AM3401

axelite 亞瑟萊特科技股份有限公司 AXElite Technology Co.,Ltd

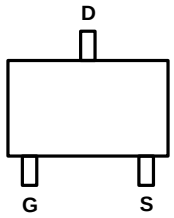
P-Channel Enhancement Mode MOSFET

Features

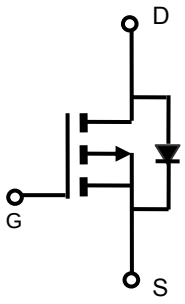
- ***-30V/-4.3A, $R_{DS(ON)}$ = 50mΩ@V_{GS} = -10V***
- ***-30V/-3.5A, $R_{DS(ON)}$ = 60mΩ@V_{GS} = -4.5V***
- ***-30V/-2.5A, $R_{DS(ON)}$ = 80mΩ@V_{GS} = -2.5V***
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and Maximum DC current capability
- This is a Full RoHS compliance
- SOT-23L package design

Pin Description

Top View



SOT-23



P Channel MOSFET

Applications

- Power Management in Note book
- Portable Equipment
- DSC
- LCD Display inverter
- Battery Powered System
- DC/DC Converter
- Load Switch

Ordering and Marking Information

AM3401 □□ Packing Type Package Code	Package R : SOT23-3L Packing Blank : Tube A : Taping
AM3401 : B1XXX	XXX - Date Code

Note: AXElite lead-free products contain molding compounds/die attach materials and 100% matte tin plate termination finish; which are fully compliant with RoHS. AXElite lead-free products meet or exceed the lead-free requirements of IPC/JEDEC J-STD-020C for MSL classification at lead-free peak reflow temperature. AXElite defines “Green” to mean lead-free (RoHS compliant) and halogen free (Br or Cl does not exceed 900ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500ppm by weight).

Absolute Maximum Ratings (T_A = 25°C unless otherwise noted)

Symbol	Parameter		Rating	Unit
V_{DSS}	Drain-Source Voltage		-30	V
V_{GSS}	Gate-Source Voltage		±12	
I_D	Continuous Drain Current (TJ=150°C)	V_{GS}= -10V	-4.3	A
I_{DM}	Pulsed Drain Current		-15	
I_S	Continuous Source Current (Diode Conduction)		-1	A
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	
P_D	Maximum Power Dissipation	T_A=25°C	1.25	W
		T_A=70°C	0.8	
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient		120	°C/W

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Parameters						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=-250μA	-30			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=-250μA	-0.4		-1.0	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V,V_{GS}=±12V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-24V,V_{GS}=0V			-1	μA
		V_{DS}=-24V,V_{GS}=0V T_J=55℃			-10	
$R_{DS(ON)}$	Drain-source On-Resistance	V_{GS}=-10V,I_D=-4.3A V_{GS}=-4.5V,I_D=-3.5A V_{GS}=-2.5V,I_D=-2.5A		50 60 80	55 65 85	mΩ
G_{fs}	Forward Transconductance	V_{DS}=-5V,I_D=-4.0A		10		S
Source-Drain Doide						
V_{SD}	Diode Forward Voltage	I_S=-1.0A,V_{GS}=0V		-0.8	-1.2	V
Dynamic Parameters						
Q_g	Total Gate Charge	V_{DS}=-15V V_{GS}=-10V I_D≡-4.0A		6		nC
Q_{gs}	Gate-Source Charge			12		
Q_{gd}	Gate-Drain Charge			1.5		
C_{iss}	Input Capacitance	V_{DS}=-15V V_{GS}=0V f=1MHz		815		pF
C_{oss}	Output Capacitance			93		
C_{rss}	Reverse Transfer Capacitance			52		
$t_{d(on)}$	Turn-On Time	V_{DD}=-15V R_L=15Ω I_D=-1A V_{GEN}=-10V R_G=6Ω		10	15	nS
t_r				2	5	
$t_{d(off)}$	Turn-Off Time			31	40	
t_f				3	6	

