Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	41mΩ@-10V	-5.5A
	49mΩ@-4.5V	

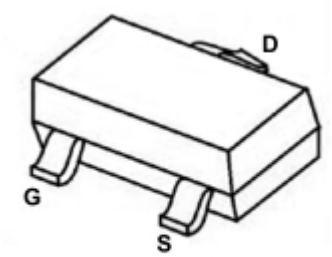
Feature

- V_{DS} = -30V,I_D = -5.5A
  $R_{DS(ON)}$ < 55mΩ @ V_{GS}=-10V
  $R_{DS(ON)}$ < 65mΩ @ V_{GS}=-4.5V
- High power and current handing capability
- Lead free product is acquired
- Surface mount package

Applications

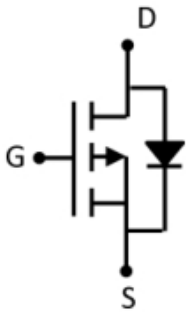
- PWM applications
- Load switch
- Power management

Package

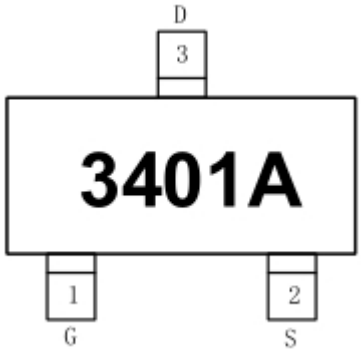


SOT-23-3L

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
Drain Current-Continuous	I_D	-5.5	A
Drain Current-Pulsed (1)	I_{DM}	-22	A
Maximum Power Dissipation	P_D	1.3	W
Thermal Resistance,Junction-to-Ambient (2)	$R_{\theta JA}$	96	℃/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 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	-1.4	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-4.2A		41	55	mΩ
		V_{GS} =-4.5V, I_D =-4A		49	65	
		V_{GS} =-2.5V, I_D =-2A		70	85	
Dynamic Characteristics (4)						
Input capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		680		pF
Output capacitance	C_{oss}			105		
Reverse transfer capacitance	C_{rss}			68		
Switching Characteristics (4)						
Turn-on Delay Time	$T_{d(on)}$	V_{DD}=-15V, I_D=-1A, R_L =1.5Ω, V_{GS} =-10V, R_{GEN} =2.5Ω		5		nS
Turn-on Rise Time	T_r			6		
Turn-Off Delay Time	$T_{d(off)}$			28		
Turn-Off Fall Time	t_f			7		
Total Gate Charge	Q_g	V_{DS} =-15V, V_{GS} =-4.2V, I_D=-10A		10		nC
Gate-Source Charge	Q_{gs}			2		
Gate-Drain Charge	Q_{gd}			3		
Source-Drain Diode Characteristics						
Diode Forward Voltage	V_{DS}	I_S=-1A, V_{GS} = 0V			-1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production

Typical Characteristics

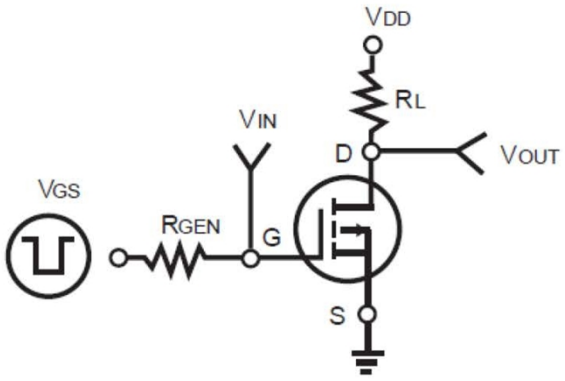


Figure1. Power Dissipation

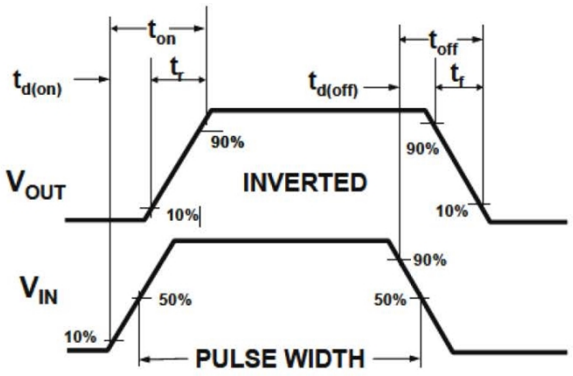
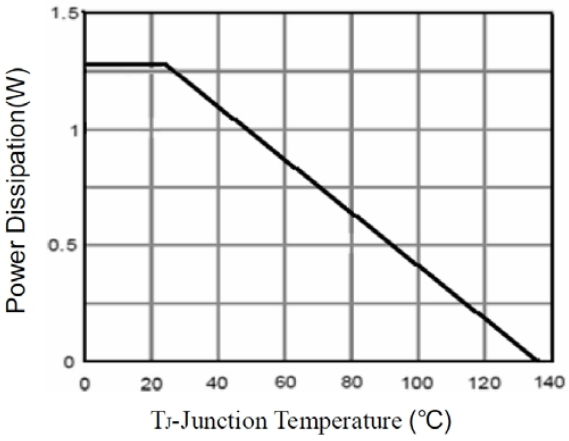


