

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	20mΩ@10V	6.5A
	25mΩ@4.5V	

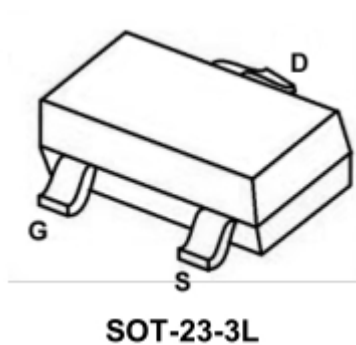
Feature

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

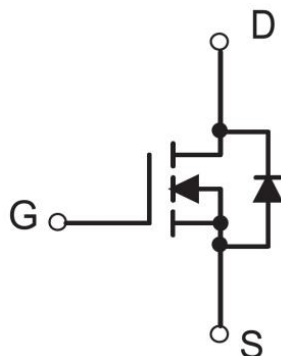
Application

- DC-DC Converter
- Ideal for high-frequency switching and synchronous rectification
- Battery Switch

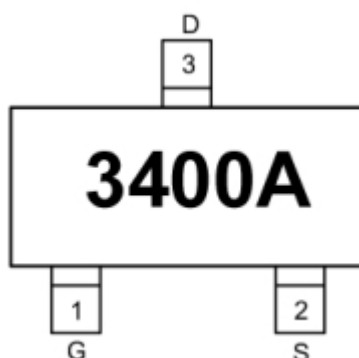
Package



Circuit diagram



Marking



Absolute maximum ratings

($T_a=25^{\circ}\text{C}$ 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	6.5	A
Pulsed Drain Current ¹⁾	I_{DM}	26	A
Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction to Ambient ²⁾	$R_{\theta JA}$	89.3	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

