

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	1.6Ω@10V	340mA
	1.8Ω@4.5V	
-60V	4.2Ω@-10V	-130mA
	4.5Ω@-4.5V	



合肥矽普半导体

Siliup Semiconductor Technology Co., Ltd

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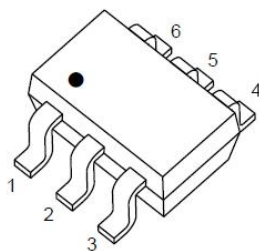
Feature

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

Application

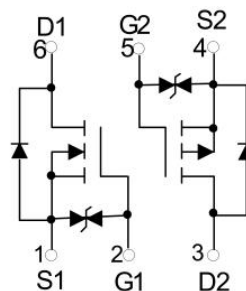
- Battery Switch
- DC/DC Converter

Package

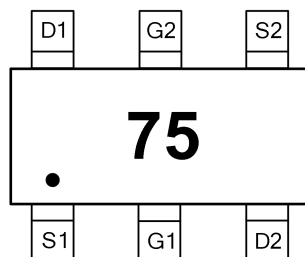


SOT-363

Circuit diagram



Marking



75 :Device Code

Order Information

Device	Package	Unit/Tape
SP7284KCTW	SOT-363	3000

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

Parameter	Symbol	Value		Units
		N-Channel	P-Channel	
Drain-Source Voltage	V_{DS}	60	-60	V
Gate-Source Voltage	V_{GS}	±20	±20	V
Continuous Drain Current	I_D	340	-130	mA
Pulsed Drain Current	I_{DM}	1360	-520	mA
Power Dissipation	P_D	150		mW
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	833		°C/W
Storage Temperature Range	T_{STG}	-55 to 150		°C
Operating Junction Temperature Range	T_J	-55 to 150		°C

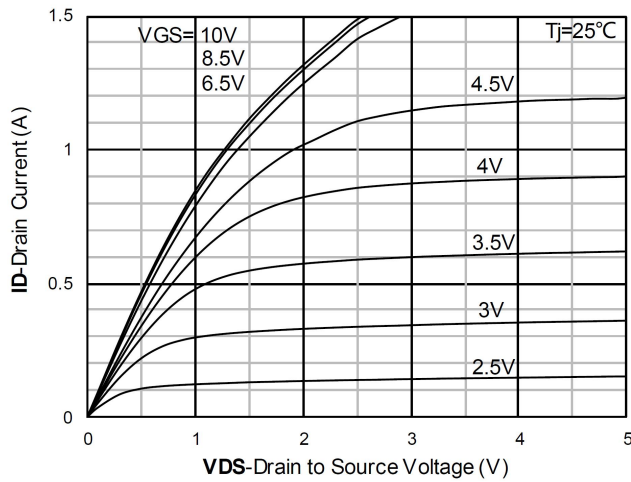
N-Channel Electrical characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V , ID=250μA	60	-	-	V
Drain-Source Leakage Current	IDSS	VDS=48V , VGS=0V	-	-	1	uA
Gate-Source Leakage Current	IGSS	VGS=±20V , VDS=0V	-	-	±10	uA
Gate Threshold Voltage	VGS(th)	VDS=VGS , ID=250μA	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	RDS(on)	VGS=10V , ID=250mA	-	1.6	3	Ω
		VGS=4.5V , ID=250mA	-	1.8	4	
Dynamic characteristics						
Input Capacitance	Ciss	VDS=25V , VGS=0V , f=1MHz	-	28	-	pF
Output Capacitance	Coss		-	10	-	
Reverse Transfer Capacitance	Crss		-	5	-	
Total Gate Charge	Qg	VDS=10V , VGS=4.5V , ID=300mA	-	1.7	-	nC
Gate-Source Charge	Qgs		-	0.35	-	
Gate-Drain Charge	Qgd		-	0.5	-	
Switching Characteristics						
Turn-On Delay Time	td(on)	VDD=30V VGS=10V , RG=25Ω , ID=300mA	-	3	-	nS
Turn-On Rise Time	tr		-	17	-	
Turn-Off Delay Time	td(off)		-	10	-	
Turn-Off Fall Time	tf		-	21	-	
Source-Drain Diode characteristics						
Diode Forward Voltage	VSD	VGS=0V , IS=1A , TJ=25℃	-	-	1.2	V