Figure2. Drain Current



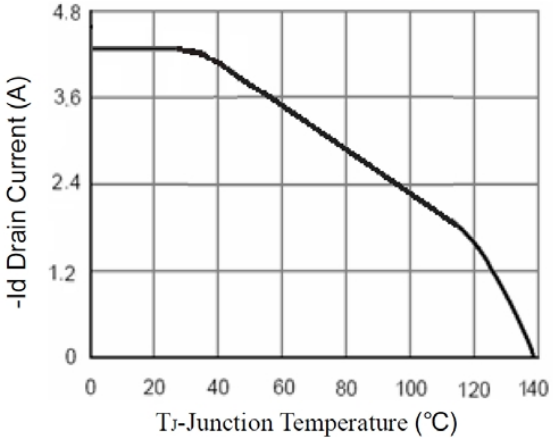


Figure3. Output Characteristics

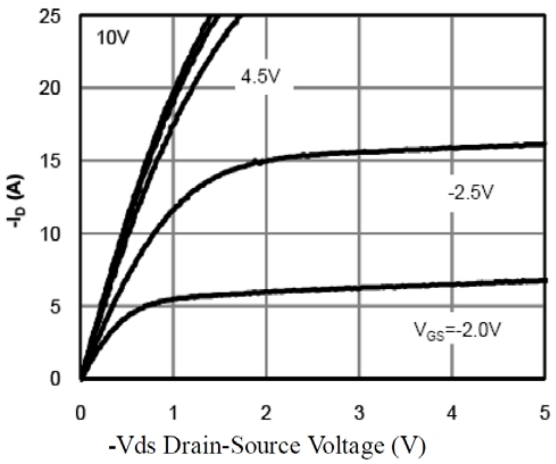


Figure4. Transfer Characteristics

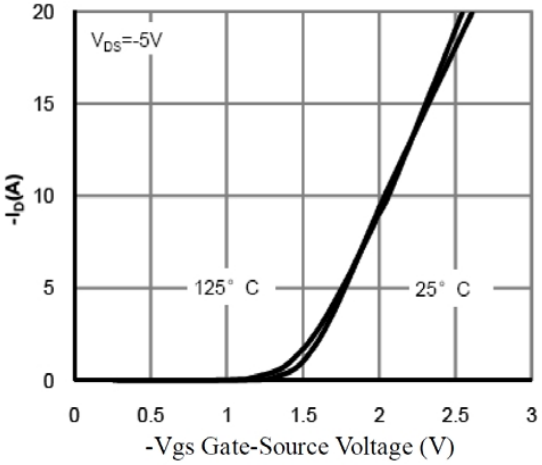


Figure5. Capacitance

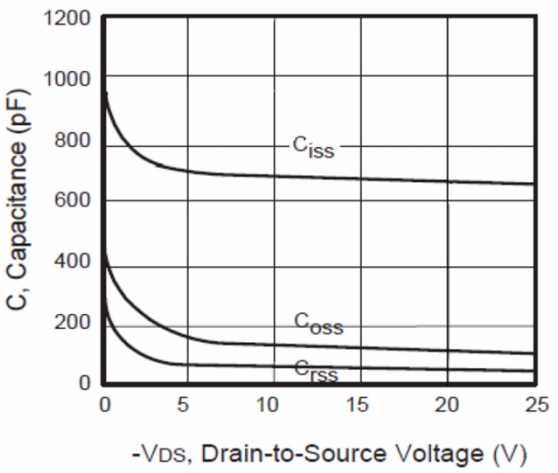