Electrical characteristics

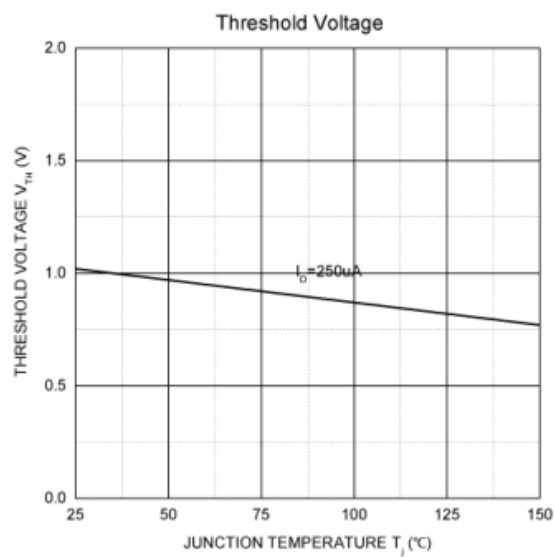
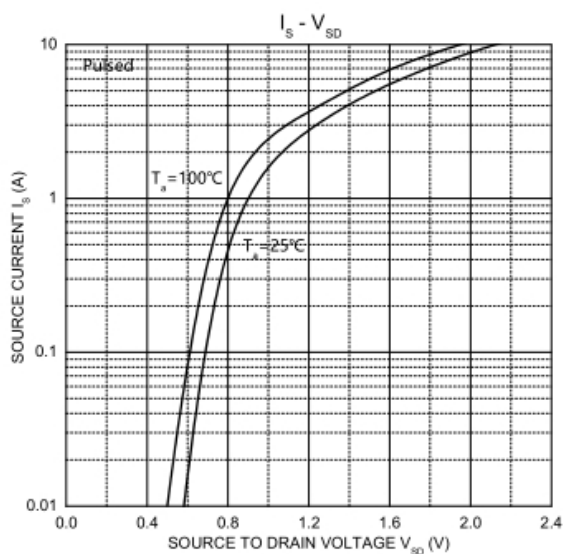
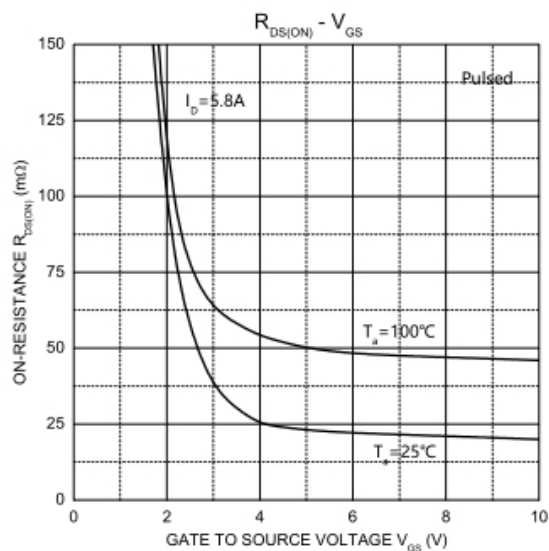
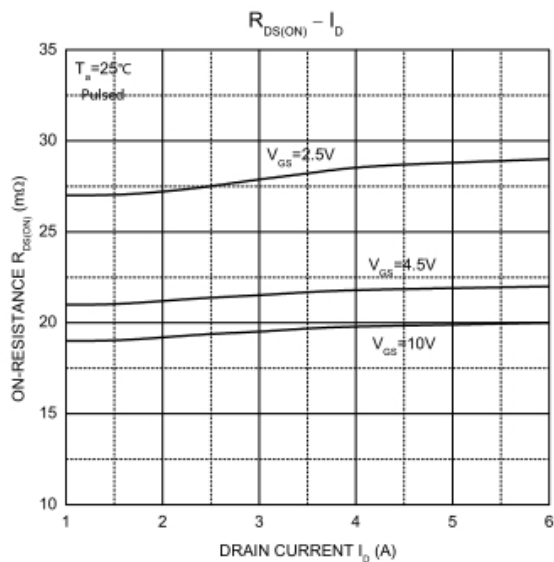
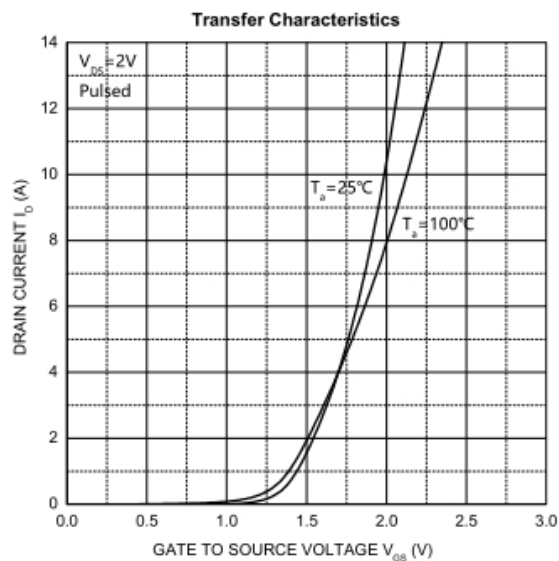
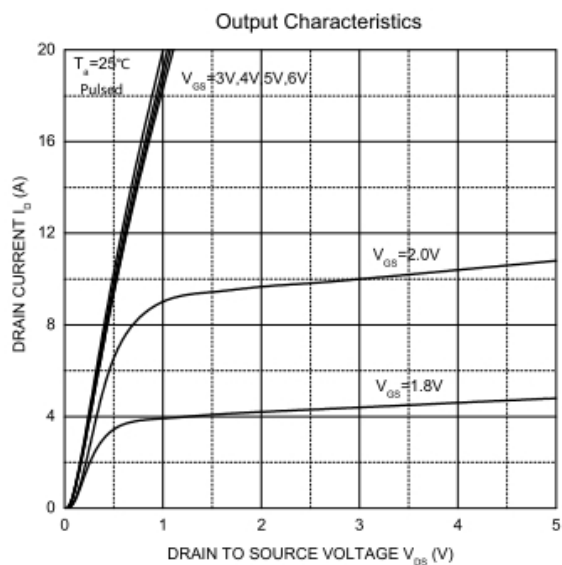
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV (BR)DSS	V _{GS} = 0V, I _D =250μA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =24V, V _{GS} = 0V			1	uA
Gate-body leakage current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±0.1	uA
Gate threshold voltage ⁽¹⁾	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.5	0.9	1.4	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =5.8A		20	27	mΩ
		V _{GS} =4.5V, I _D =5A		25	32	
		V _{GS} =2.5V, I _D =4A			48	
Dynamic Characteristics ⁴⁾						
Input capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHz		850		pF
Output capacitance	C _{oss}			108		
Reverse transfer capacitance	C _{rss}			84		
Switching Characteristics ⁴⁾						
Total gate charge	Q _g	V _{DS} =15V, V _{GS} =4.5V, I _D =5A		9.5		nC
Gate-source charge	Q _{gs}			1.5		
Gate-drain charge	Q _{gd}			3		
Turn-on Delay Time	T _{d(on)}	V _{DD} =10V, V _{GS} =15V , R _L =2.7Ω, R _{GEN} = 3 Ω		3.5		nS
Turn-on Rise Time	T _r			5		
Turn-Off Delay Time	T _{d(off)}			25		
Turn-Off Fall Time	t _f			5		
Source-Drain Diode characteristics						
Diode Forward voltage ³⁾	V _{SD}	V _{GS} =0V, I _S =1A			1.2	V

