

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	60mΩ@-10V	-5A
	75mΩ@-4.5V	



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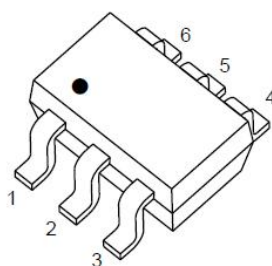
Feature

- High power and current handing capability
- Surface mount package

Application

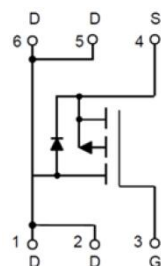
- Battery Switch
- DC/DC Converter

Package

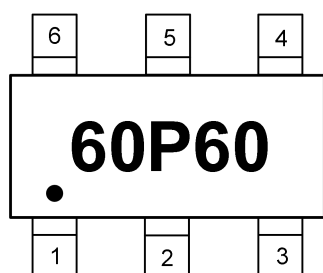


SOT-23-6L

Circuit diagram



Marking



60P60

:Device Code

Order Information

Device	Package	Unit/Tape
SP60P60TS	SOT-23-6L	3000

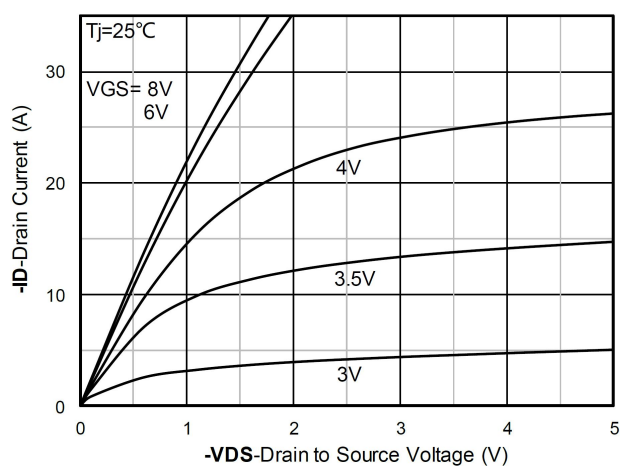
Absolute maximum ratings (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-5	A
Pulse Drain Current Tested	I_{DM}	-20	A
Power Dissipation	P_D	1	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	125	°C/W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

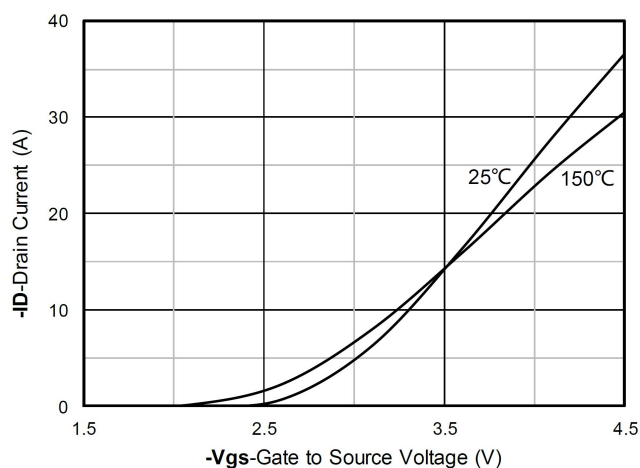
Electrical characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V , ID=-250μA	-60	-	-	V
Drain-Source Leakage Current	IDSS	VDS=-48V , VGS=0V	-	-	-1	uA
Gate-Source Leakage Current	IGSS	VGS=±20V , VDS=0V	-	-	±100	nA
Gate Threshold Voltage	VGS(th)	VDS=VGS , ID=-250μA	-1	-2	-3	V
Static Drain-Source On-Resistance	RDS(on)	VGS=-10V , ID =-2A	-	60	80	mΩ
		VGS=-4.5V , ID =-2A	-	75	110	
Dynamic characteristics						
Input Capacitance	Ciss	VDS=-30V , VGS=0V , f=1MHz	-	1090	-	pF
Output Capacitance	Coss		-	77	-	
Reverse Transfer Capacitance	Crss		-	58	-	
Total Gate Charge	Qg	VDS=-30V , VGS=-10V , ID=-5A	-	23	-	nC
Gate-Source Charge	Qgs		-	4.2	-	
Gate-Drain Charge	Qgd		-	4.8	-	
Switching Characteristics						
Turn-On Delay Time	td(on)	VDD=-30V VGS=-10V , RG=3Ω , ID=-5A	-	9.8	-	nS
Turn-On Rise Time	tr		-	6.1	-	
Turn-Off Delay Time	td(off)		-	44	-	
Turn-Off Fall Time	tr		-	12.7	-	
Source-Drain Diode characteristics						
Diode Forward Voltage	VSD	VGS=0V , IS=-1A , TJ=25℃	-	-	-1.2	V