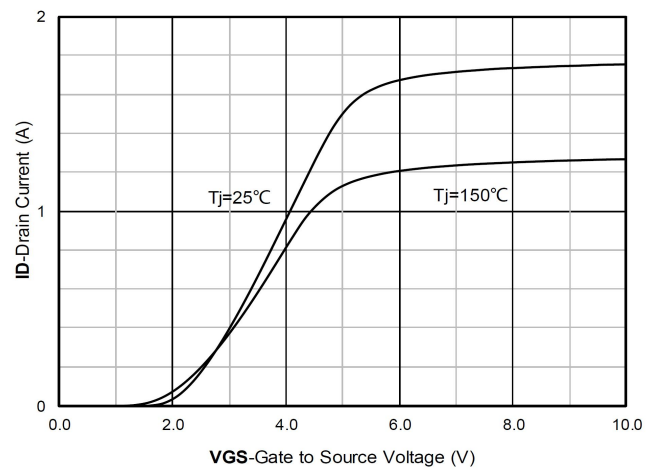
P-Channel Electrical characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V , ID=250μA	-60	-	-	V
Drain-Source Leakage Current	IDSS	VDS=-48V , VGS=0V	-	-	-1	uA
Gate-Source Leakage Current	IGSS	VGS=±20V , VDS=0V	-	-	±10	uA
Gate Threshold Voltage	VGS(th)	VDS=VGS , ID=-250μA	-1.0	-1.8	-2.5	V
Static Drain-Source On-Resistance	RDS(on)	VGS=-10V , ID=-100mA	-	4.2	6	mΩ
		VGS=-4.5V , ID=-100mA	-	4.5	7	
Dynamic characteristics						
Input Capacitance	Ciss	VDS=-5V , VGS=0V , f=1MHz	-	30	-	pF
Output Capacitance	Coss		-	10	-	
Reverse Transfer Capacitance	Crss		-	5	-	
Total Gate Charge	Qg	VDS=-30V , VGS=-10V , ID=-0.15A	-	1.8	-	nC
Gate-Source Charge	Qgs		-	0.5	-	
Gate-Drain Charge	Qgd		-	0.18	-	
Switching Characteristics						
Turn-On Delay Time	td(on)	VDD=-15V VGS=-10V , RG=50Ω, ID=-0.15A	-	8.6	-	nS
Turn-On Rise Time	tr		-	20	-	
Turn-Off Delay Time	td(off)		-	14	-	
Turn-Off Fall Time	tr		-	77	-	
Source-Drain Diode characteristics						
Diode Forward Voltage	VSD	VGS=0V , IS=-1A , TJ=25℃	-	-	-1.2	V

