2SK3541

60V N-Channel MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	2Ω@10V	100mA
	2.5Ω@4.5V	

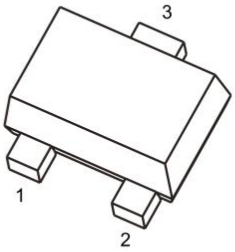
Feature

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

Application

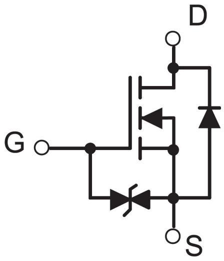
- Battery Switch
- DC/DC Converter

Package

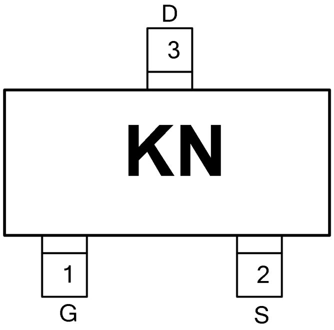


SOT-723

Circuit diagram



Marking



KN :Device Code

Order Information

Device	Package	Unit/Tape
2SK3541	SOT-723	8000

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current	I_D	100	mA
Pulse Drain Current Tested	I_{DM}	400	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

Electrical characteristics (Ta=25℃, 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	I_{DSS}	VDS=48V , VGS=0V	-	-	1	uA
Gate-Source Leakage Current	I_{GSS}	VGS=±20V , VDS=0V	-	-	±10	uA
Gate Threshold Voltage	$V_{GS(th)}$	VDS=VGS , ID=250μA	0.7	1	1.45	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	VGS =10V, ID =500mA	-	2	5	Ω
		VGS =4.5V, ID =200mA	-	2.5	8	
Dynamic characteristics						
Input Capacitance	C_{iss}	VDS=25V , VGS=0V , f=1MHz	-	12	-	pF
Output Capacitance	C_{oss}		-	6	-	
Reverse Transfer Capacitance	C_{rss}		-	2.5	-	
Total Gate Charge	Q_g	VDS=10V , VGS=15V , ID=1A	-	1.34	-	nC
Gate-Source Charge	Q_{gs}		-	0.29	-	
Gate-Drain Charge	Q_{gd}		-	0.2	-	
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	VDD=15V VGS=10V , RG=2.3Ω , ID=1A	-	5	-	nS
Turn-On Rise Time	t_r		-	18	-	
Turn-Off Delay Time	$t_{d(off)}$		-	8	-	
Turn-Off Fall Time	t_f		-	14	-	
Source-Drain Diode characteristics						
Diode Forward Voltage	V_{SD}	VGS=0V , IS=1A , TJ=25℃	-	-	1.2	V

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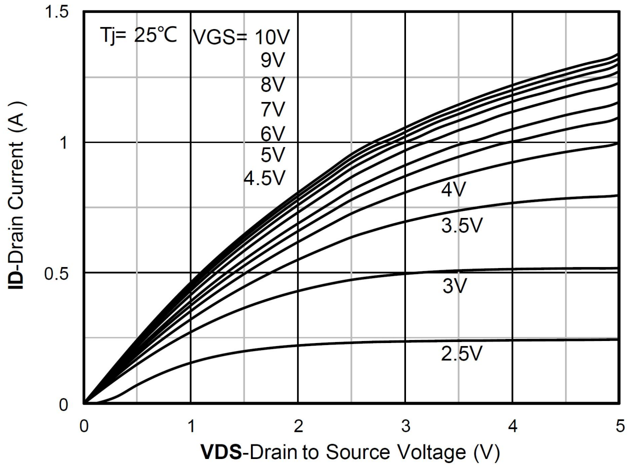
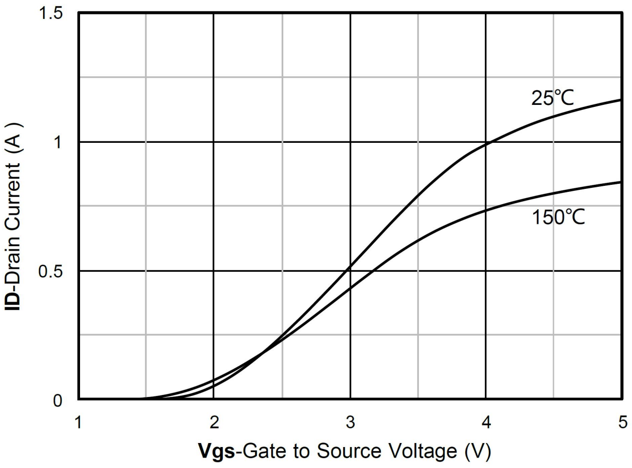
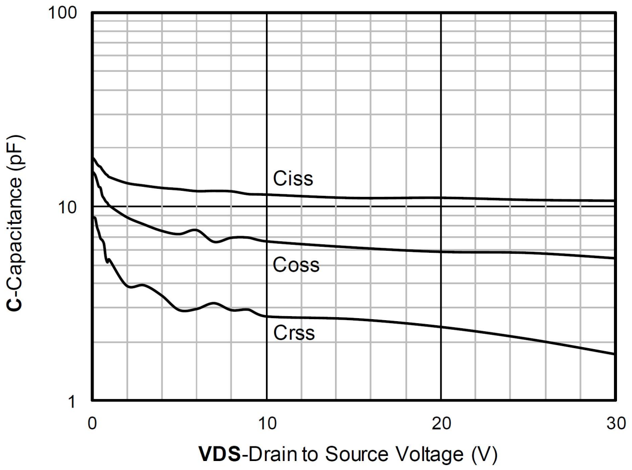
Typical Characteristics



