

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-100V	190mΩ@-10V	-4A
	210mΩ@-4.5V	



合肥矽普半导体

Siliup Semiconductor Technology Co., Ltd

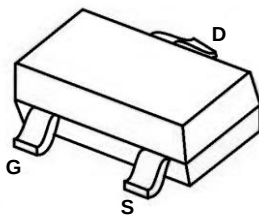
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Feature

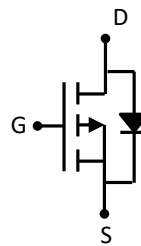
- High density cell design for ultra low $R_{DS(on)}$
- Fast Switching Speed
- Low Gate Charge

Package

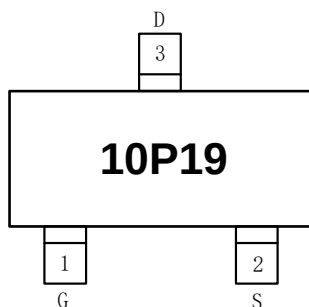


SOT-23-3L

Circuit diagram



Marking



10P19 =Device Code

Order Information

Device	Package	Unite/Tape
SP010N190T1	SOT-23-3L	3000

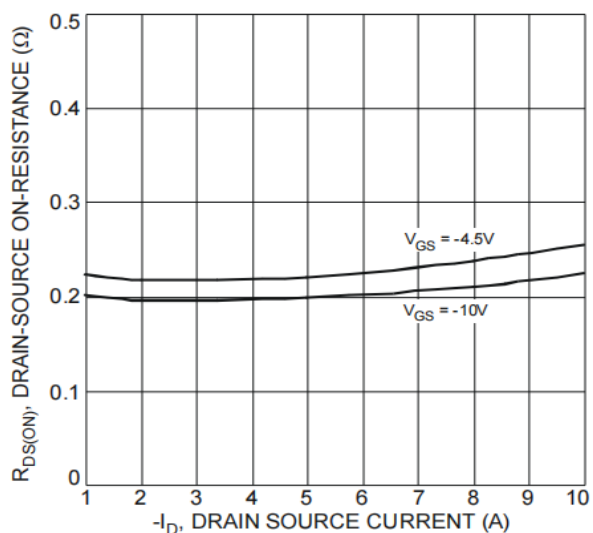
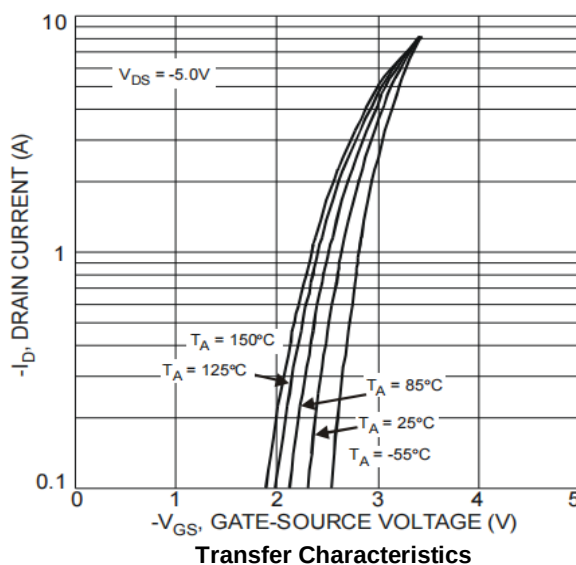
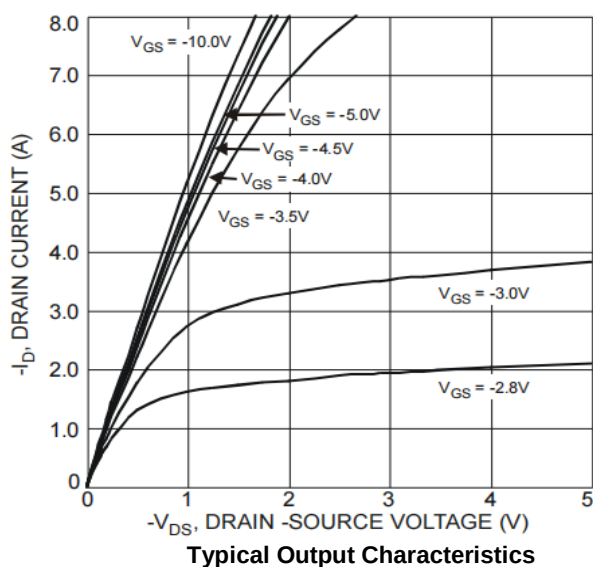
Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	-100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-4	A
Pulsed Drain Current	I_{DM}	-16	A
Total Power Dissipation	P_D	1.5	W
Thermal Resistance Junction-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