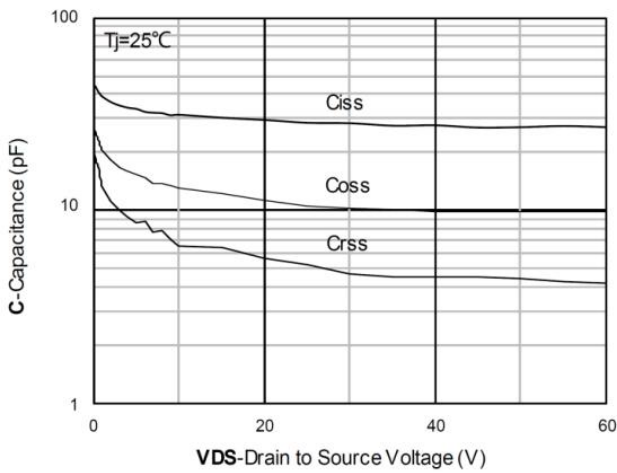
N-Channel Typical Characteristics



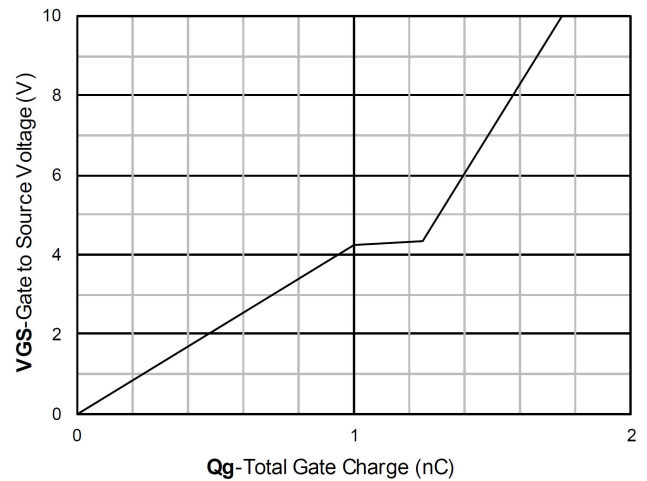
Output Characteristics



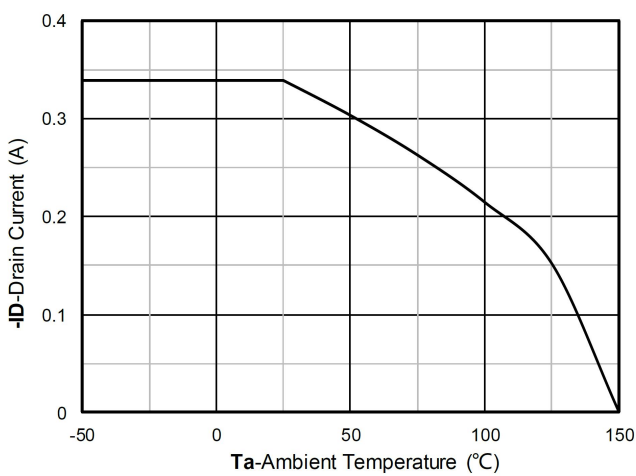
Transfer Characteristics



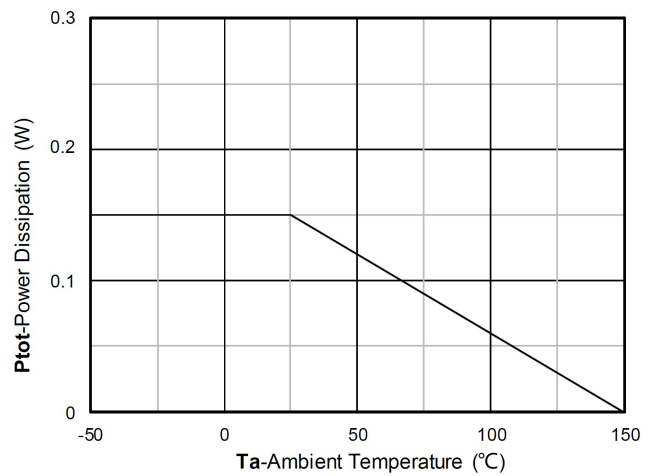
Capacitance Characteristics



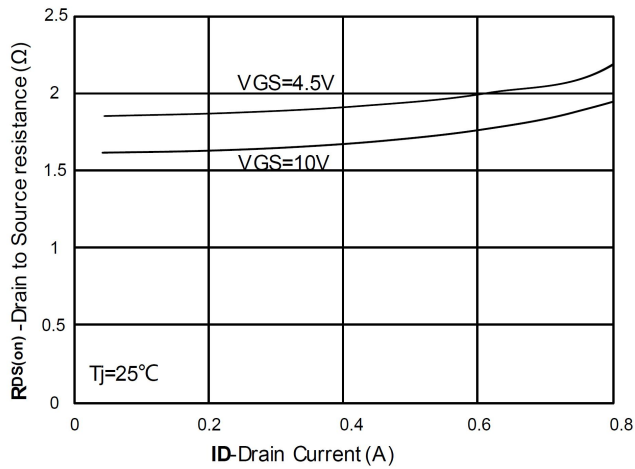