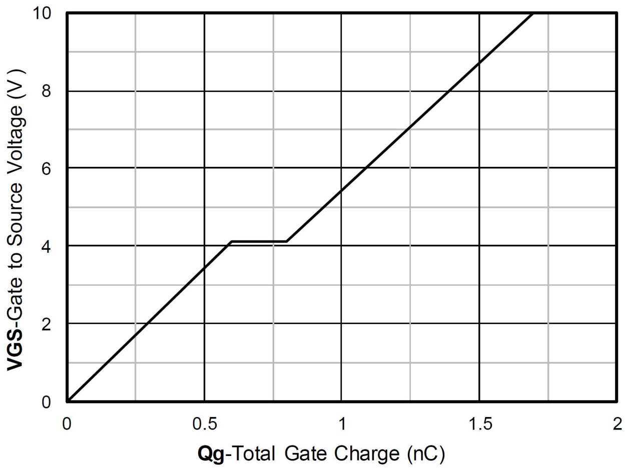
Output Characteristics



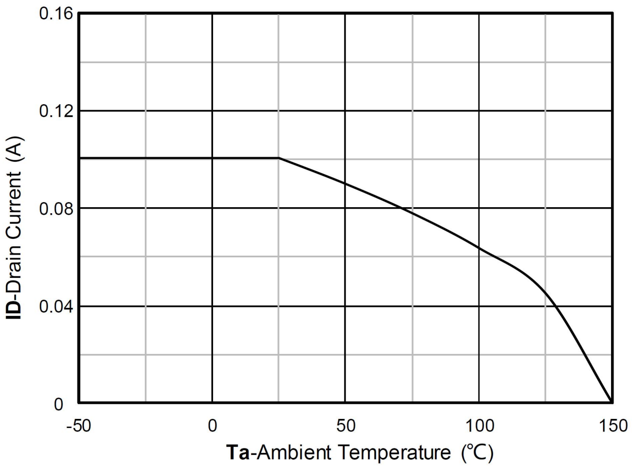
Transfer Characteristics



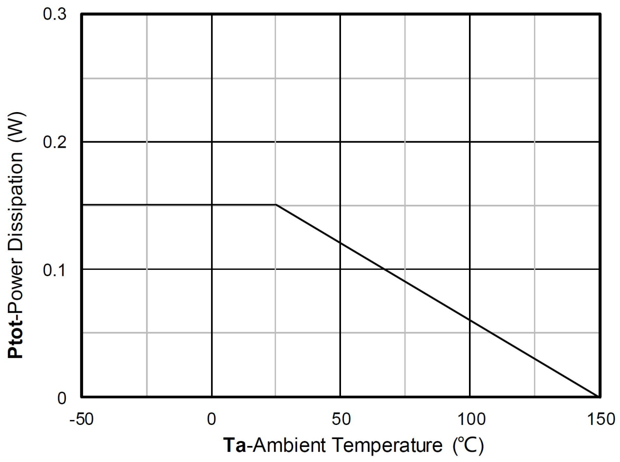
Capacitance Characteristics



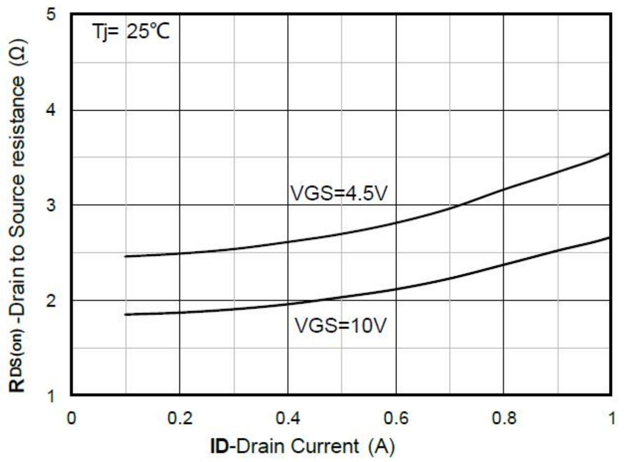
Gate Charge



