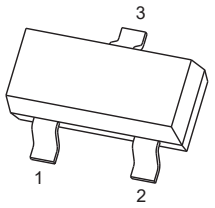
GP3400

30V N-Channel MOSFET

Product Summary

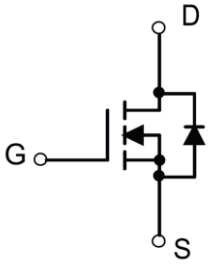
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	22mΩ@10V	5.8A
	23mΩ@4.5V	
	28mΩ@2.5V	

SOT-23



1. GATE
2. SOURCE
3. DRAIN

Schematic diagram



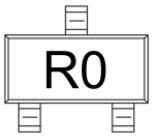
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge

Application

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

MARKING:



ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	5.8	A
Pulsed Drain Current[1]	I_{DM}	30	A
Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction to Ambient[2]	$R_{\theta JA}$	90	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_A=25℃ unless otherwise noted)

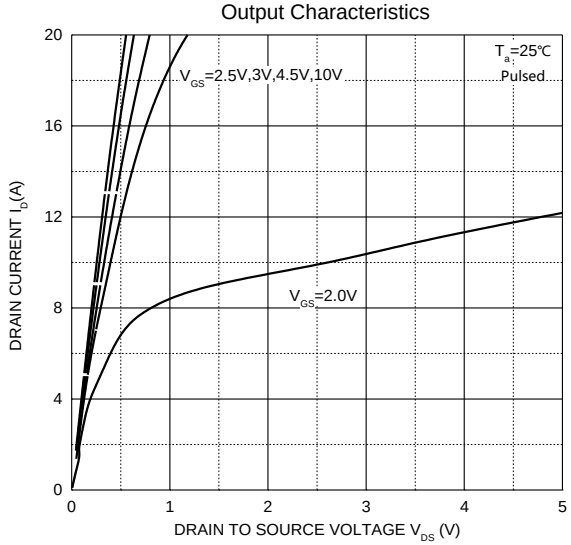
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =24V,V_{GS} = 0V			1	μA
Gate - Body Leakage Current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.7	1.0	1.5	V
Drain-source On-resistance(3)	$R_{DS(on)}$	V_{GS} =10V, I_D =5.8A		22	35	mΩ
		V_{GS} =4.5V, I_D =5A		23	40	
		V_{GS} =2.5V, I_D =4A		28	52	
Forward Tranconductance	g_{FS}	V_{DS} =5V, I_D =5A	8			S
Dynamic Characteristics(4)						
Input Capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V,f =1MHz			1050	pF
Output Capacitance	C_{oss}			99		
Reverse Transfer Capacitance	C_{rss}			77		
Gate Resistance	R_g	V_{DS} =0V,V_{GS} =0V, f =1MHz			3.6	Ω
Switching Characteristics(4)						
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=10V,V_{DS}=15V, R_L=2.7Ω,R_{GEN}=3Ω			5	ns
Turn-on Rise Time	t_r				7	
Turn-off Delay Time	$t_{d(off)}$				40	
Turn-off Fall Time	t_f				6	
Source-Drain Diode characteristics						
Diode Forward Voltage(3)	V_{DS}	V_{GS} =0V, I_S=1A			1	V

Note :

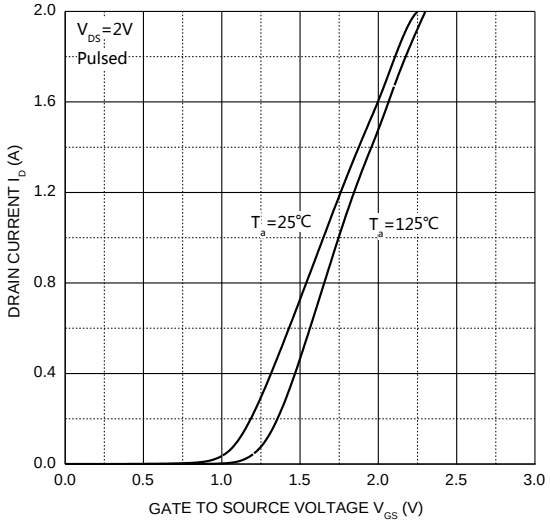
1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics

