

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-100V	190mΩ@-10V	-3.5A
	210mΩ@-4.5V	



合肥矽普半导体

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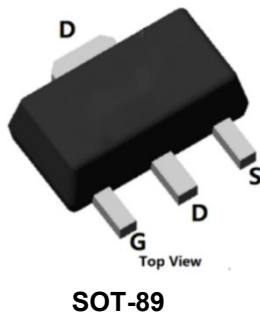
Feature

- High power and current handing capability
- Surface mount package

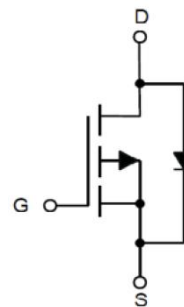
Application

- Battery Switch
- DC/DC Converter

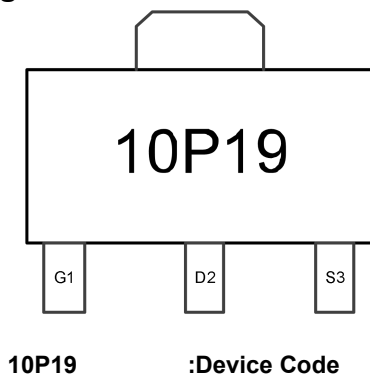
Package



Circuit diagram



Marking



Order Information

Device	Package	Unit/Tape
SP010P190T8	SOT-89	1000

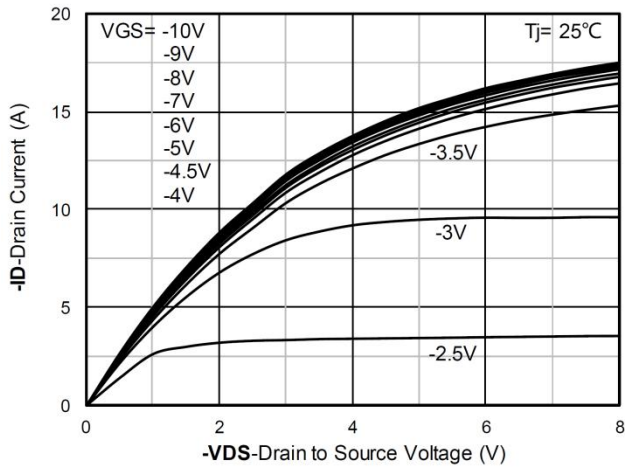
Absolute maximum ratings (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-3.5	A
Pulse Drain Current Tested	I_{DM}	-14	A
Power Dissipation	P_D	2.5	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	50	°C/W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

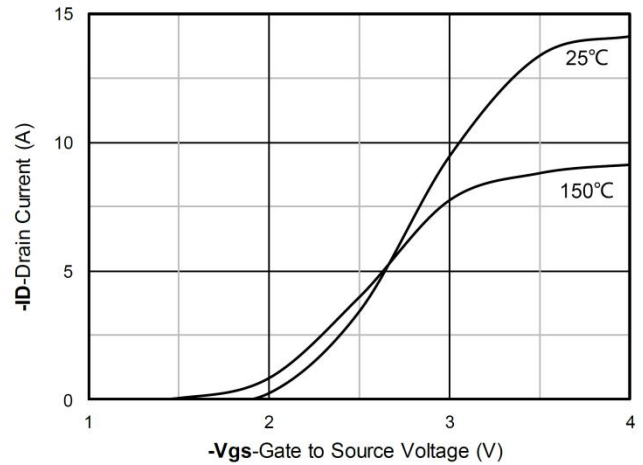
Electrical characteristics (Ta=25°C, unless otherwise noted)

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	VGS(th)	VDS=VGS , ID=-250μA	-1.0	-1.5	-2.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	VGS=-10V , ID=-0.5A	-	190	250	mΩ
		VGS=-4.5V , ID=-0.4A	-	210	300	
Dynamic characteristics						
Input Capacitance	C _{iss}	VDS=-25V , VGS=0V , f=1MHz	-	1239	-	pF
Output Capacitance	C _{oss}		-	42	-	
Reverse Transfer Capacitance	C _{rss}		-	38	-	
Total Gate Charge	Q _g	VDS=-60V , VGS=-10V , ID=-3A	-	17.5	-	nC
Gate-Source Charge	Q _{gs}		-	2.8	-	
Gate-Drain Charge	Q _{gd}		-	3.2	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	VDD=-50V VGS=- 10V , RG=10Ω, ID=-3A	-	9.1	-	nS
Turn-On Rise Time	t _r		-	14.9	-	
Turn-Off Delay Time	t _{d(off)}		-	57.4	-	
Turn-Off Fall Time	t _f		-	34.4	-	
Source-Drain Diode characteristics						
Diode Forward Voltage	V _{SD}	VGS=0V , IS=-1A , TJ=25℃	-	-	-1.2	V

