SP3400T2

30V N-Channel MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	25mΩ@10V	5.8A
	30mΩ@4.5V	
	40mΩ@2.5V	

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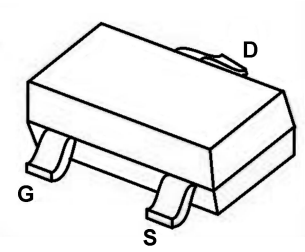
Feature

- High power and current handing capability
- Surface mount package

Application

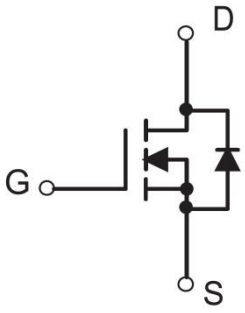
- Battery Switch
- DC/DC Converter

Package

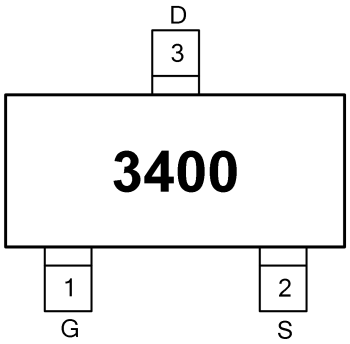


SOT-23

Circuit diagram



Marking



3400 **:Device Code**

Order Information

Device	Package	Unit/Tape
SP3400T2	SOT-23	3000

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

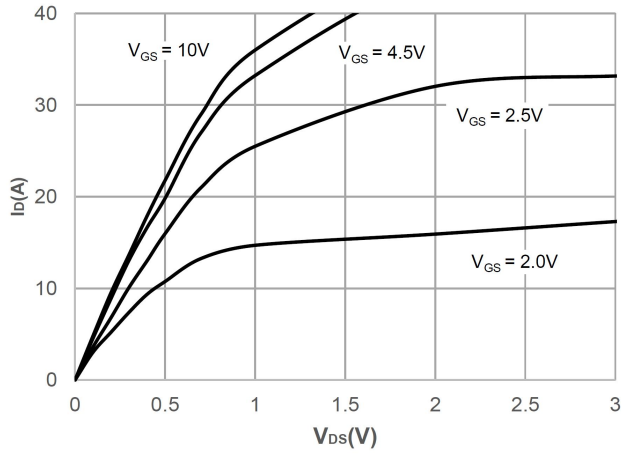
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	±12	V
Continuous Drain Current	I_D	5.8	A
Pulse Drain Current Tested	I_{DM}	23.2	A
Power Dissipation	P_D	1.3	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	96	°C/W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

Electrical characteristics (Ta=25℃, unless otherwise noted)

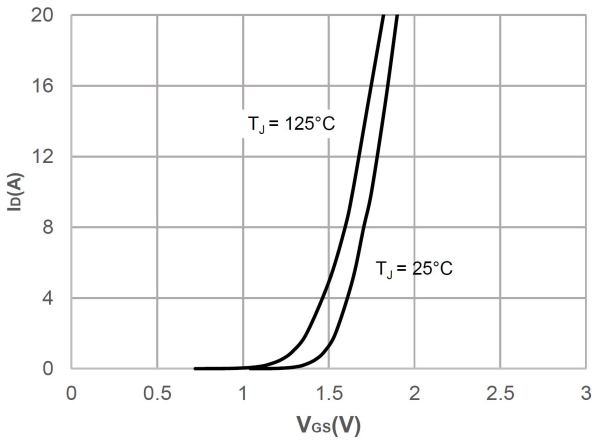
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	VGS=0V , ID=250μA	30	-	-	V
Drain-Source Leakage Current	I_{DSS}	VDS=24V , VGS=0V	-	-	1	uA
Gate-Source Leakage Current	I_{GSS}	VGS=±12V , VDS=0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	VDS=VGS , ID=250μA	0.6	0.95	1.3	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	VGS=10V , ID =5.8A	-	25	35	mΩ
		VGS=4.5V , ID =5A	-	30	40	
		VGS=2.5V , ID =4A	-	40	50	
Dynamic characteristics						
Input Capacitance	C_{iss}	VDS=15V , VGS=0V , f=1MHz	-	765	-	pF
Output Capacitance	C_{oss}		-	68	-	
Reverse Transfer Capacitance	C_{rss}		-	53	-	
Total Gate Charge	Q_g	VDS=15V , VGS=10V , ID=3A	-	18	-	nC
Gate-Source Charge	Q_{gs}		-	3	-	
Gate-Drain Charge	Q_{gd}		-	2.2	-	
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	VDD=15V VGS=10V , RG=3Ω , ID=3A	-	5	-	nS
Turn-On Rise Time	t_r		-	11	-	
Turn-Off Delay Time	$t_{d(off)}$		-	25	-	
Turn-Off Fall Time	t_f		-	3	-	
Source-Drain Diode characteristics						
Diode Forward Voltage	V_{SD}	VGS=0V , IS=1A , TJ=25℃	-	-	1.2	V

.

