Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	45mΩ@-10V	-4.2A
	55mΩ@-4.5V	
	70mΩ@-2.5V	

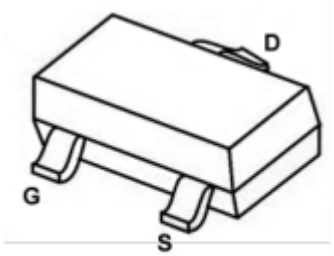
Feature

- V_{DS} = -30V,I_D = -4.2A
  $R_{DS(ON)}$ < 60mΩ @ V_{GS}=-10V
  $R_{DS(ON)}$ < 70mΩ @ V_{GS}=-4.5V
  $R_{DS(ON)}$ < 85mΩ @ V_{GS}=-2.5V
- High power and current handing capability
- Lead free product is acquired
- Surface mount package

Applications

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

Package



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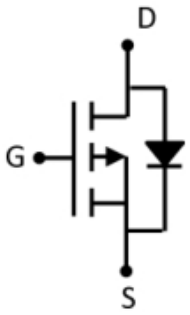
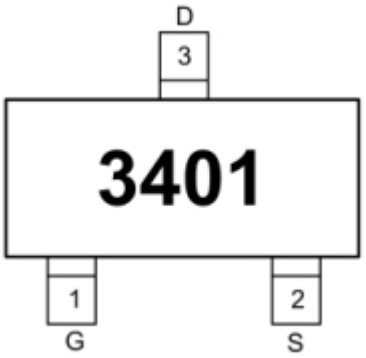
Circuit diagram



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 （T_A=25℃）	I_D	-4.2	A
Continuous Drain Current （T_A=70℃）		-3.6	A
Drain Current-Pulsed	I_{DM}	-30	A
Power Dissipation	P_D	1.2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	104	℃/W
Junction Temperature	T_J	150	
Storage Temperature	T_{STG}	-55~ +150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

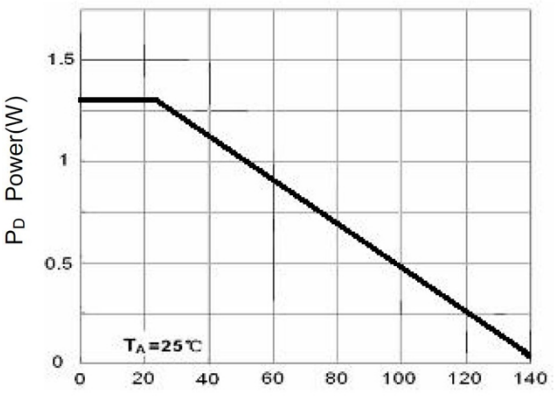
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-24V, V_{GS} = 0V			-1	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±100	uA
Gate threshold voltage (1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.6	-0.9	-1.3	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-4.2A		45	60	mΩ
		V_{GS} =-4.5V, I_D =-4A		55	70	
		V_{GS} =-2.5V, I_D =-1A		70	85	
Forward transconductance[1)]	g_{FS}	VDS =-5V, ID =-4.2A		10		S
Dynamic Characteristics[2)]						
Input capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		880		pF
Output capacitance	C_{oss}			105		
Reverse transfer capacitance	C_{rss}			65		
Switching Characteristics[2)]						
Turn-on Delay Time	$T_{d(on)}$	V_{DD}=-15V, I_D=-4.2A, V_{GS} =-10V, R_{GEN} =6Ω			6.3	nS
Turn-on Rise Time	T_r				3.2	
Turn-Off Delay Time	$T_{d(off)}$				38.2	
Turn-Off Fall Time	t_f				12	
Total Gate Charge	Q_g	V_{DS} =-15V, V_{GS} =-4.2V, I_D=-4.5A		8.5		nC
Gate-Source Charge	Q_{gs}			1.8		
Gate-Drain Charge	Q_{gd}			2.7		
Source-Drain Diode Characteristics						
Continuous Source Current	I_S	V_G=V_D=0V , Force Current			-4.2	A
Diode Forward voltage	V_{DS}	I_S=-4.2A, V_{GS} = 0V			-1.2	V

Notes:

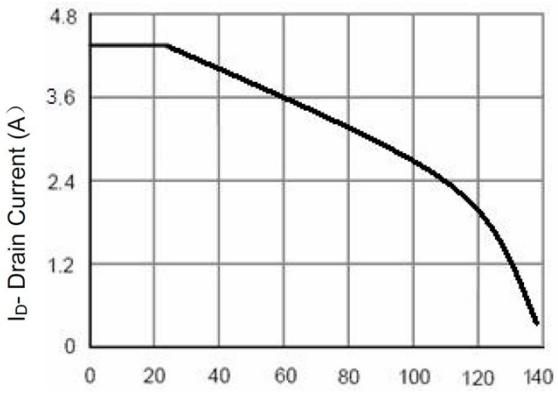
1. Pulse test: pulse width≤300μs, duty cycle≤2%.