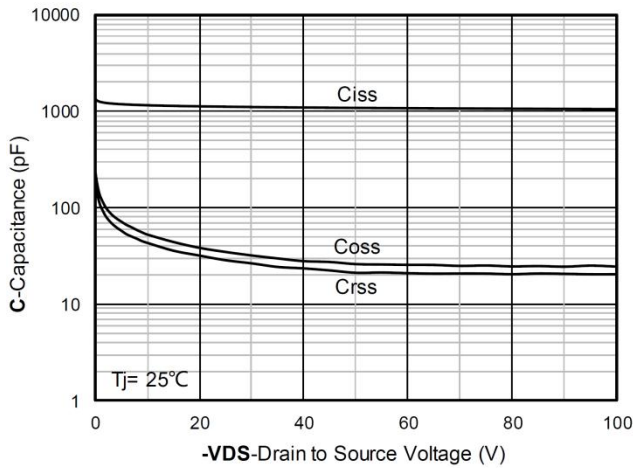
Typical Characteristics



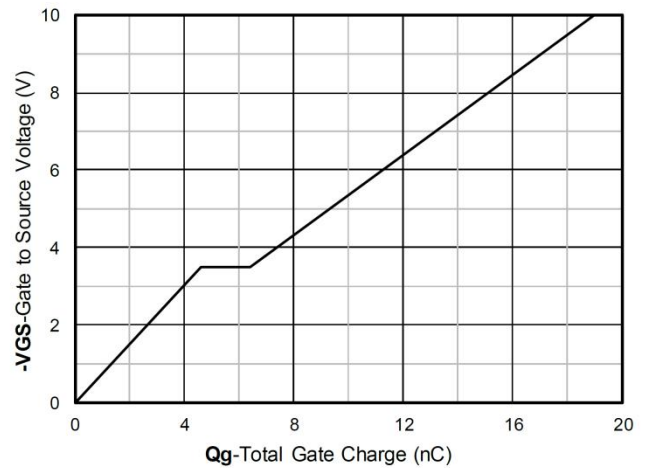
Output Characteristics



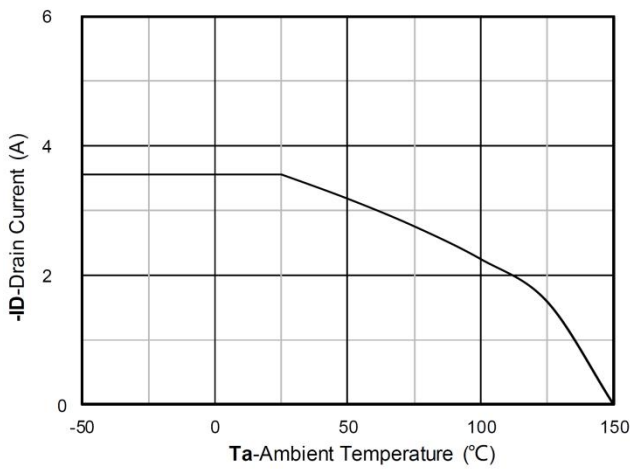
Transfer Characteristics



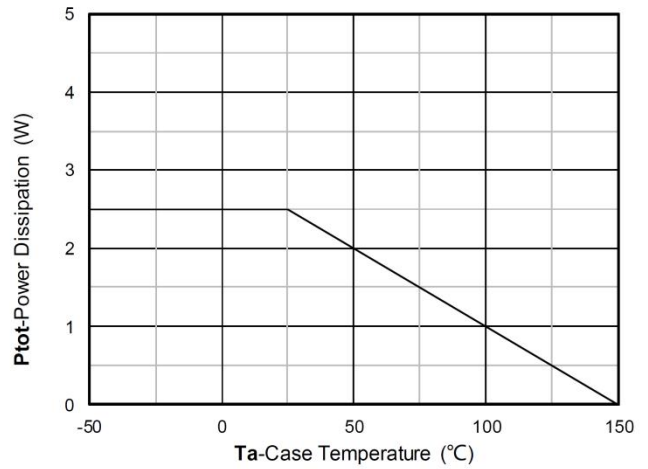
Capacitance Characteristics



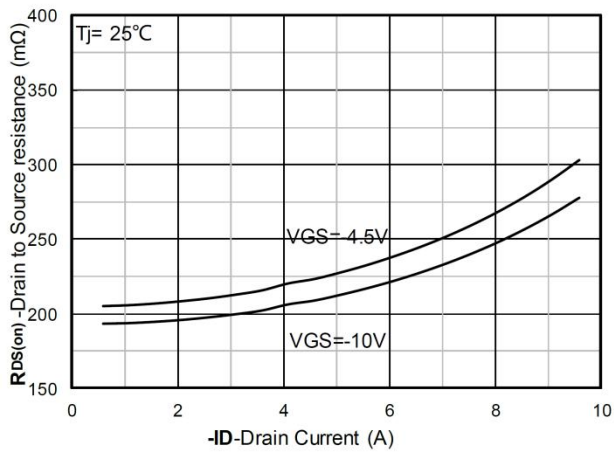