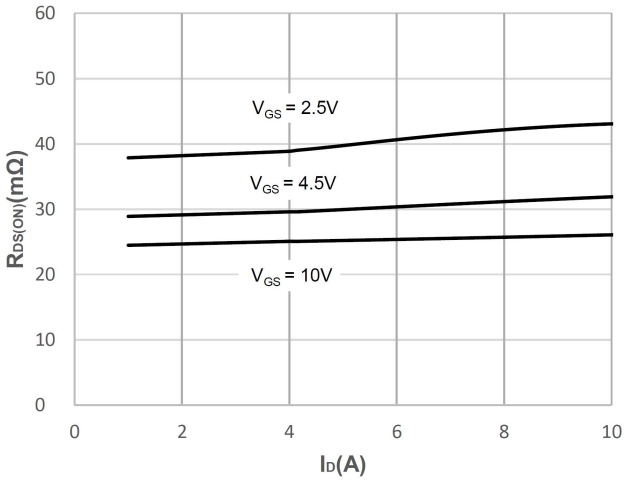
Typical Characteristics



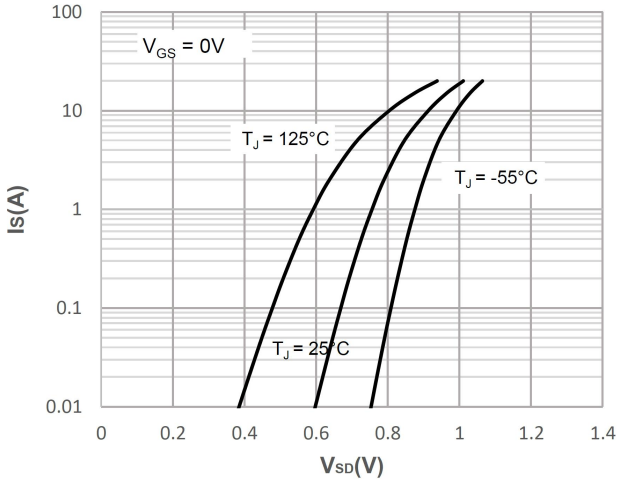
Output Characteristics



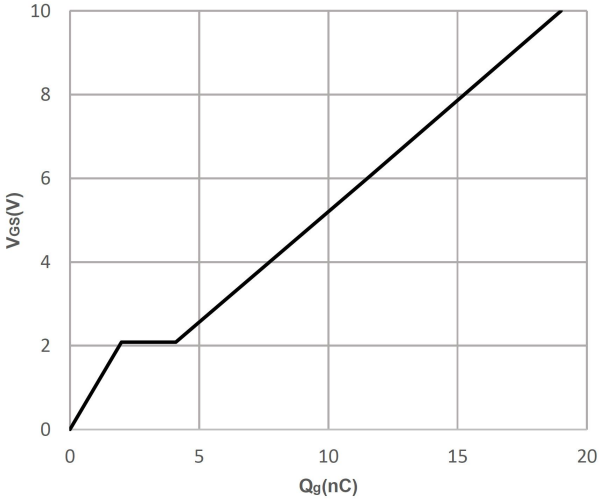
Typical Transfer Characteristics



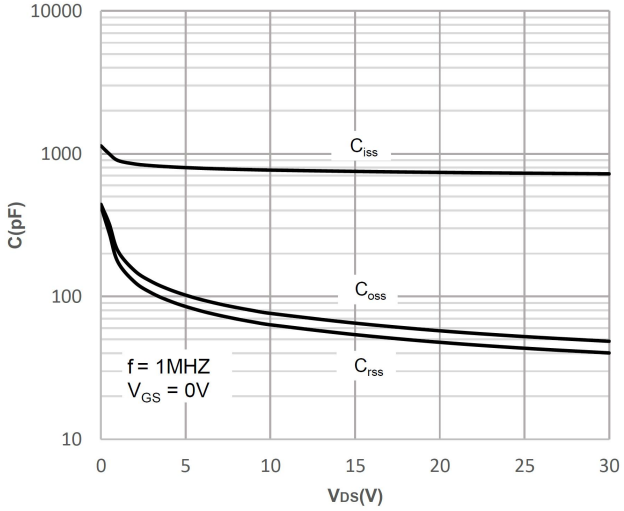
On-resistance vs. Drain Current



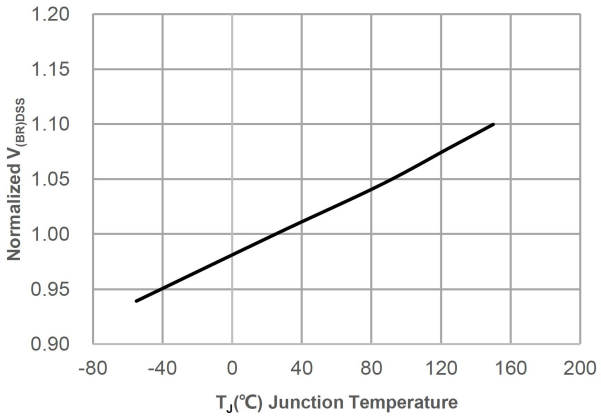
Body Diode Characteristics



