

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
900V	1100mΩ@10V	8A



合肥矽普半导体

Siliup Semiconductor Technology Co., Ltd

技术 品质 服务

www.siliup.com

Feature

- Fast Switching
- Low Gate Charge and $R_{DS(on)}$
- 100% Single Pulse avalanche energy Test

Applications

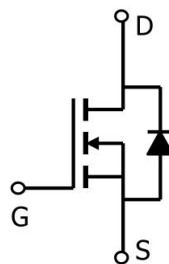
- DC-DC Converter
- Ideal for high-frequency switching and synchronous rectification

Package

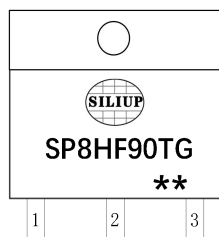


TO-220F(1:G 2:D 3:S)

Circuit diagram



Marking



SP8HF90TG :Product code
** :Week code

Order Information

Device	Package	Unit/Tube
SP8HF90TG	TO-220F	50

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	900	V
Gate-Source Voltage	V_{GS}	± 30	V
Continuous Drain Current (Tc=25°C)	I_D	8	A
Continuous Drain Current (Tc=100°C)	I_D	5.4	A
Pulsed Drain Current	I_{DM}	32	A
Single Pulse Avalanche Energy ¹	EAS	75	mJ
Power Dissipation (Tc=25°C)	P_D	34	W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	3.7	°C/W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

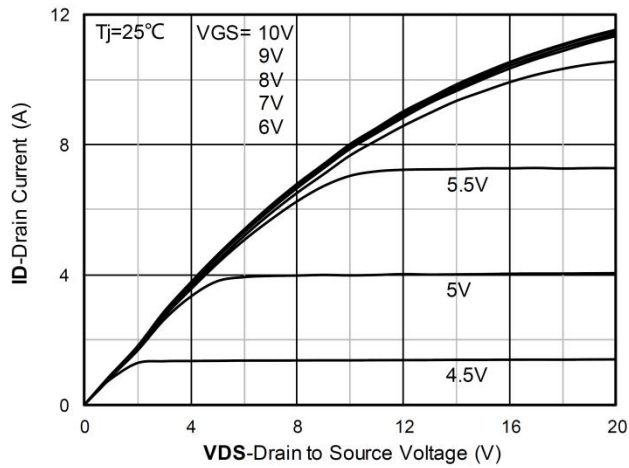
Electrical characteristics (Ta=25°C, unless otherwise noted)

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$ID = 250\mu A, VGS = 0V$	900	-	-	V
Drain Cut-Off Current	$IDSS$	$VDS = 720V, VGS = 0V$	-	-	1	μA
Gate Leakage Current	$IGSS$	$VGS = \pm 30V, VDS = 0V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$VDS = VGS, ID = 250\mu A$	2.0	3.0	4.0	V
Drain-Source ON Resistance	$R_{DS(ON)}$	$VGS = 10V, ID = 4A$	-	1100	1300	m Ω
Dynamic Characteristics						
Input Capacitance	C_{iss}	$VGS=0V, VDS= 100V, F=1MHz$	-	703	-	pF
Output Capacitance	C_{oss}		-	26	-	
Reverse Transfer Capacitance	C_{rss}		-	1.4	-	
Total Gate Charge	Q_g	$VDS= 400V, ID=20A, VGS= 10V$	-	16	-	nC
Gate-Source Charge	Q_{gs}		-	3.6	-	
Gate-Drain Charge	Q_{gd}		-	7.1	-	
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	$VDD= 400V, ID= 20A, VGS= 10V, R_G=10\Omega$	-	38	-	nS
Rise Time	t_r		-	52	-	
Turn-Off Delay Time	$t_{d(off)}$		-	28	-	
Fall Time	t_f		-	10	-	
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V_{SD}	$I_s = 1A, VGS = 0V$	-	-	1.2	V
Maximum Body-Diode Continuous Current	I_s		-	-	8	A
Body Diode Reverse Recovery Time	T_{rr}	$I_s=10A, di/dt=100A/us, T_J=25^{\circ}C$	-	194	-	nS
Body Diode Reverse Recovery Charge	Q_{rr}		-	2.5	-	nC