Gate Charge



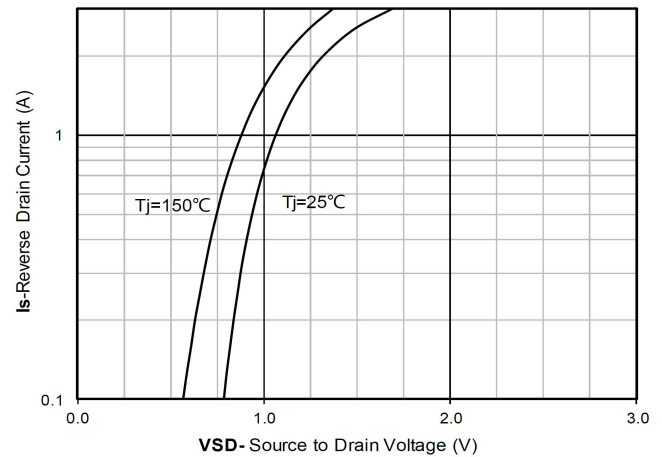
Current dissipation



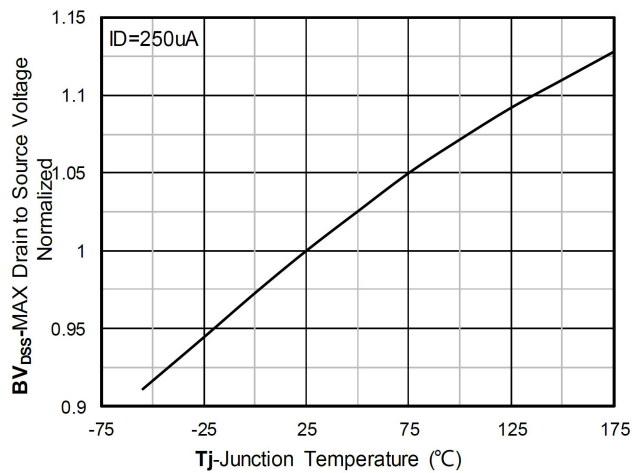
Power dissipation



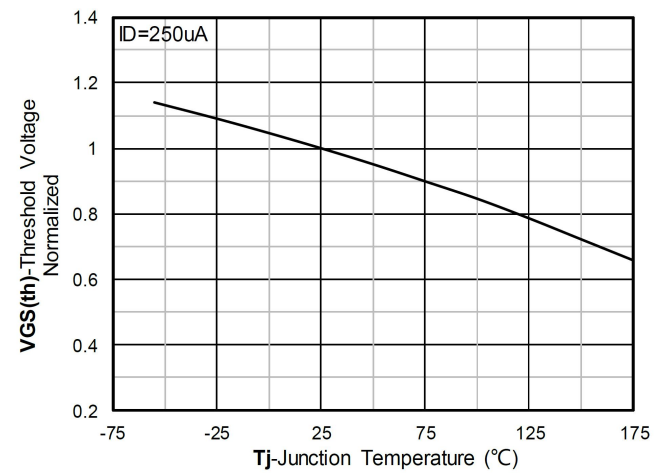
$R_{DS(on)}$ VS Drain Current



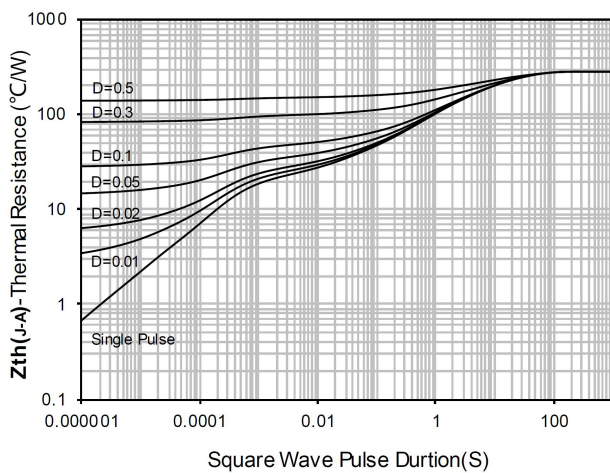
Forward characteristics of reverse diode