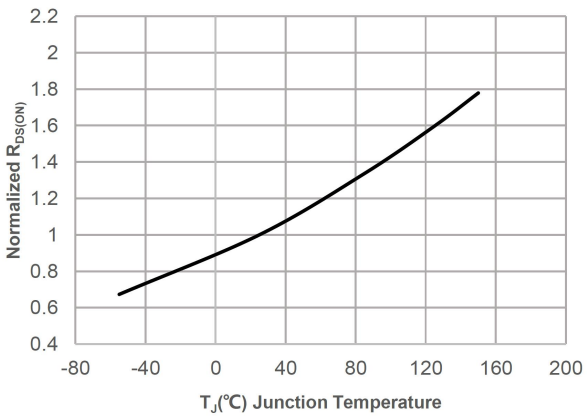
Gate Charge Characteristics



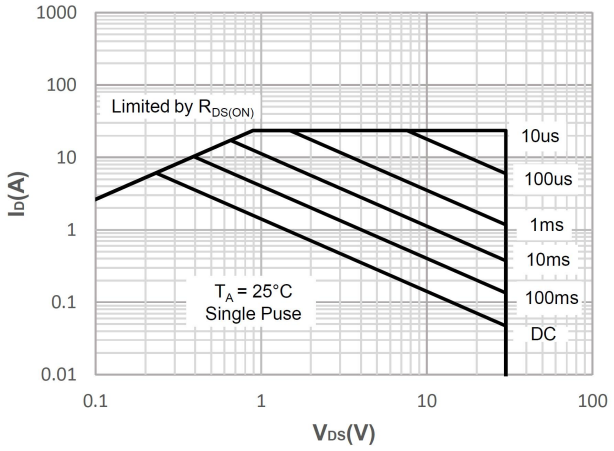
Capacitance Characteristics



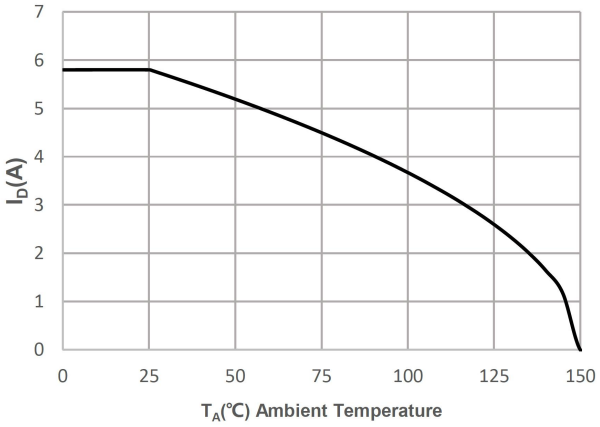
Normalized Breakdown voltage vs. Junction Temperature



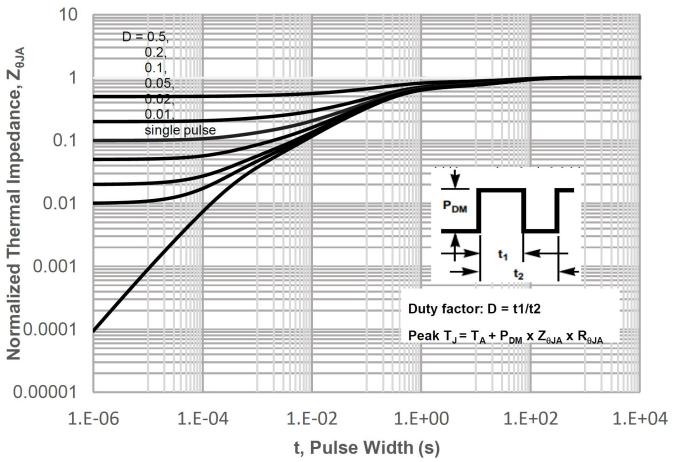
Normalized on Resistance vs. Junction Temperature