Gate Charge



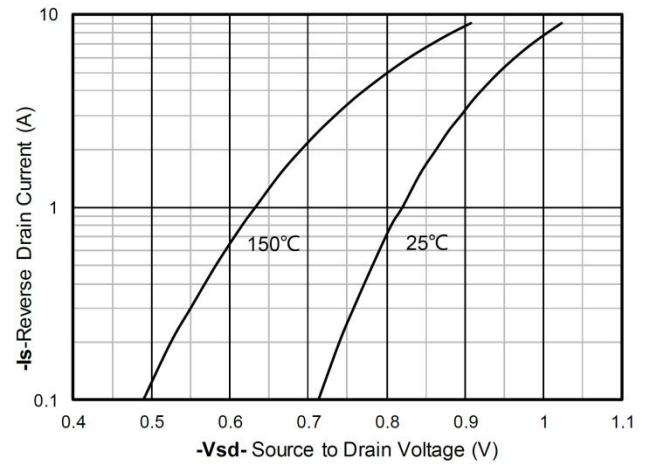
Current dissipation



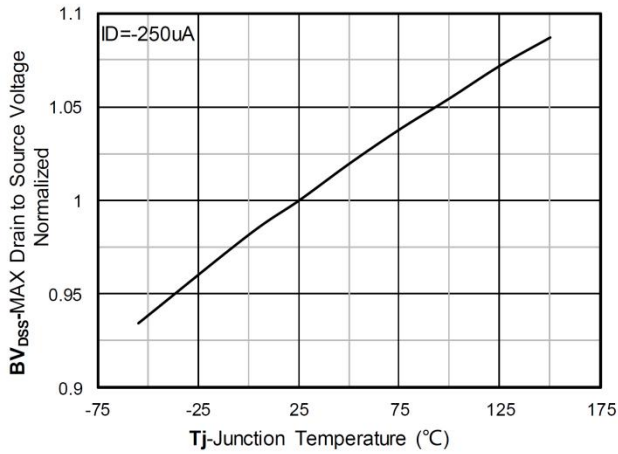
Power dissipation



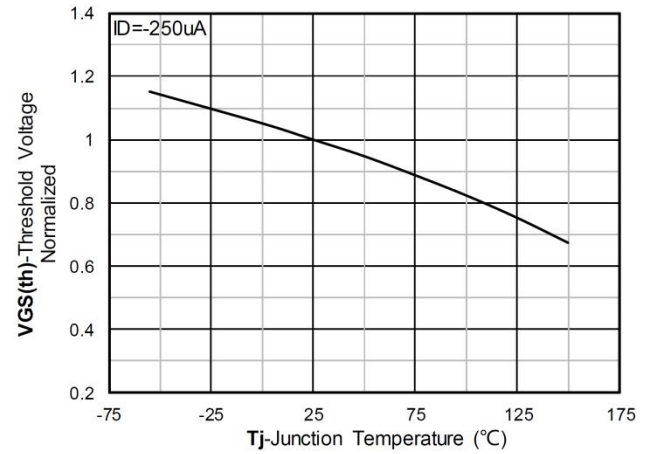
$R_{DS(on)}$ VS Drain Current



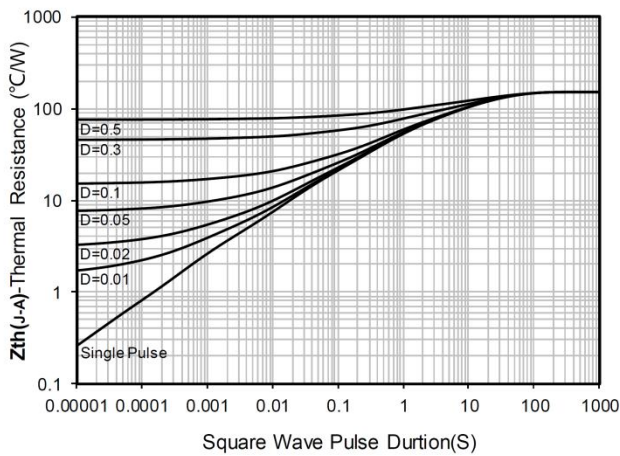
Forward characteristics of reverse diode