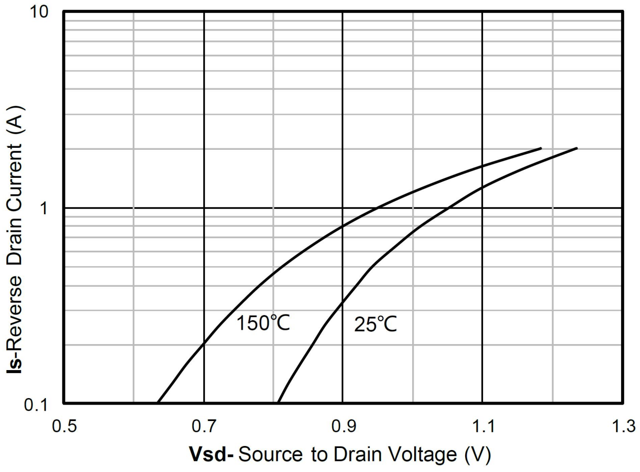
Current dissipation



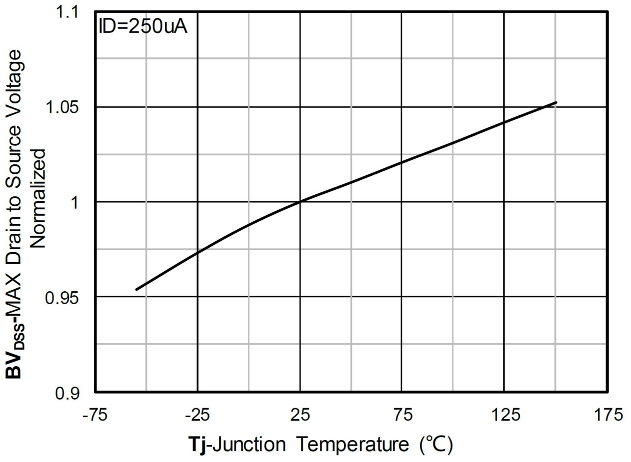
Power dissipation



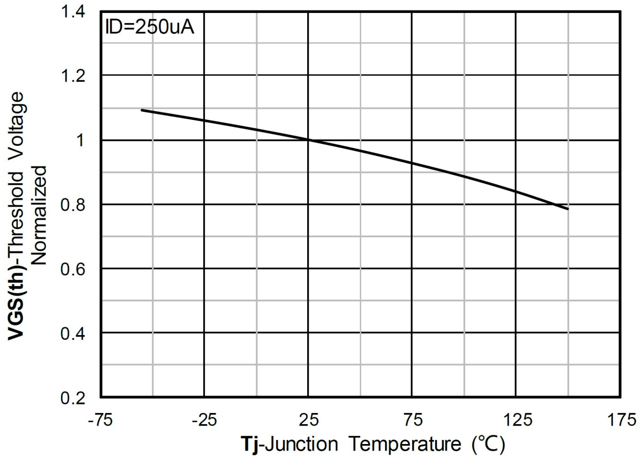
RDS(on) VS Drain Current



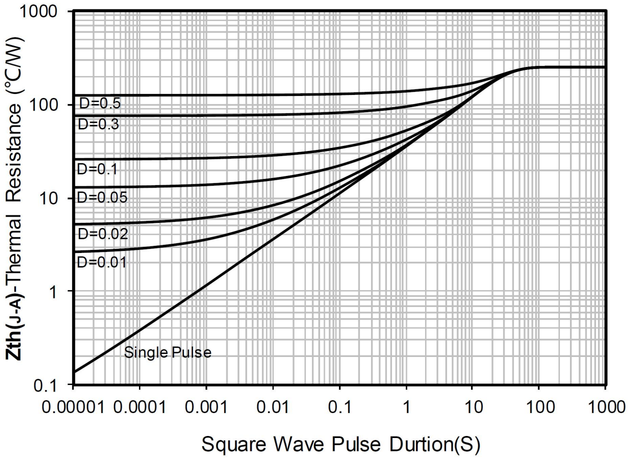
Forward characteristics of reverse diode