Figure6. $R_{DS(ON)}$ vs Junction Temperature

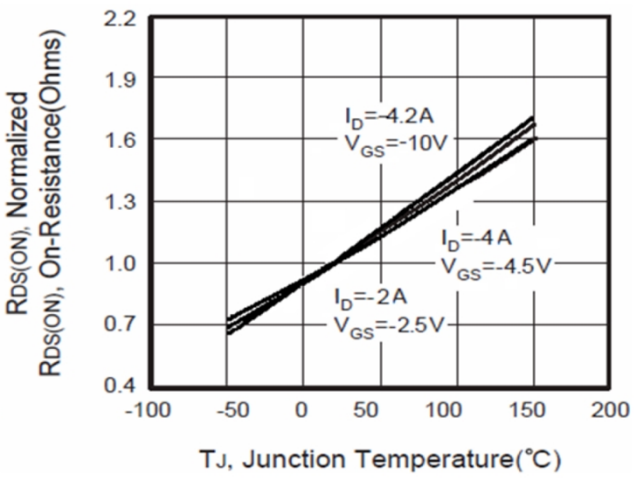


Figure7. Max BV_{DSS} vs Junction Temperature

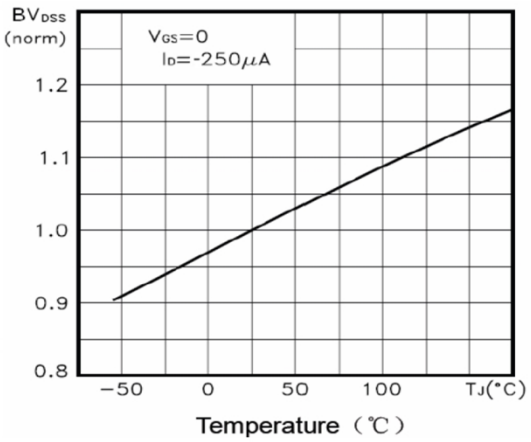


Figure8. $V_{GS(th)}$ vs Junction Temperature

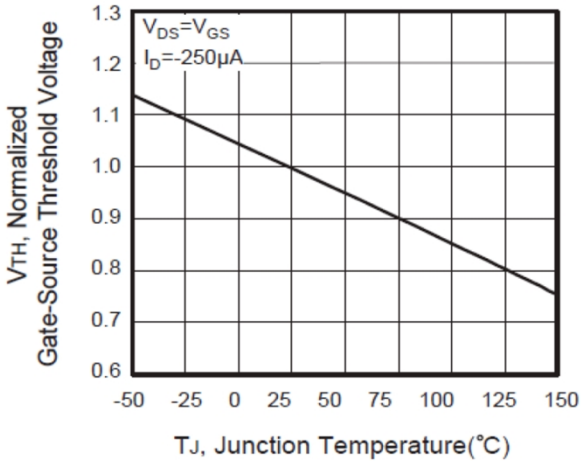


Figure9. Gate Charge Waveforms