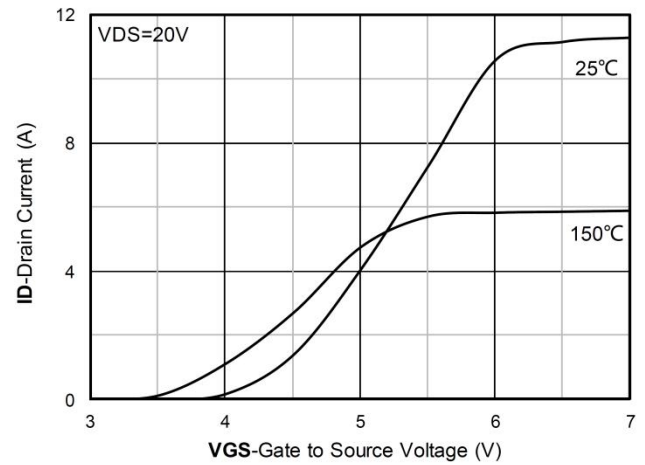
Note :

- The test condition is $V_{DD}=70V, V_{GS}=10V, L=10mH, R_G=30\Omega$;

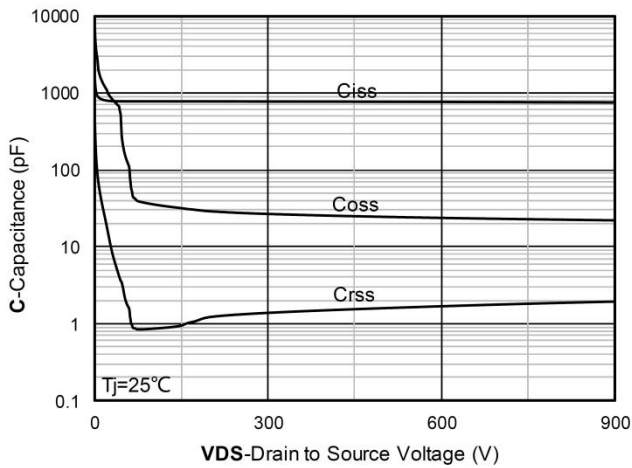
Typical Characteristics



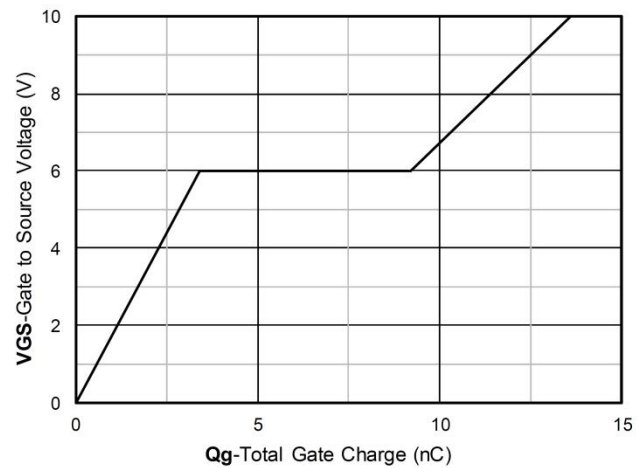
Output Characteristics



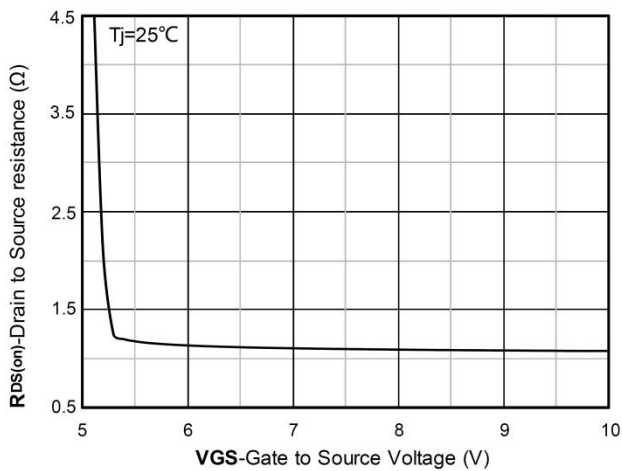
Transfer Characteristics



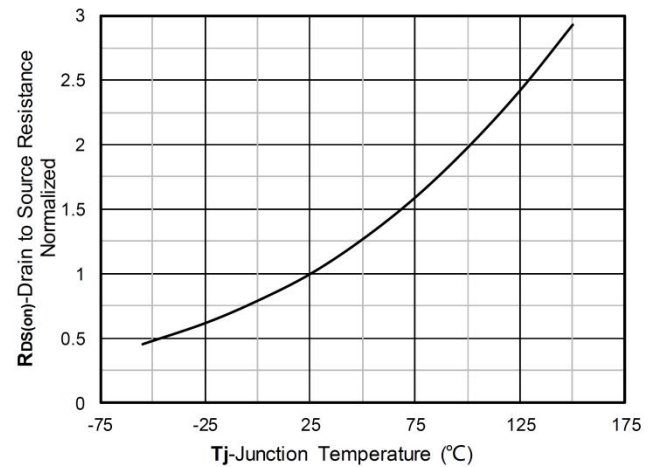