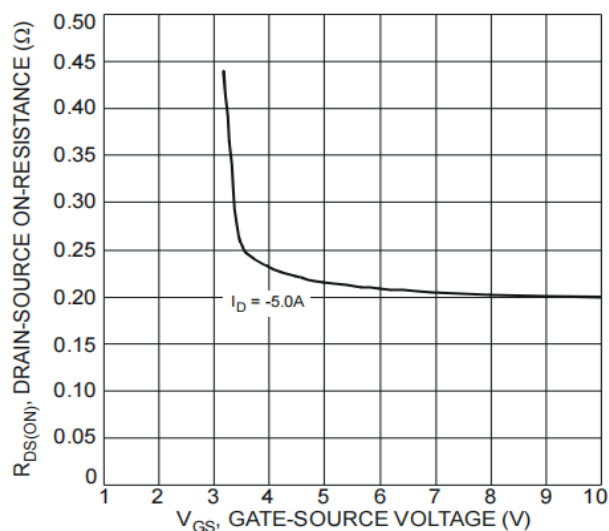
Electrical characteristics (T_A=25 °C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V , ID=-250uA	-100			V
Drain-Source Leakage Current	Idss	VDS=-100V , VGS=0V			1	uA
Gate-Source Leakage Current	IGSS	VGS=±20V , VDS=0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	VGS=VDS , ID =-250uA	-1	-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		
Switching Characteristics						
Turn-On Delay Time	T _{d(on)}	VDD=-50V , VGS=-10V , RG=10Ω, ID=-3A		9.1		ns
Rise Time	T _r			14.9		
Turn-Off Delay Time	T _{d(off)}			57.4		
Fall Time	T _f			34.4		
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		
Source-Drain Diode characteristics						
Diode Forward Voltage	V _{SD}	VGS=0V , IS=-1A			-1.2	V

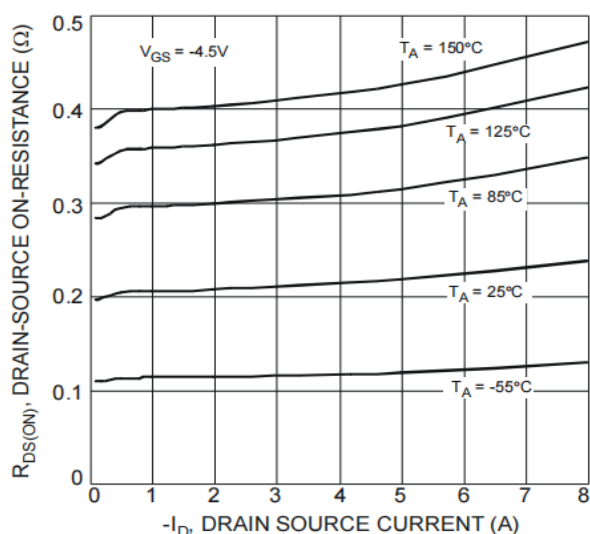
Typical Characteristics



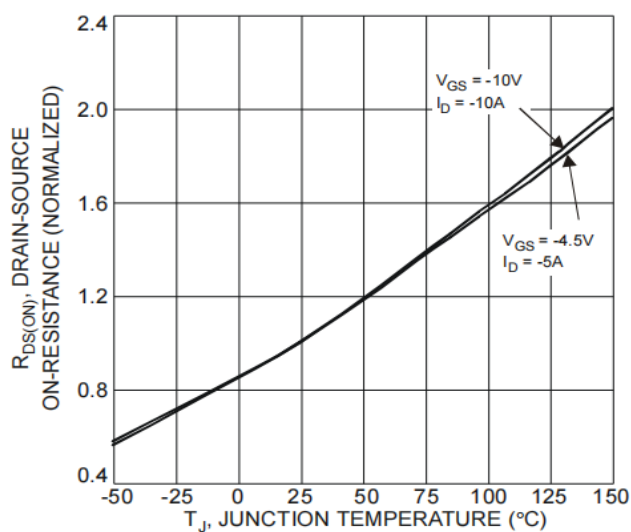
On-Resistance vs. Drain Current and Gate Voltage