Note : 1. Pulse test: pulse width <= 300us, duty cycle<= 2%
2. Static parameters are based on package level with recommended wire-bonding

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Parameters						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=-250μA	-30			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=-250μA	-0.4		-1.0	V
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		V_{DS}=-24V,V_{GS}=0V T_J=55℃			-10	
$R_{DS(ON)}$	Drain-source On-Resistance	V_{GS}=-10V,I_D=-4.3A V_{GS}=-4.5V,I_D=-3.5A V_{GS}=-2.5V,I_D=-2.5A		50 60 80	55 65 85	mΩ
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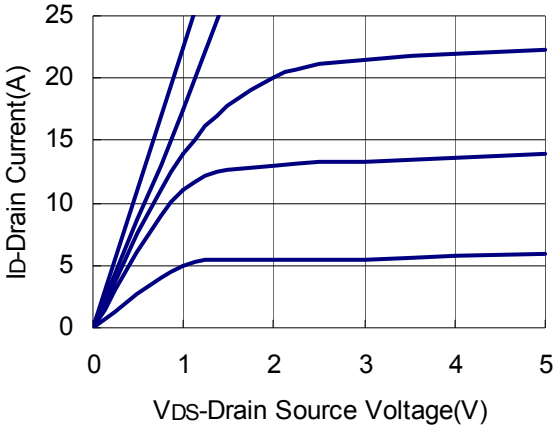
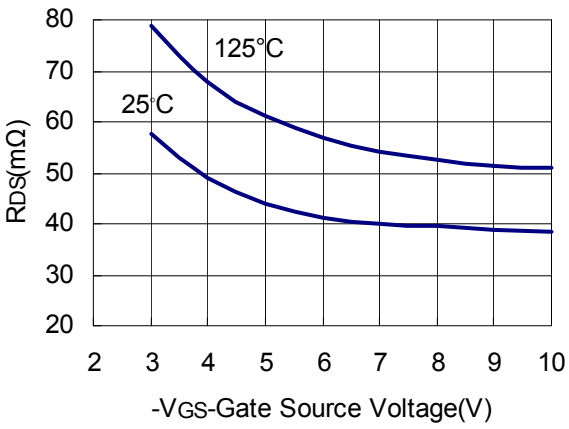
Typical Operating Characteristics *(25℃ Unless Note)*