Capacitance Characteristics



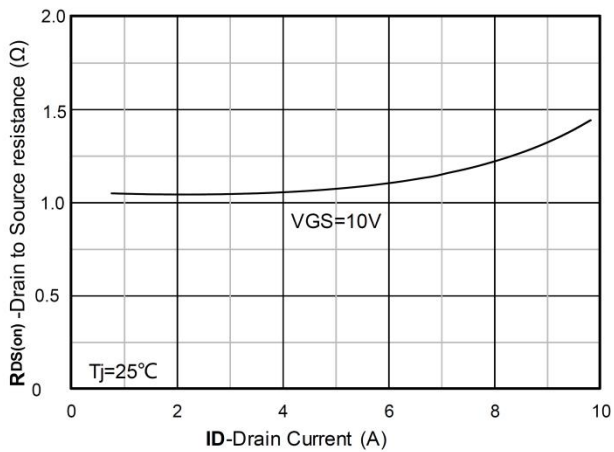
Gate Charge



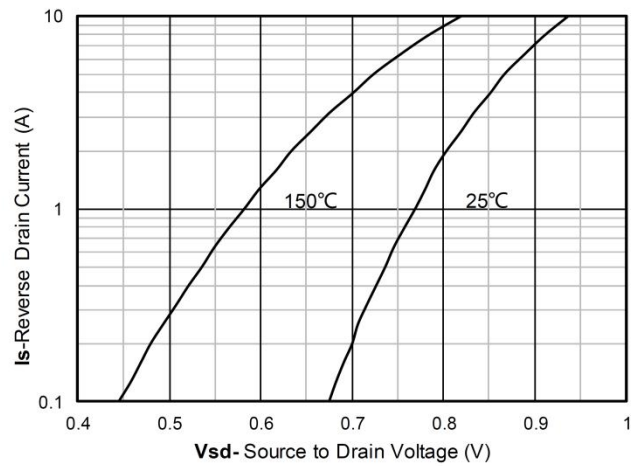
On-Resistance vs Gate to Source Voltage



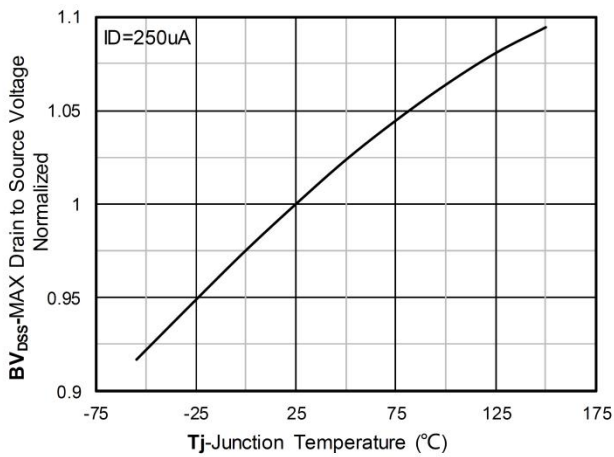
Normalized On-Resistance



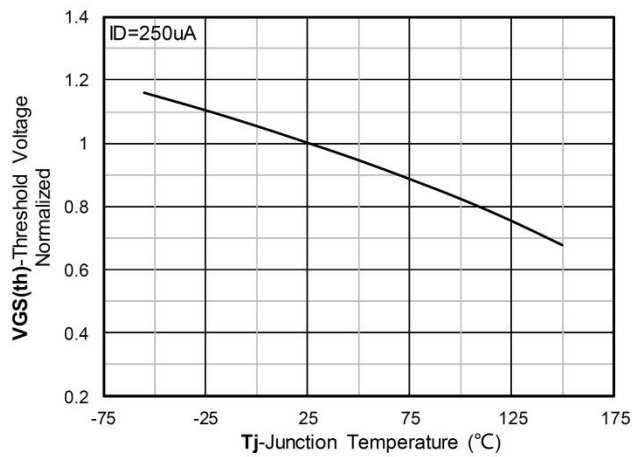
RDS(on) VS Drain Current



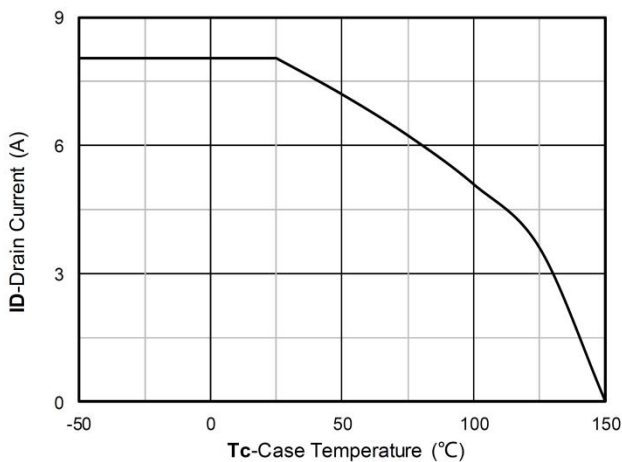