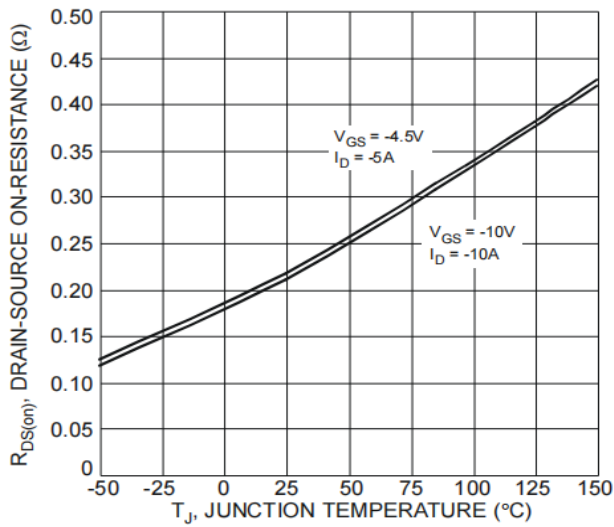
Drain-Source On-Resistance vs. Gate-Source Voltage



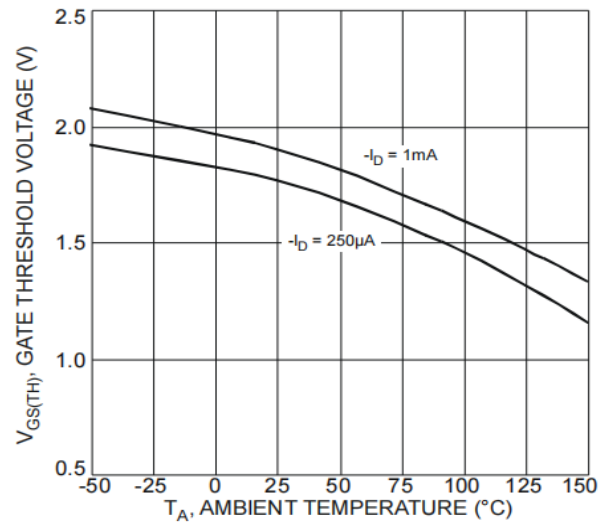
On-Resistance vs. Drain Current and Temperature



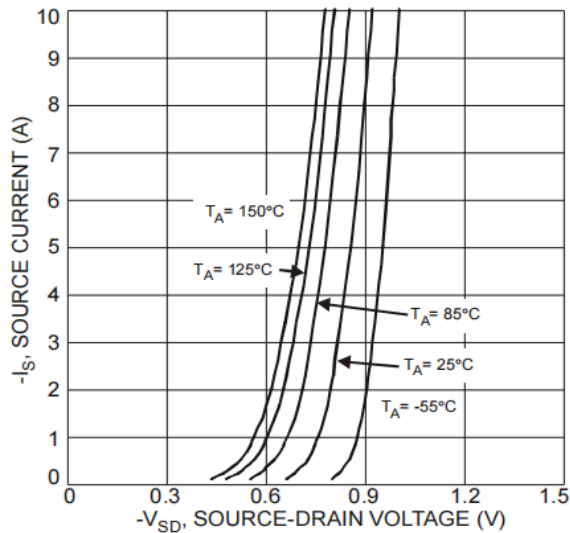
On-Resistance Variation with Temperature



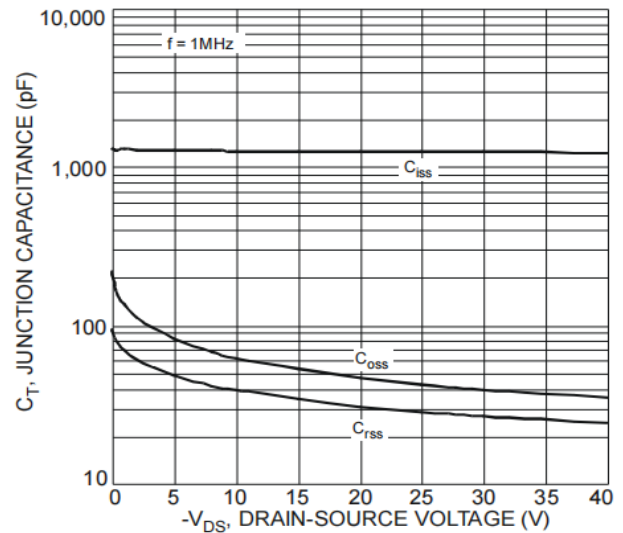
On-Resistance Variation with Temperature