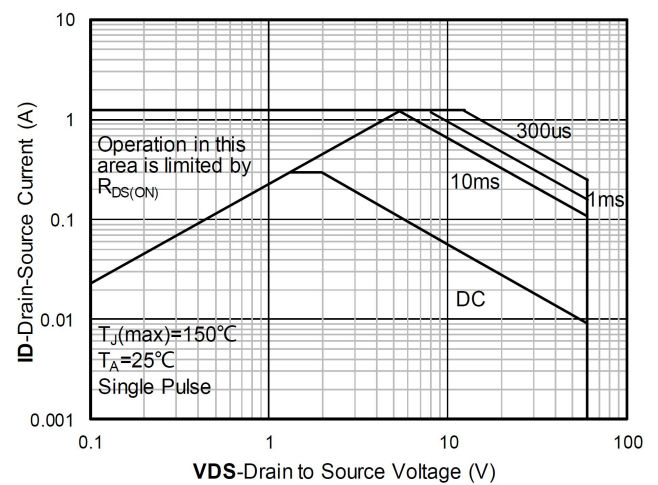
Normalized breakdown voltage



Normalized Threshold voltage

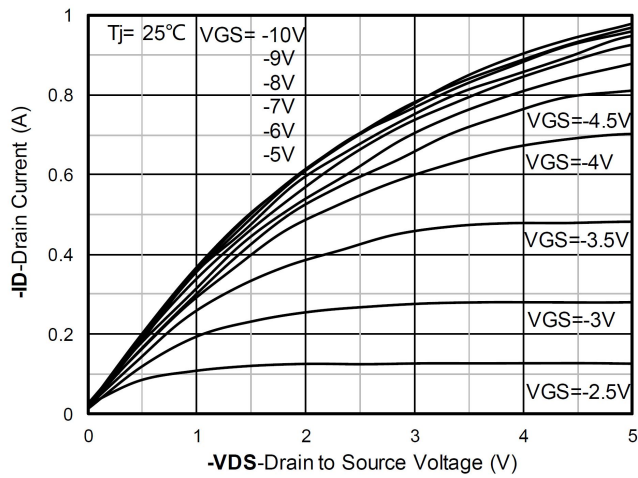


Maximum Transient Thermal Impedance

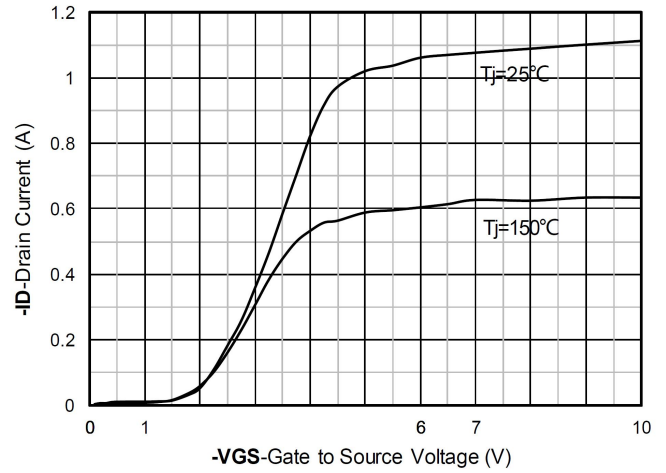


Safe Operation Area

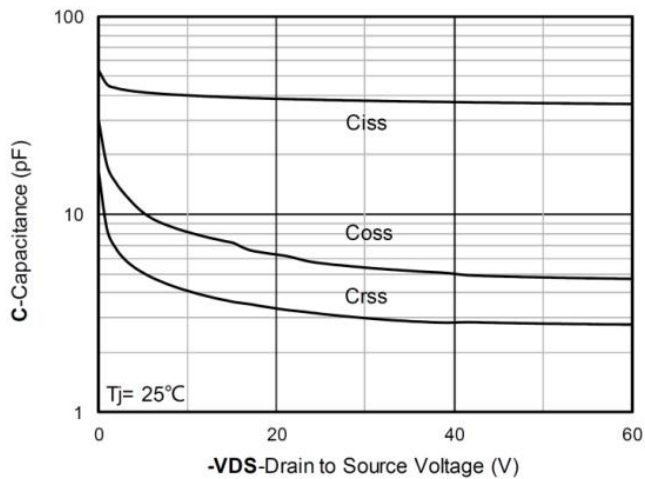