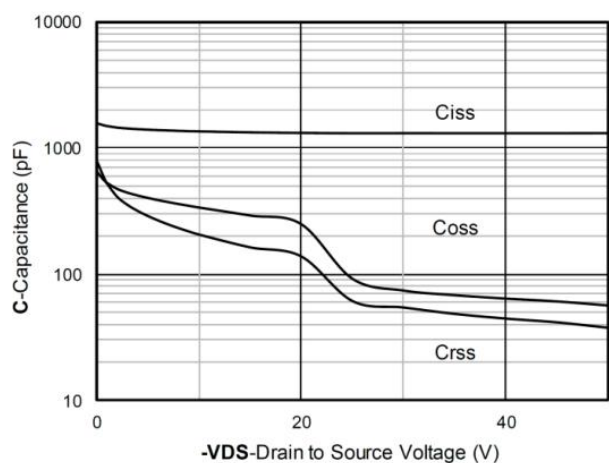
Typical Characteristics



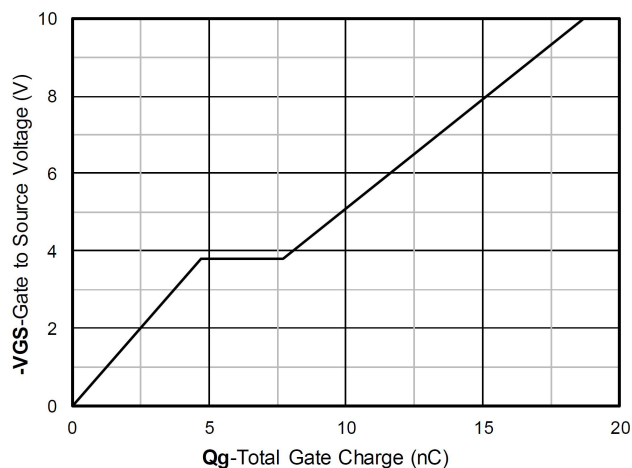
Output Characteristics



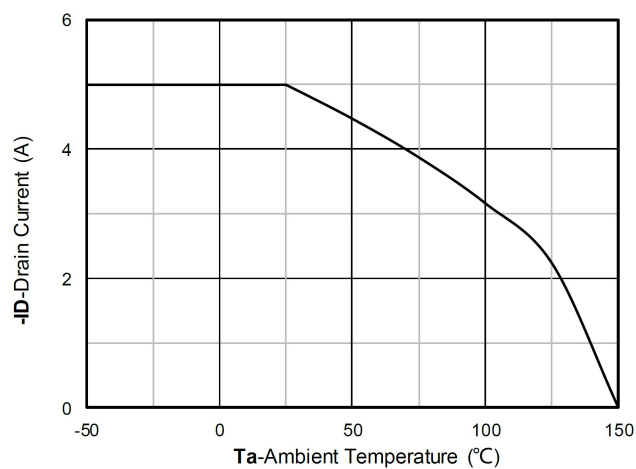
Transfer Characteristics



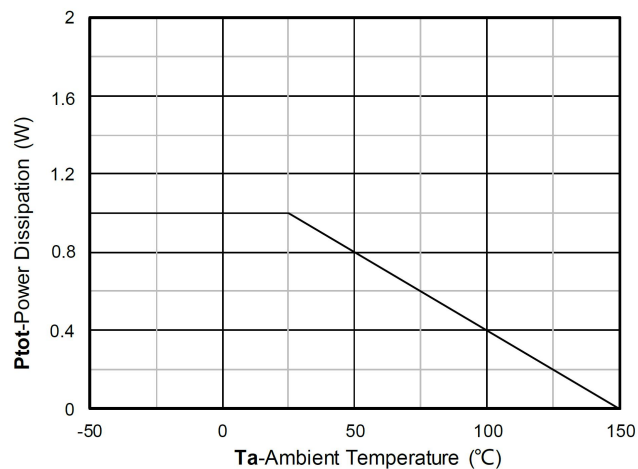
Capacitance Characteristics



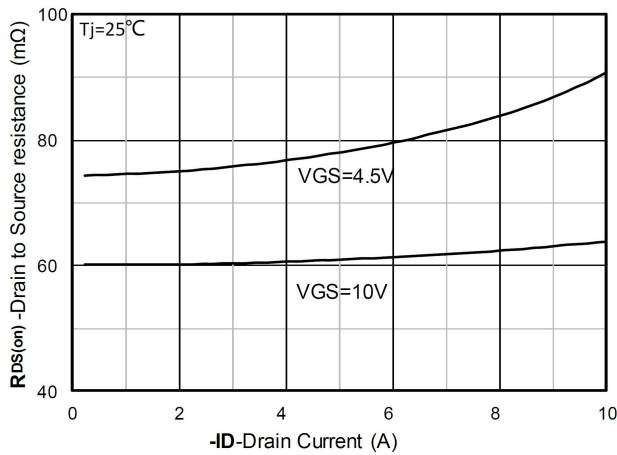