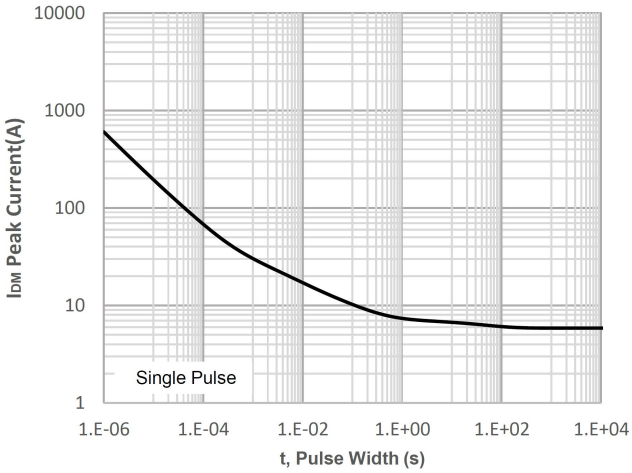
Maximum Safe Operating Area



Maximum Continuous Drian Current vs. Ambient Temperature

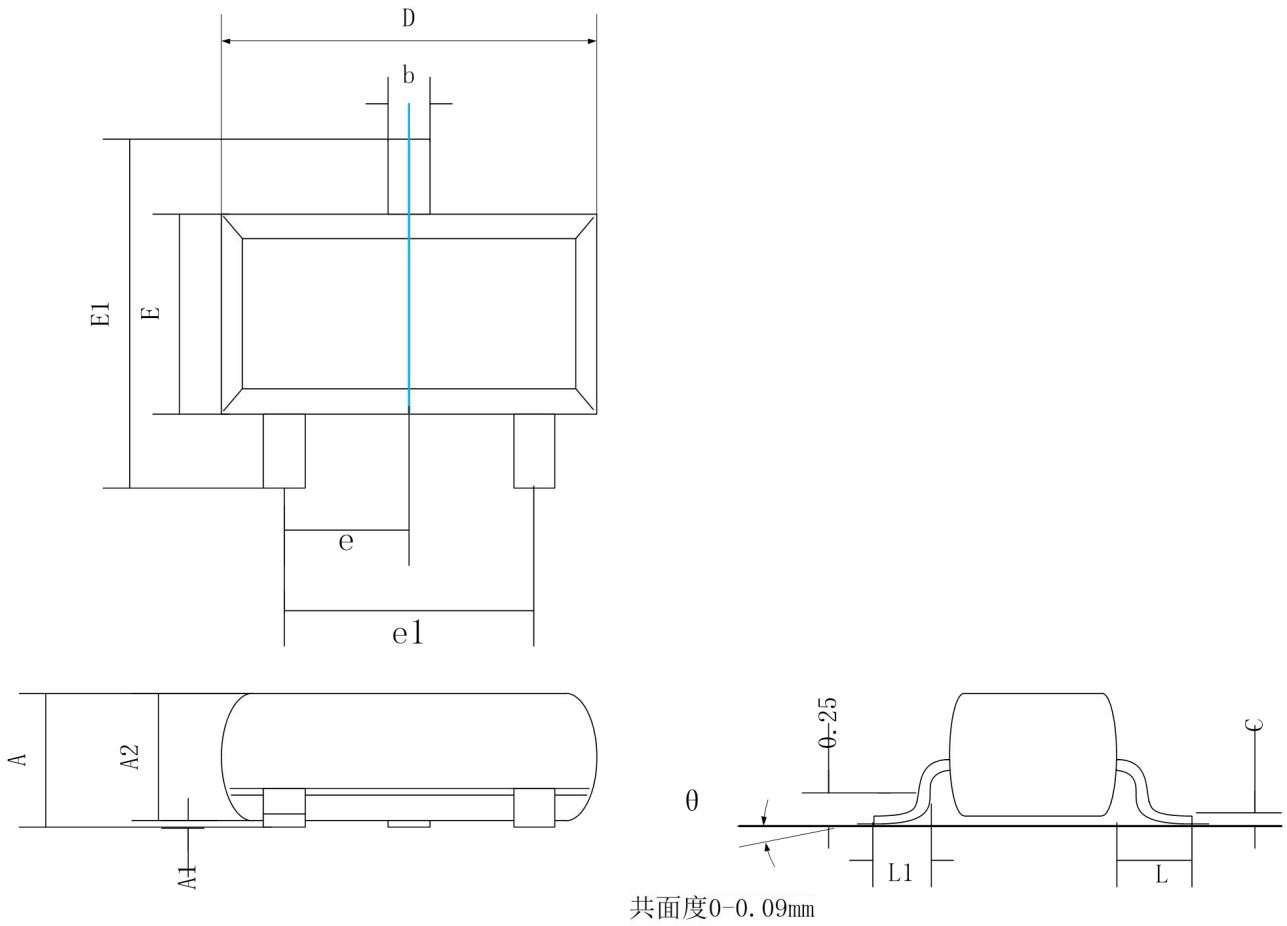


Normalized Maximum Transient Thermal Impedance



Peak Current Capacity

SOT-23 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50
θ	0°	8°

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