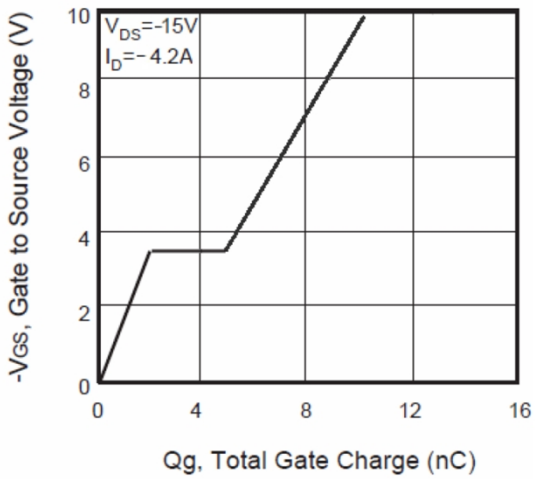


Figure10. Maximum Safe Operating Area

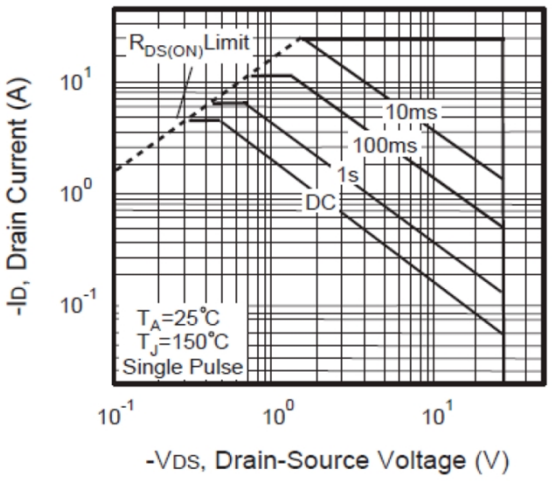
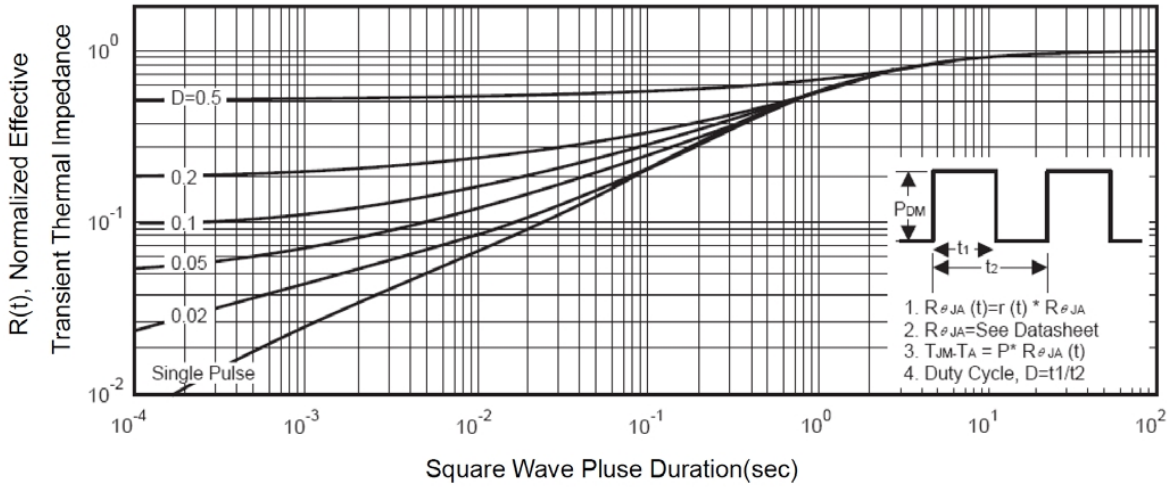
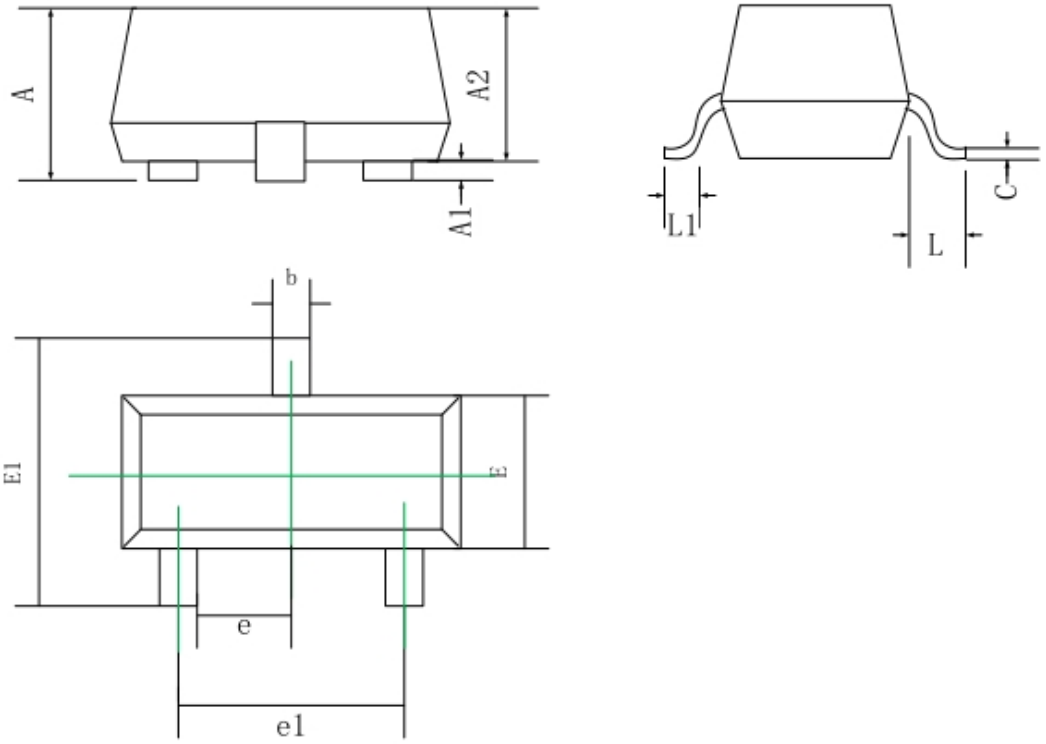


Figure11. Normalized Maximum Transient Thermal Impedance



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°