P-Channel Typical Characteristics



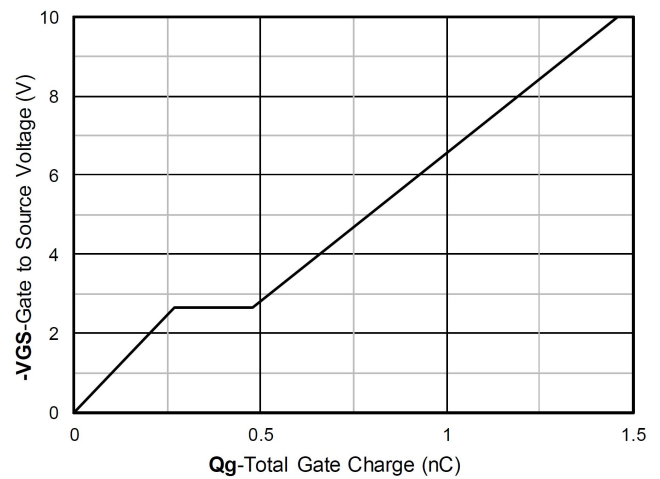
Output Characteristics



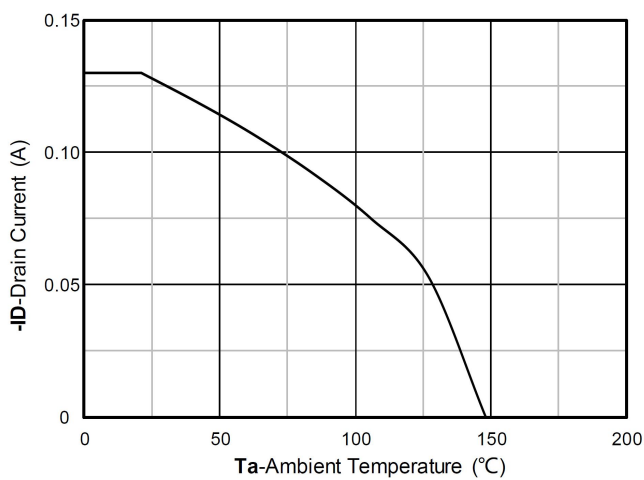
Transfer Characteristics



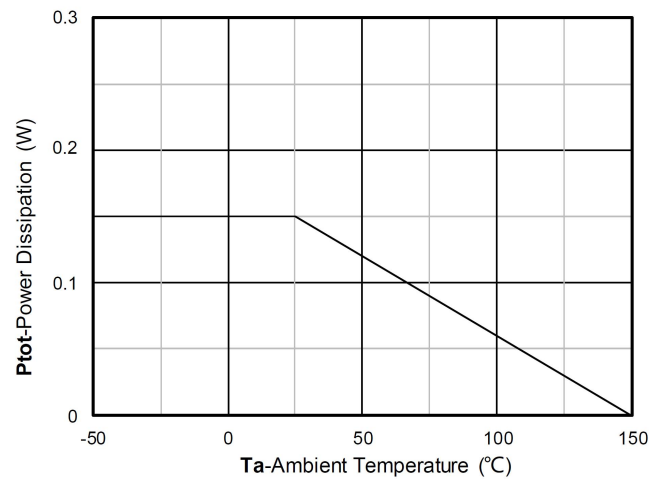
Capacitance Characteristics



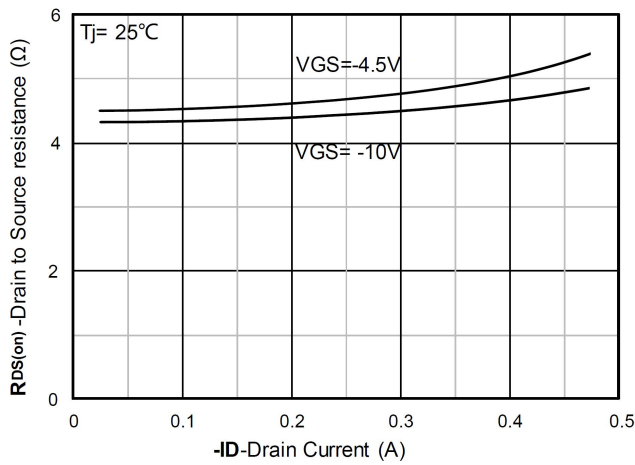
Gate Charge