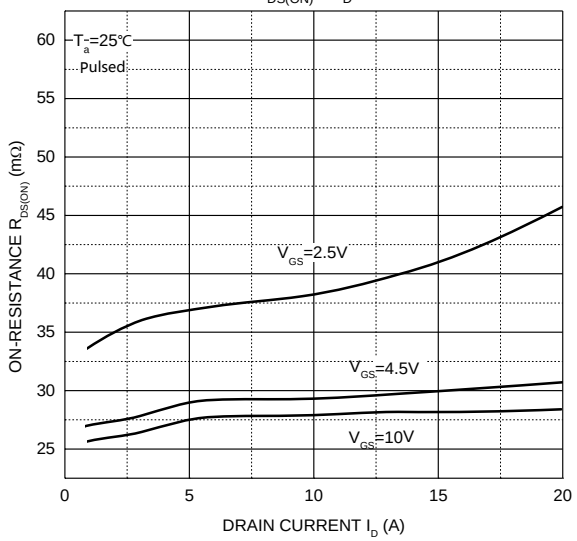
Output Characteristics



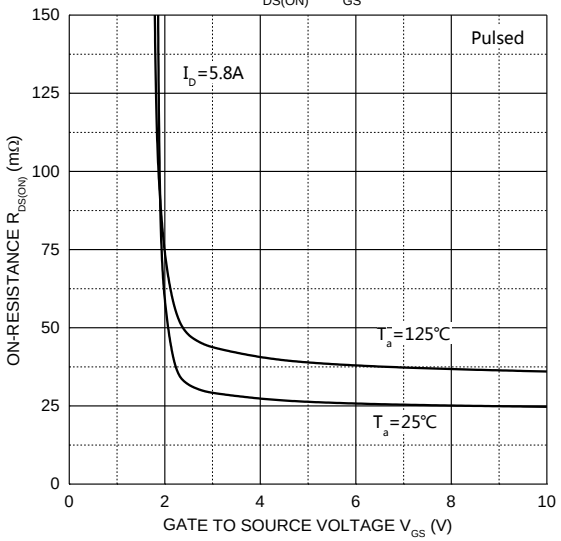
Transfer Characteristics



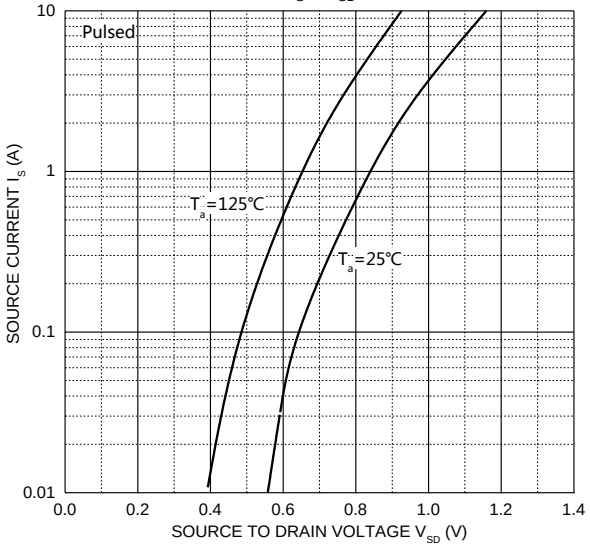
$R_{DS(ON)}$ – I_D



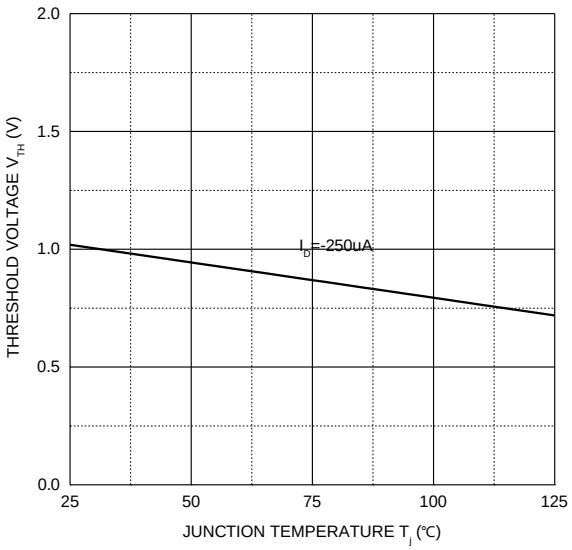
$R_{DS(ON)}$ - V_{GS}