2. Guaranteed by design, not subject to production testing.

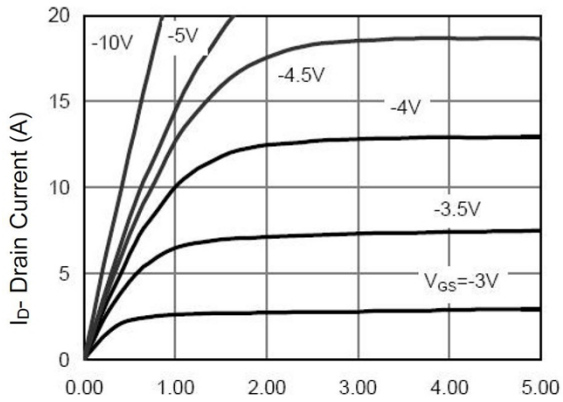
Typical Characteristics



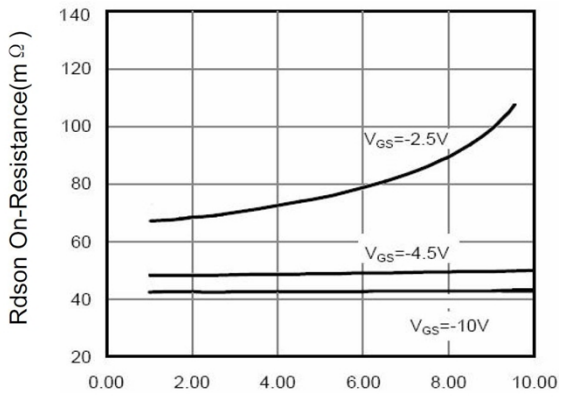
Power Dissipation



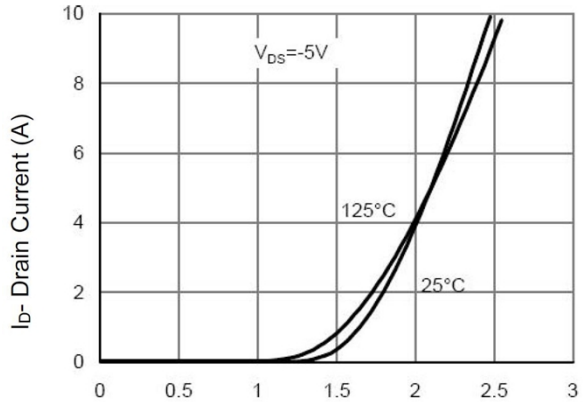
Drain Current



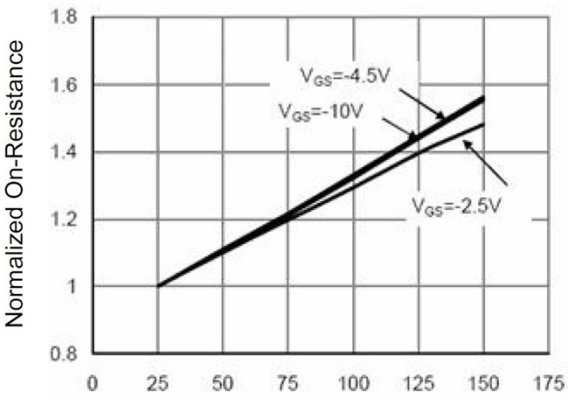
Output Characteristics



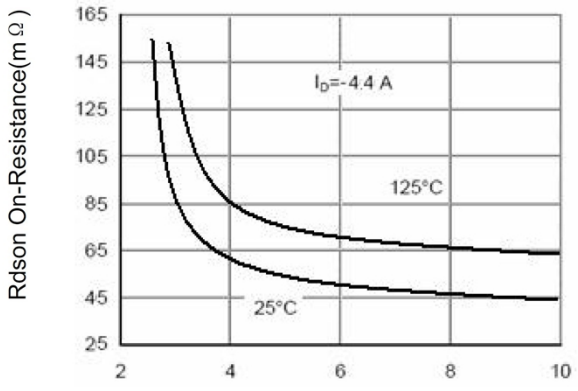
Drain-Source On-Resistance