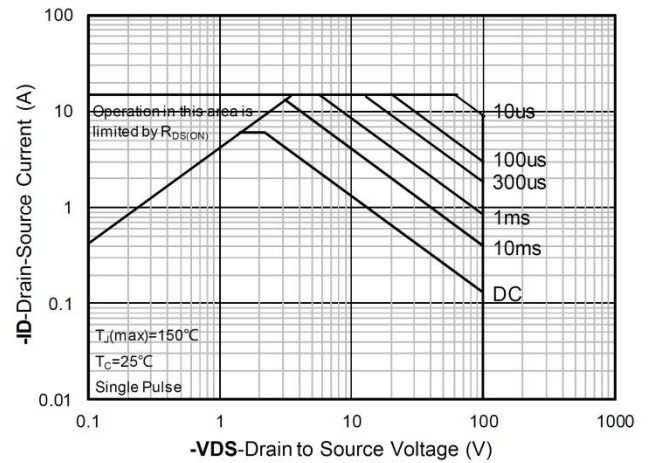
Normalized breakdown voltage



Normalized Threshold voltage

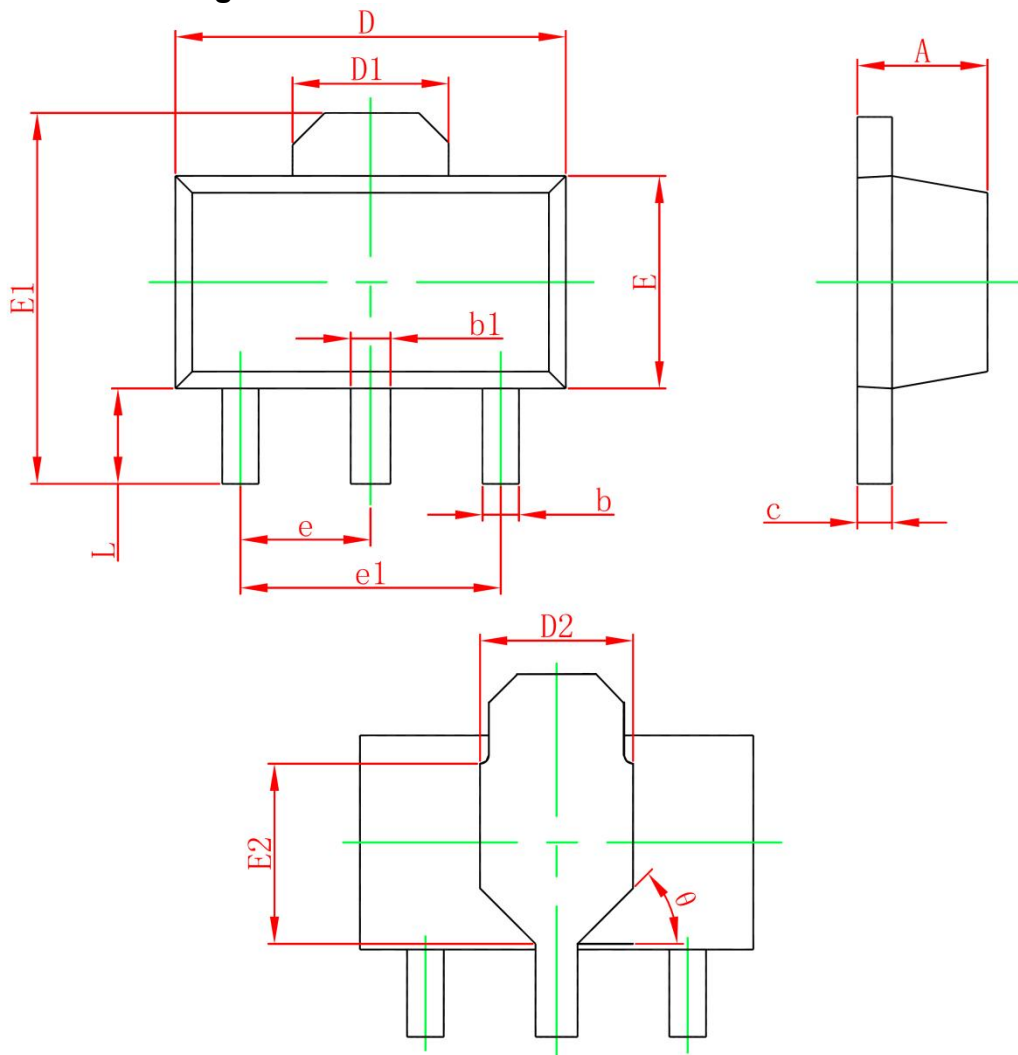


Maximum Transient Thermal Impedance



Safe Operation Area

SOT-89 Package Information



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°	

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