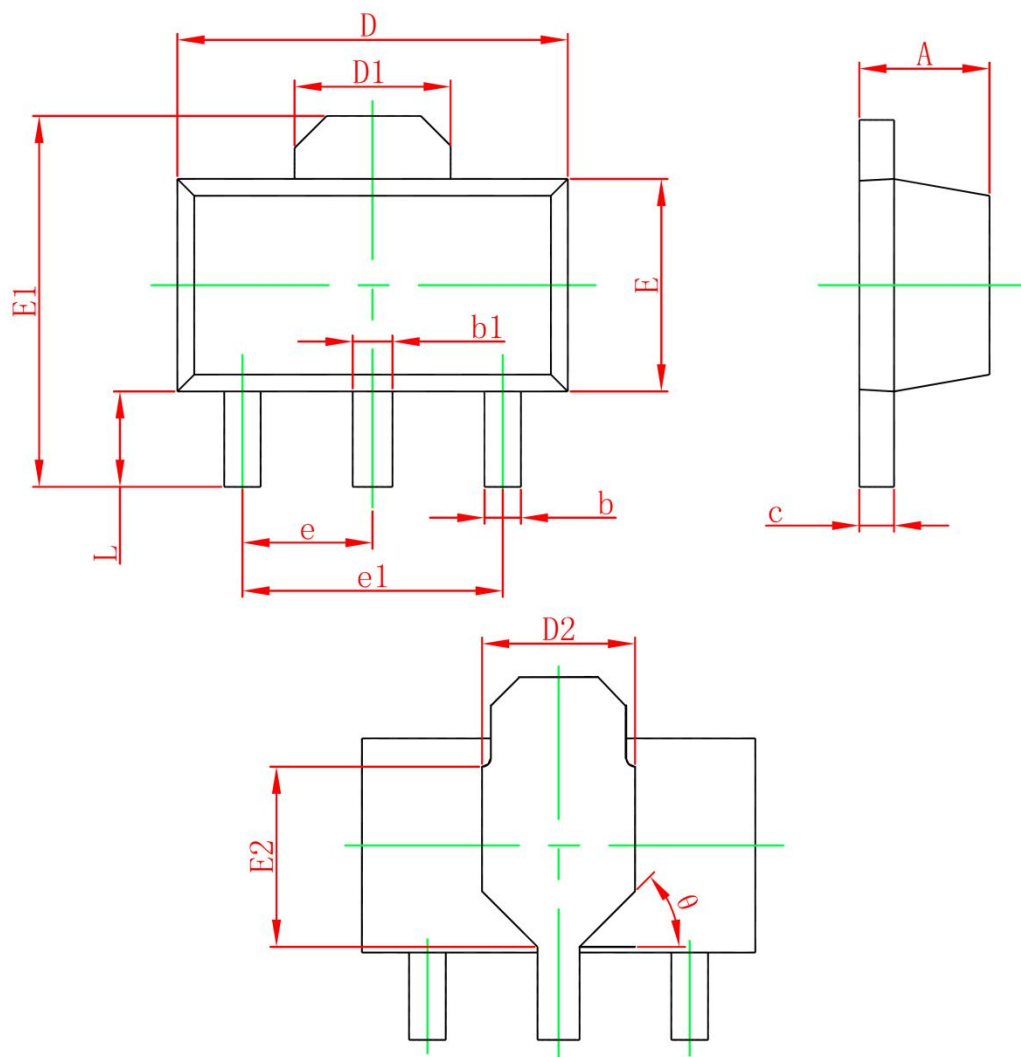Normalized breakdown voltage

Normalized Threshold voltage

Maximum Transient Thermal Impedance

Safe Operation Area

SOT-89 Package Outline

Symbol	Dimensions In Millimeters	
	Min.	**Max.**
A	1.400	1.600
b	0.320	0.520
b1	0.400	0.580
c	0.350	0.440
D	4.400	4.600
D1	1.550 REF.	
D2	1.750 REF.	
E	2.300	2.600
E1	3.940	4.250
E2	1.900 REF.	
e	1.500 TYP.	
e1	3.000 TYP.	
L	0.900	1.200
θ	45°	