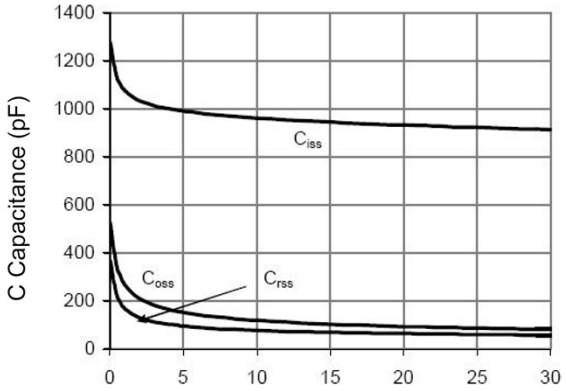
Transfer Characteristics



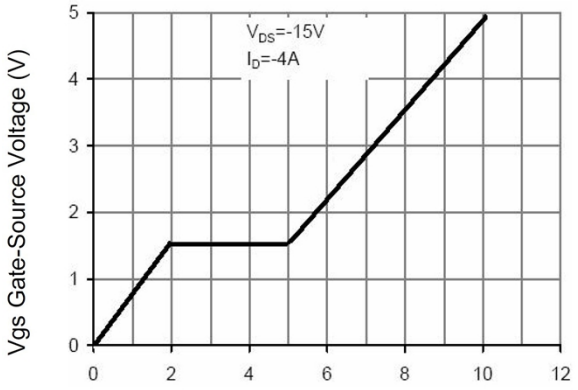
Drain-Source On-Resistance



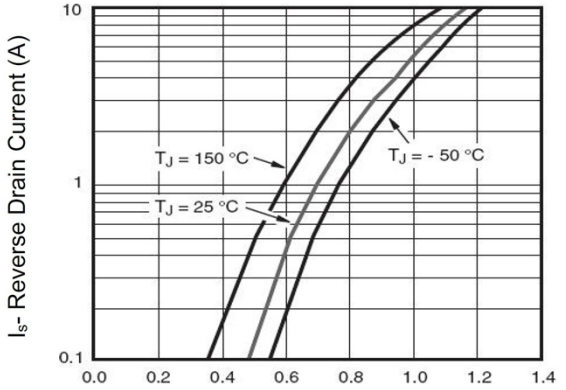
Rdson vs Vgs



Capacitance vs Vds

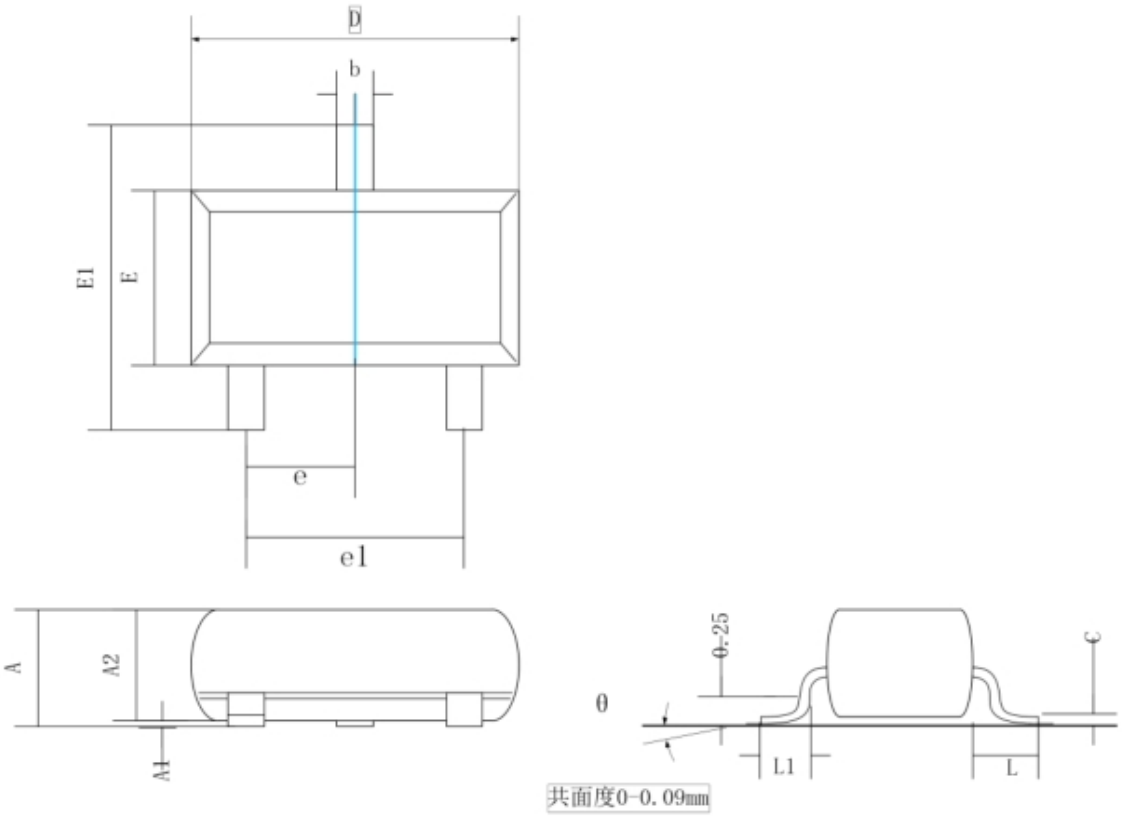


Gate Charge



Source- Drain Diode Forward

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°