Forward characteristics of reverse diode



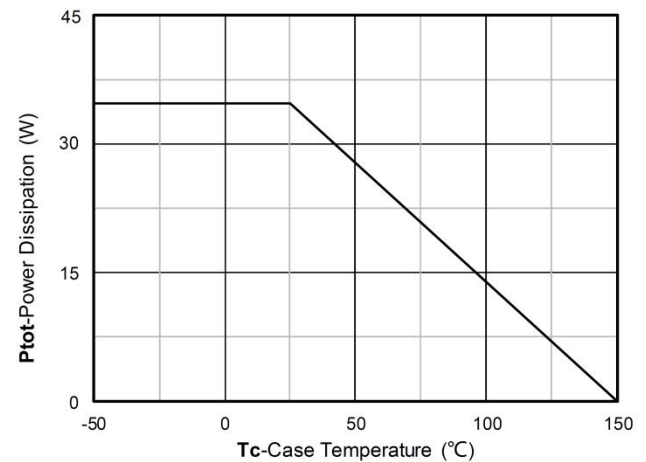
Normalized breakdown voltage



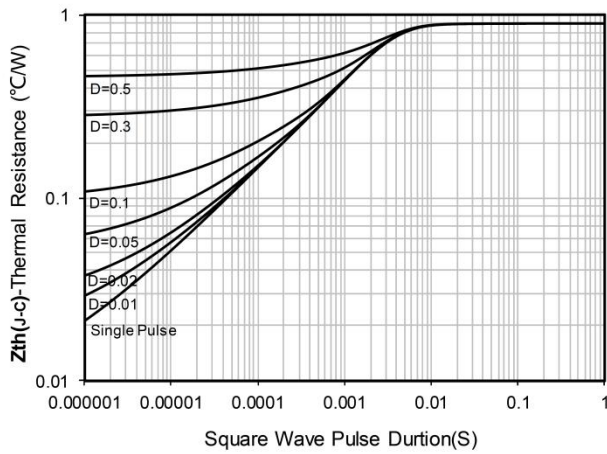
Normalized Threshold voltage



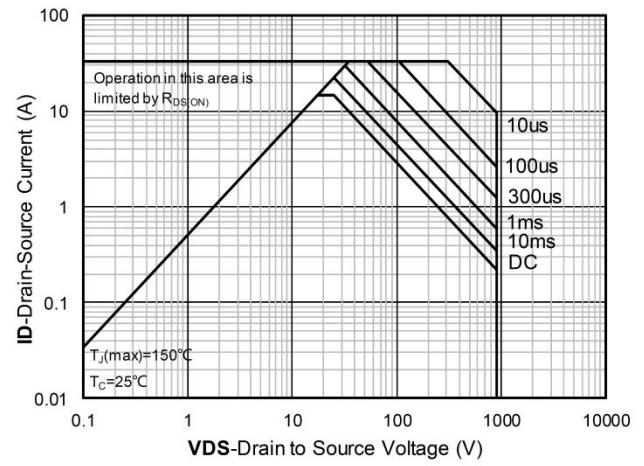
Current dissipation



Power dissipation



Maximum Transient Thermal Impedance



Safe Operation Area

