

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	13m Ω @10V	7A
	22m Ω @2.5V	

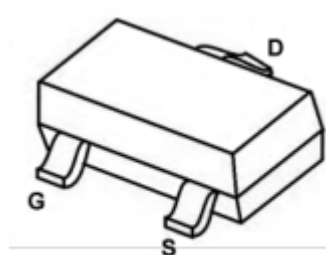
Feature

- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on- resistance and maximum DC current capability
- ESD Protected:2KV

Application

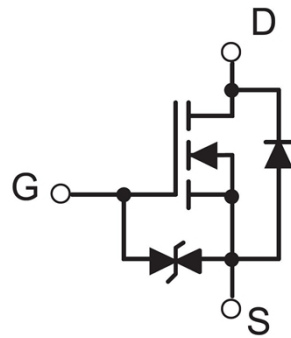
- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

Package

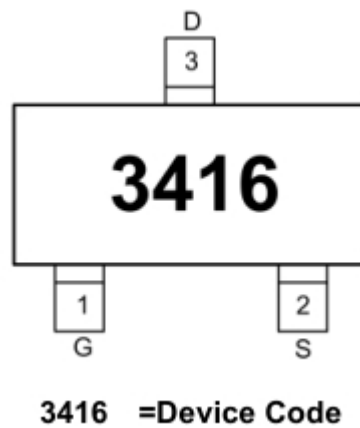


SOT-23

Circuit diagram



Marking



Absolute maximum ratings

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	7	A
Pulsed Drain Current	I_{DM}	30	A
Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

Electrical characteristics

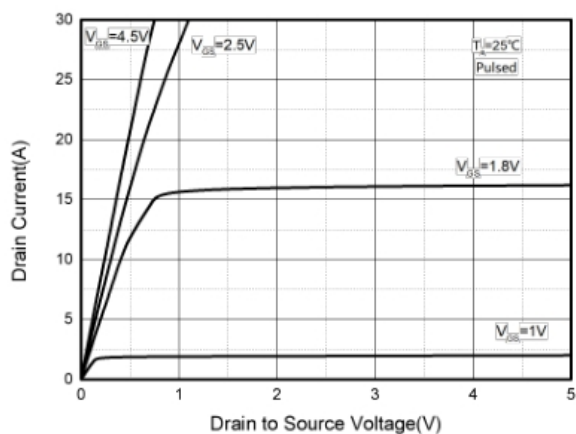
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV (BR)DSS	V _{GS} = 0V, I _D =250μA	20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V, V _{GS} = 0V			1	uA
Gate-body leakage current	I _{GSS}	V _{GS} =±10V, V _{DS} = 0V			±10	uA
Gate threshold voltage ⁽¹⁾	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.4	0.65	1.1	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =7A		13	18	mΩ
		V _{GS} =2.5V, I _D =4A		22	30	
Dynamic Characteristics ⁴⁾						
Total gate charge	Q _g	V _{GS} =4.5V, V _{DS} =10V, I _D =7A		8.1		nC
Gate-source charge	Q _{gs}			2.4		
Gate-drain charge	Q _{gd}			3		
Input capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHz		980		pF
Output capacitance	C _{oss}			225		
Reverse transfer capacitance	C _{rss}			120		
Switching Characteristics ⁴⁾						
Turn-on Delay Time	T _{d(on)}	V _{GS} =4.5V , V _{DD} =10V, R _L =1.5Ω, R _{GEN} =3Ω		1.2		nS
Turn-on Rise Time	T _r			2.4		
Turn-Off Delay Time	T _{d(off)}			22		
Turn-Off Fall Time	t _f			7		
Source-Drain Diode characteristics						
Diode Forward voltage ³⁾	V _{SD}	V _{GS} =0V, I _S =7A			1.2	V

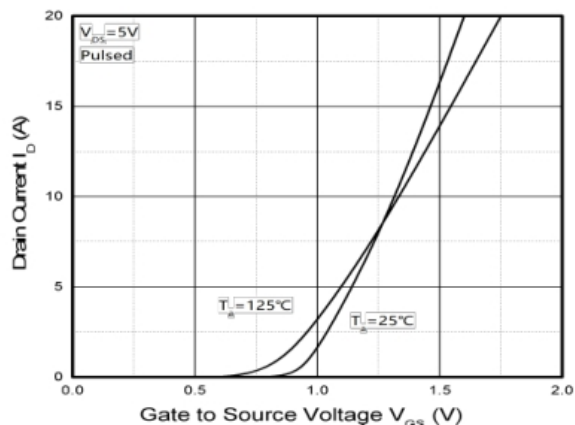
Note :

1. Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
2. These parameters have no way to verify.