Gate Charge



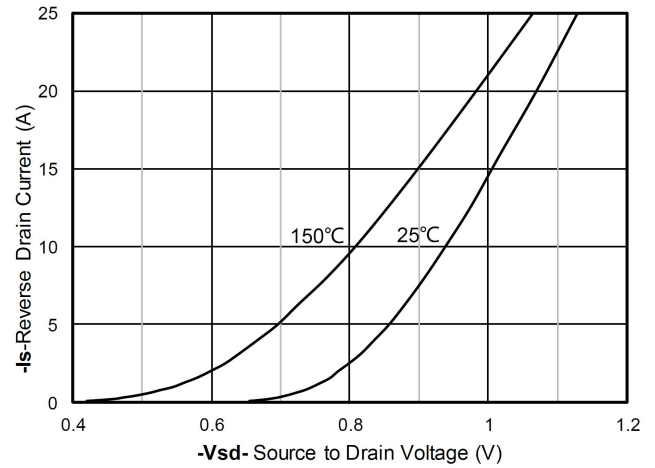
Current dissipation



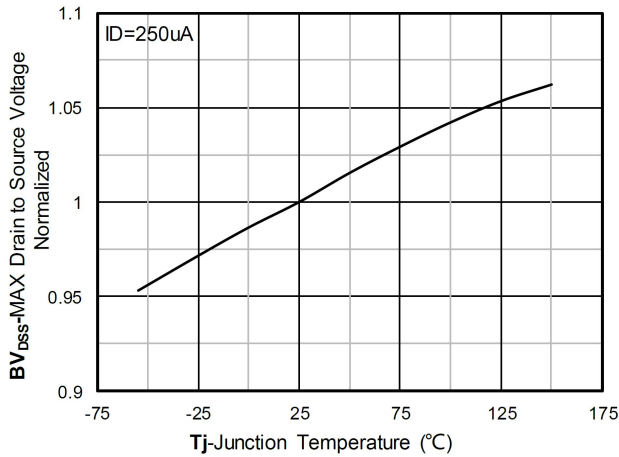
Power dissipation



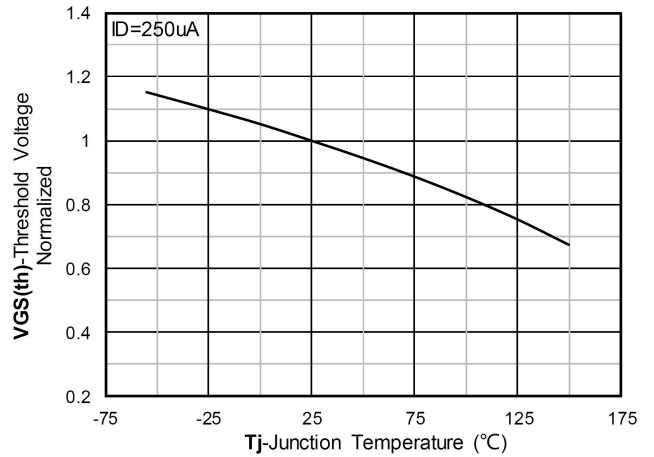
RDS(on) VS Drain Current



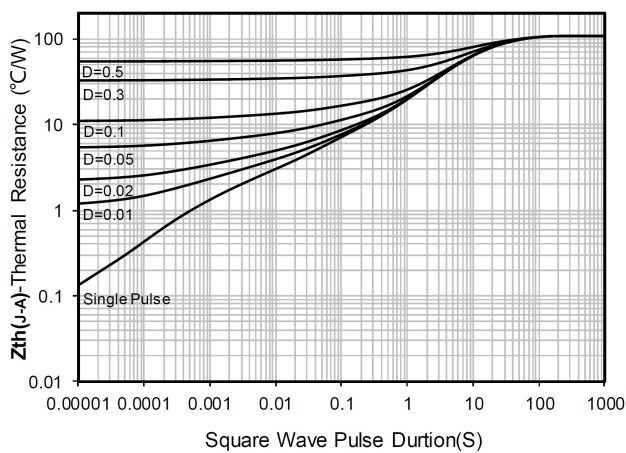
Forward characteristics of reverse diode