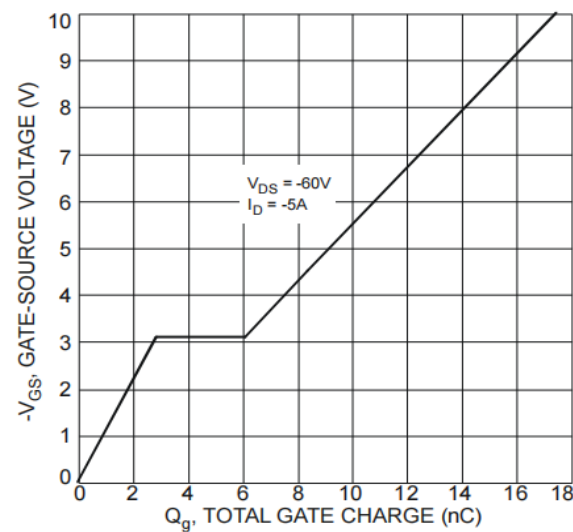
Gate Threshold Variation vs. Ambient Temperature



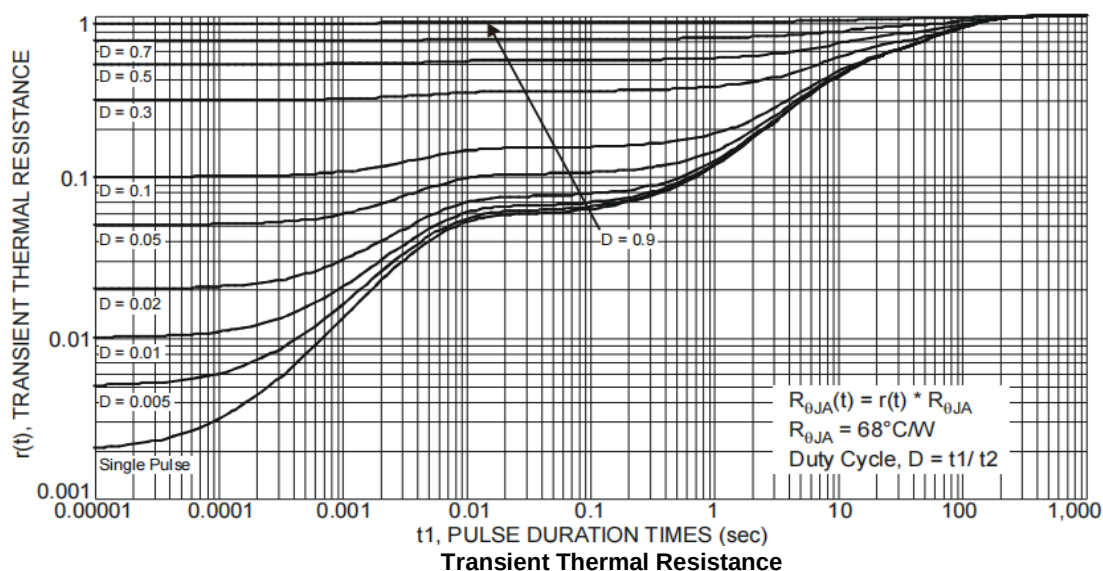
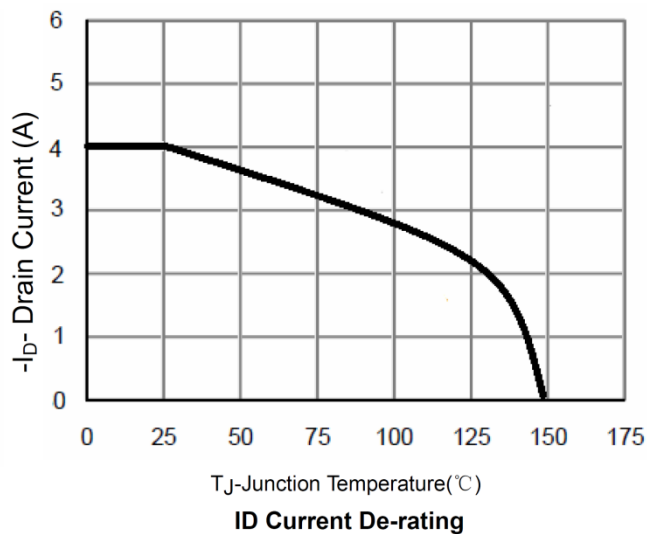
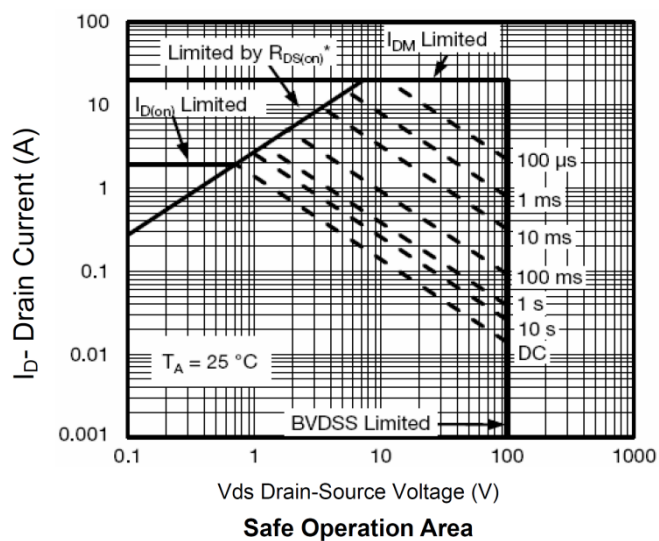
Diode Forward Voltage vs. Current