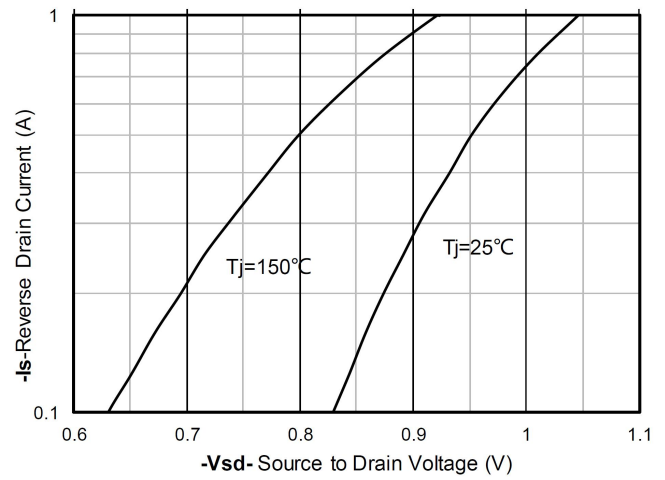
Current dissipation



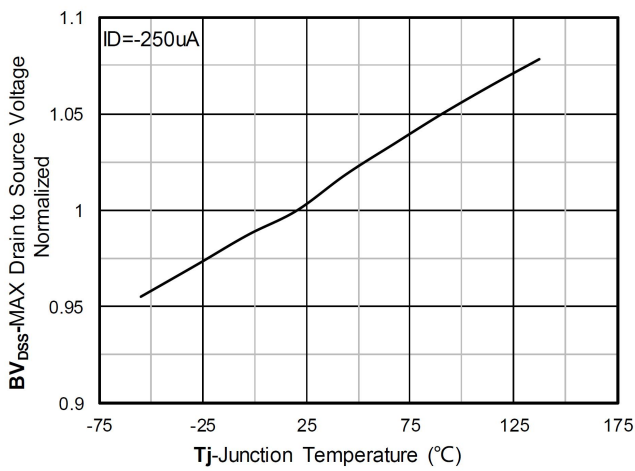
Power dissipation



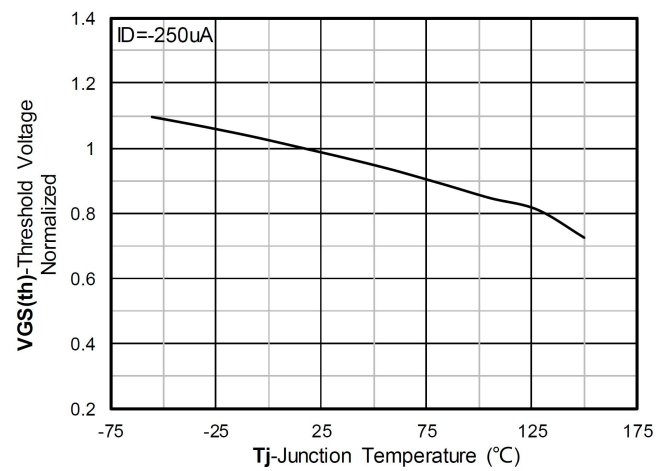
$R_{DS(on)}$ VS Drain Current



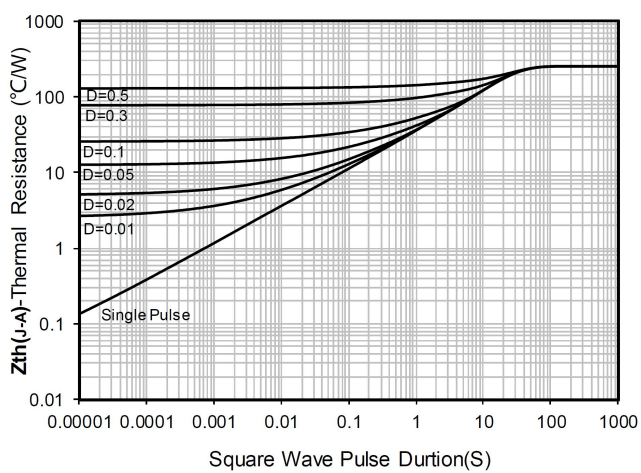
Forward characteristics of reverse diode