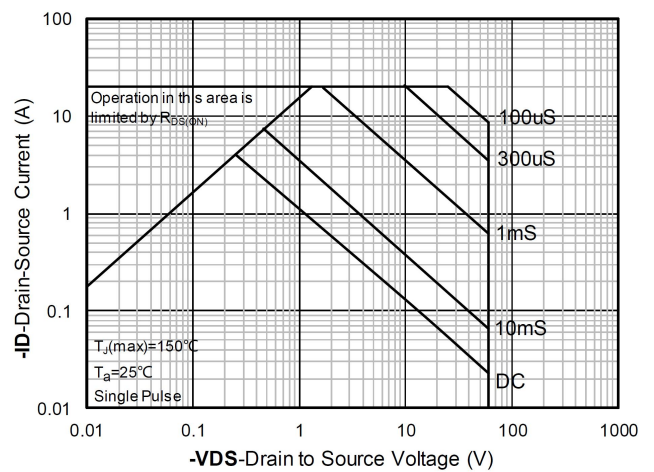
Normalized breakdown voltage



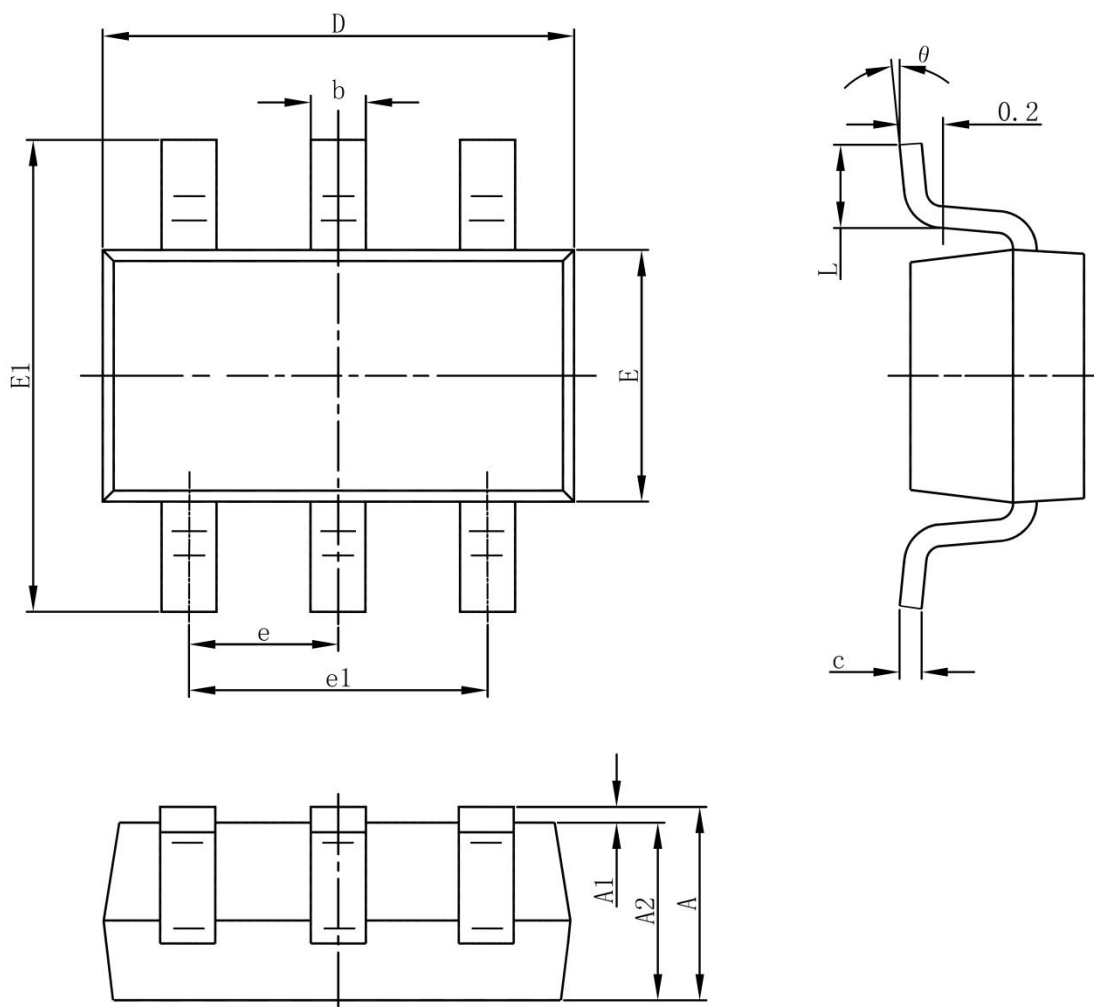
Normalized Threshold voltage



Maximum Transient Thermal Impedance



Safe Operation Area

SOT-23-6L Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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