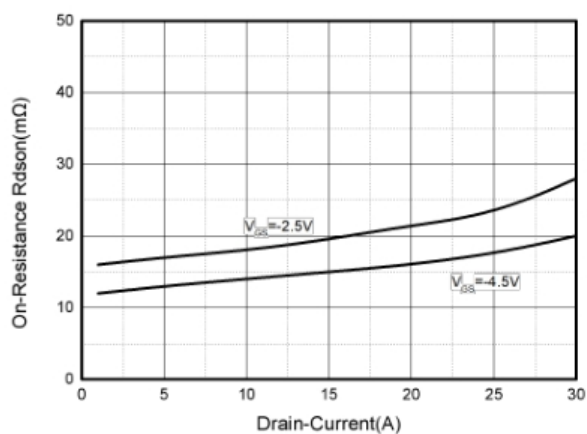
Typical Characteristics



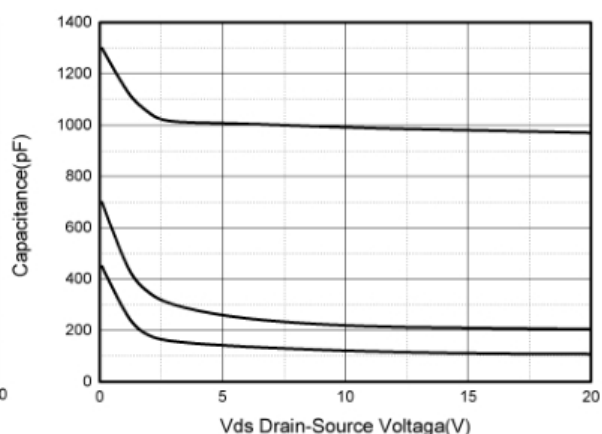
Output Characteristics



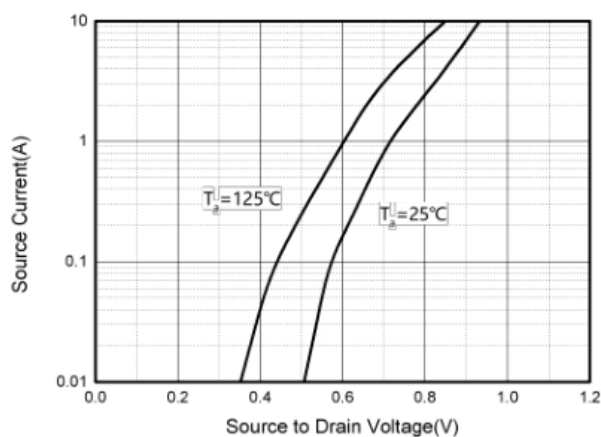
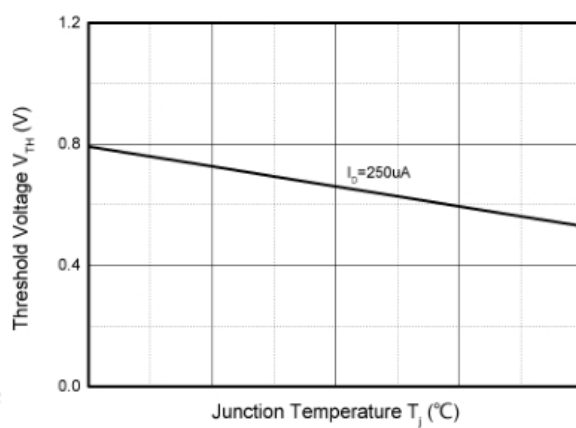
Transfer Characteristics



Drain-Source on Resistance

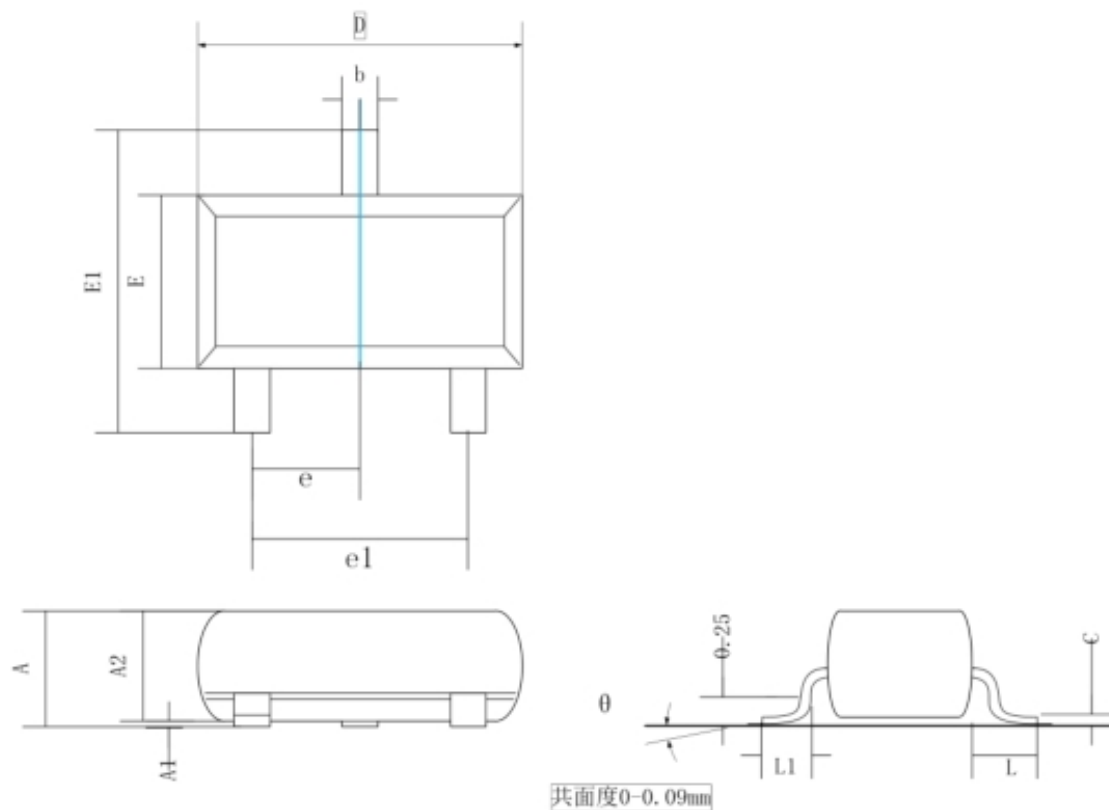


Capacitance Characteristics


 I_S vs V_{SD}


Threshold

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°