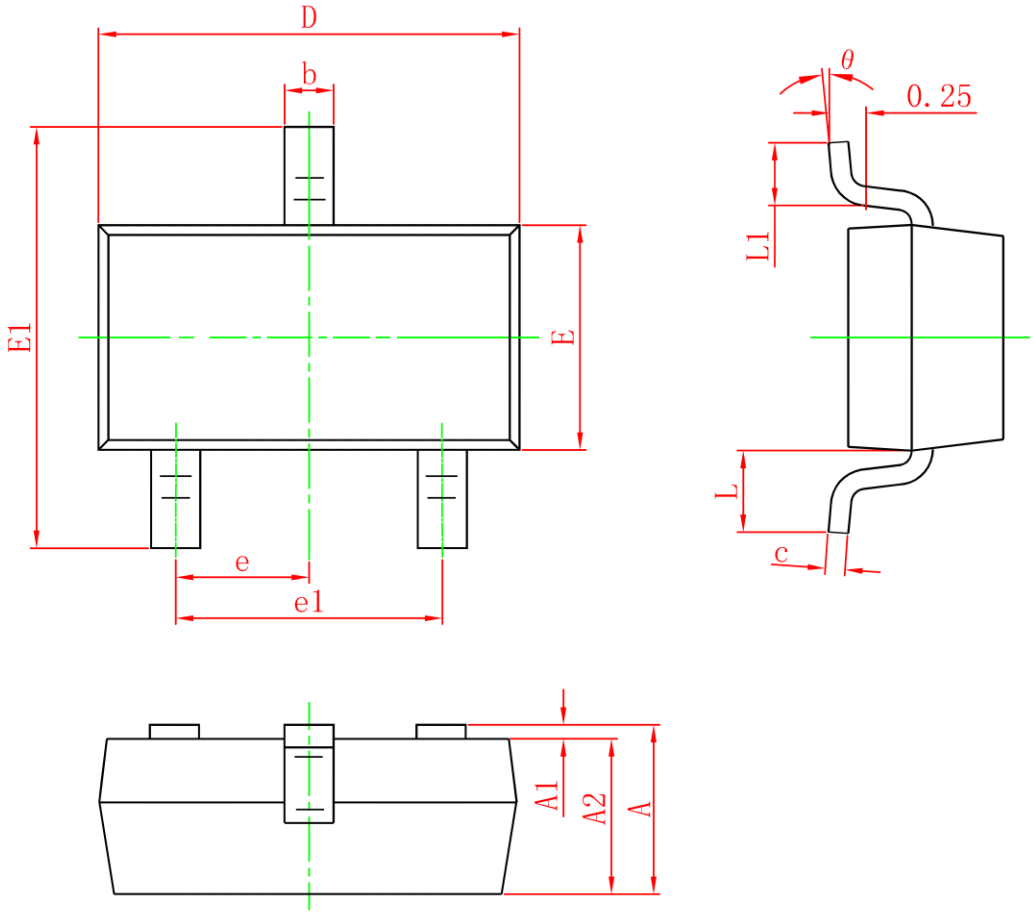
I_S - V_{SD}



Threshold Voltage



SOT-23 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0	0.100	0	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.150	1.500	0.045	0.059
E1	2.250	2.650	0.089	0.104
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°