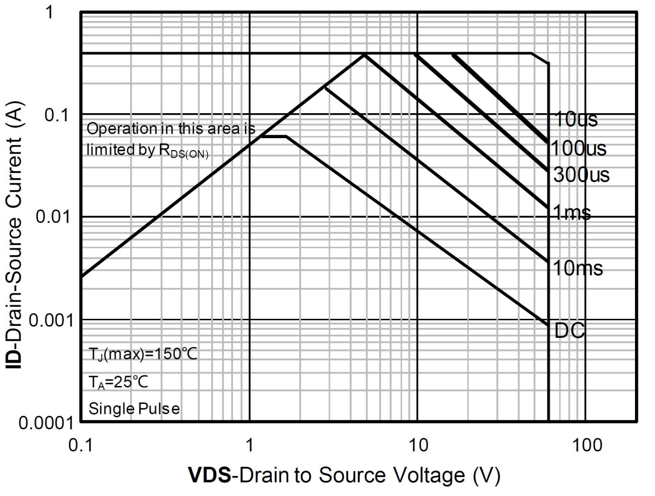
Normalized breakdown voltage



Normalized Threshold voltage

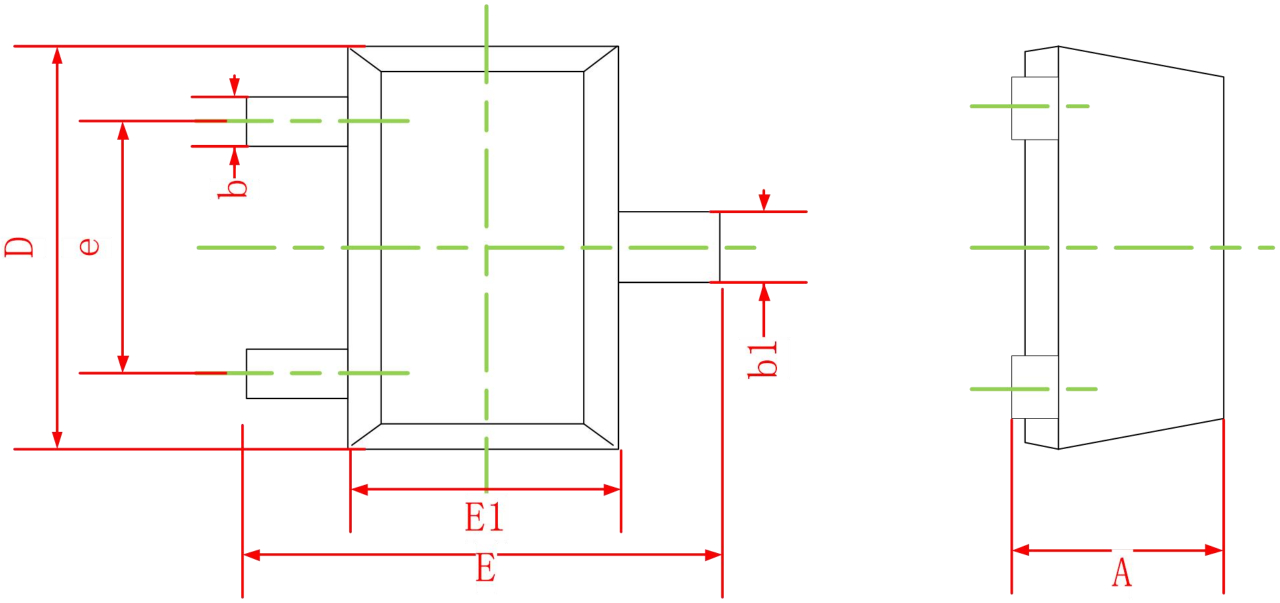


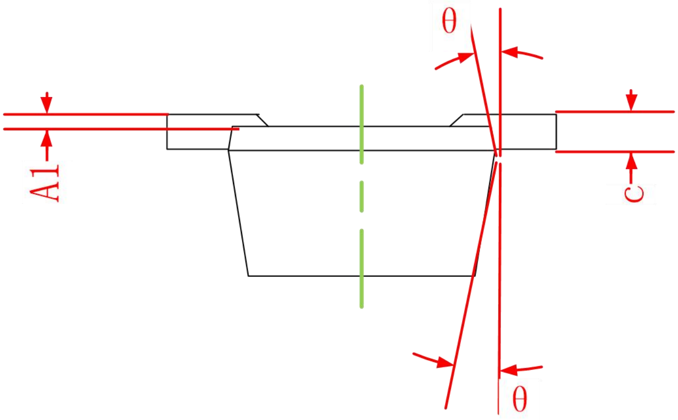
Maximum Transient Thermal Impedance



Safe Operation Area

SOT-723 Package Information





Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.430	0.500
A1	0.000	0.050
b	0.170	0.270
b1	0.270	0.370
c	0.080	0.150
D	1.150	1.250
E	1.150	1.250
E1	0.750	0.850
e	0.800TYP.	
θ	7° REF.	