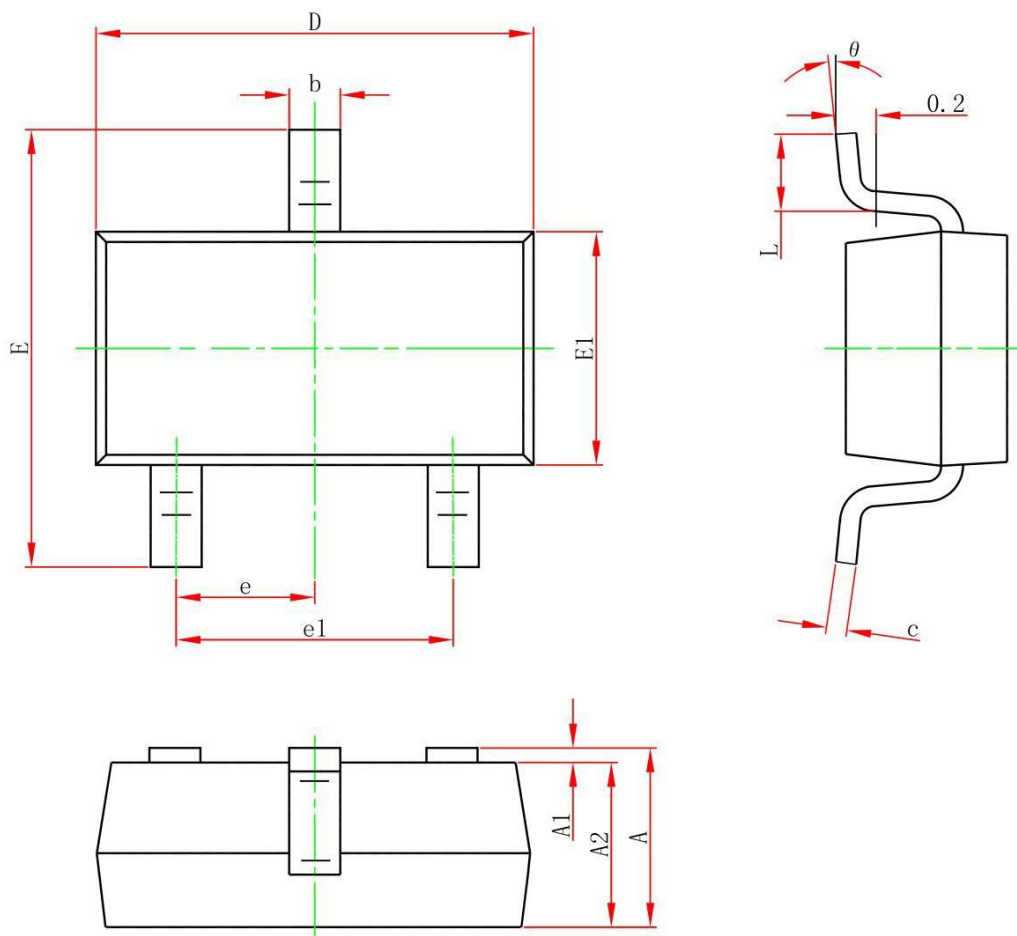


Typical Junction Capacitance



Gate-Charge Characteristics



**SOT-23-3L Package Information**

Symbol	Dimensions in millimeters	
	Min.	Max.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E1	1.500	1.700
E	2.650	2.950
e	0.950 Typ.	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°