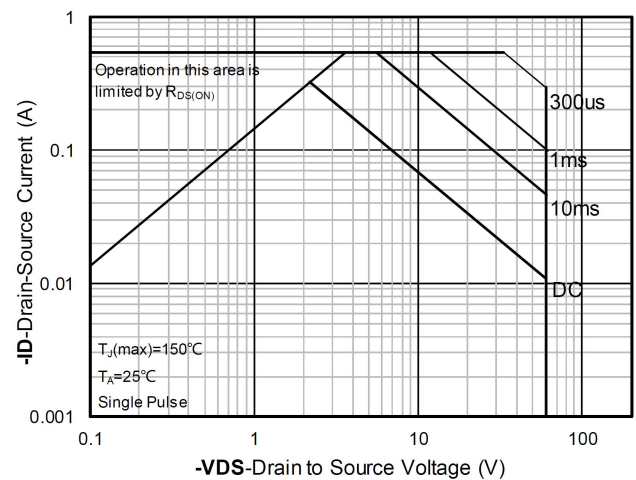
Normalized breakdown voltage



Normalized Threshold voltage

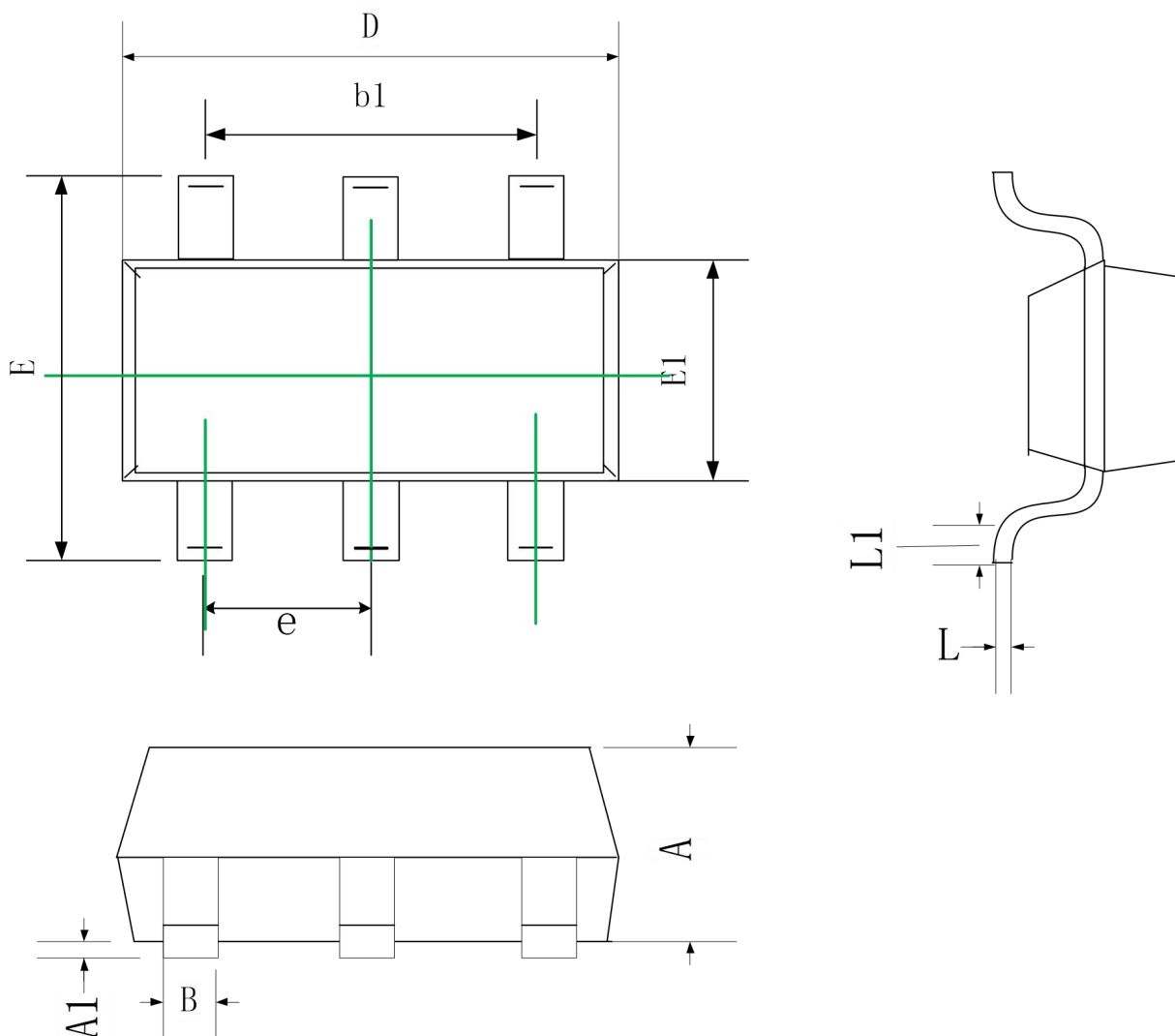


Maximum Transient Thermal Impedance



Safe Operation Area

SOT-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