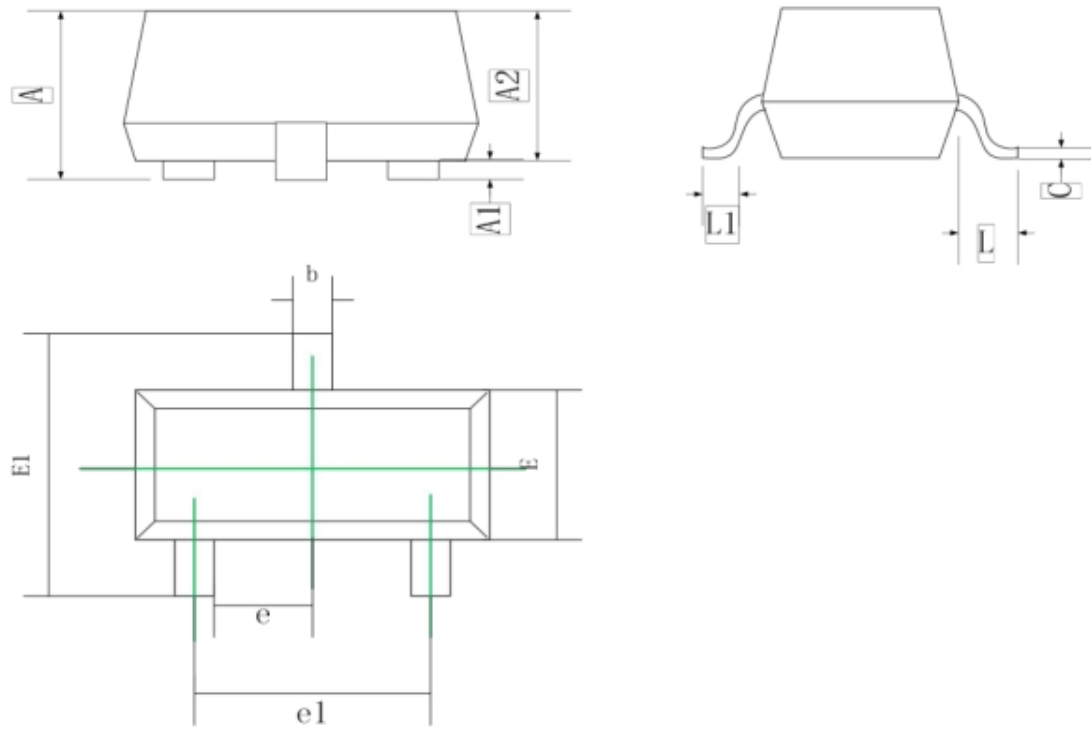
Note :

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

Typical Characteristics



SOT-23-3L Package Information



Symbol	Dimensions in millimeters	
	Min.	Max.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E	1.500	1.700
E1	2.650	2.950
e	0.950 Typ.	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°