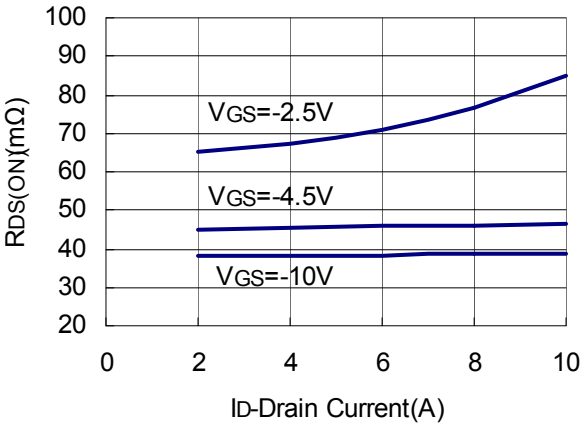
Output Characteristics



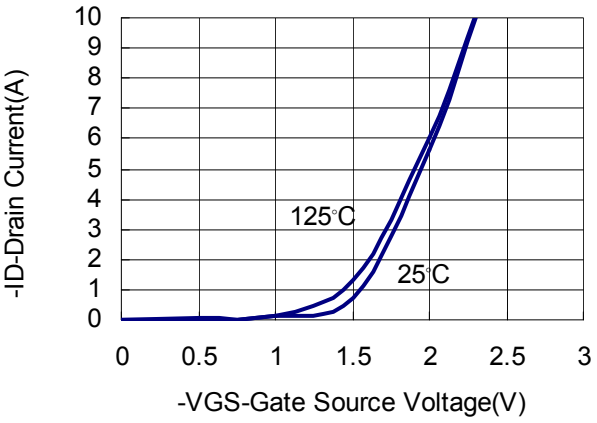
Drain-Source On Resistance



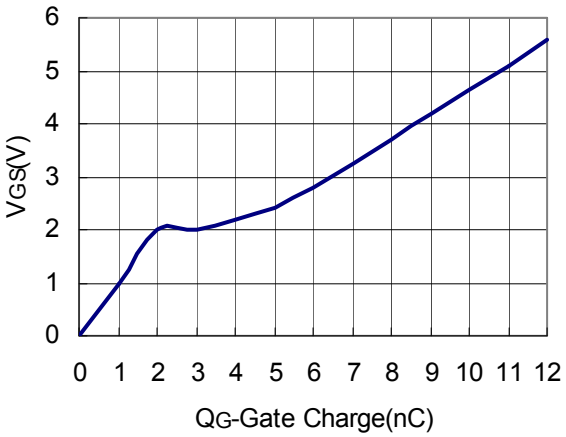
Drain Source On Resistance



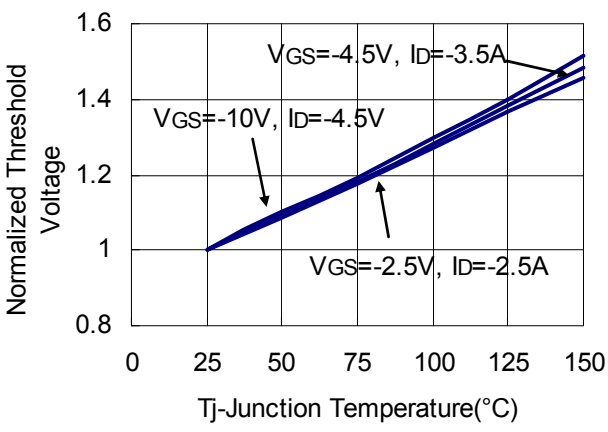
Transfer Characteristics



Gate Charge

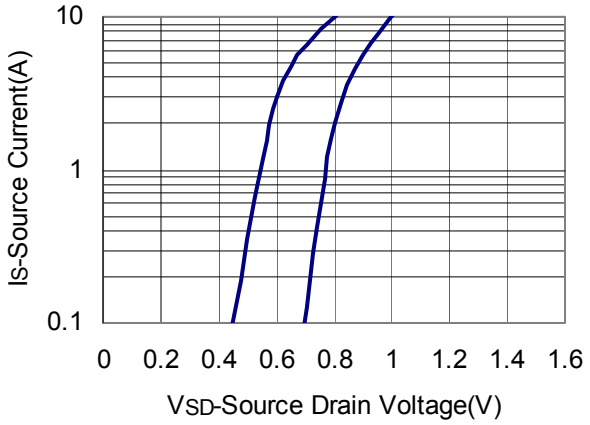


Drain Source Resistance

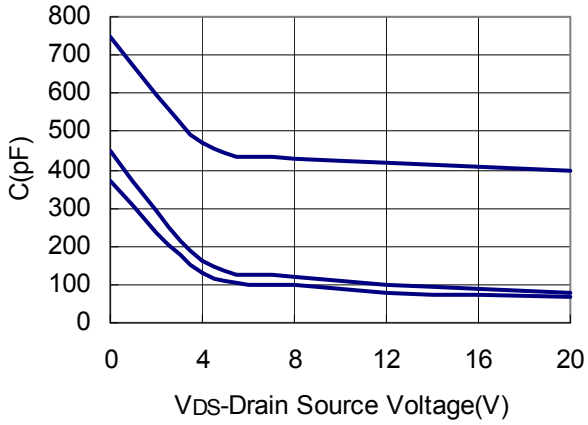


Typical Operating Characteristics *(25℃ Unless Note)*

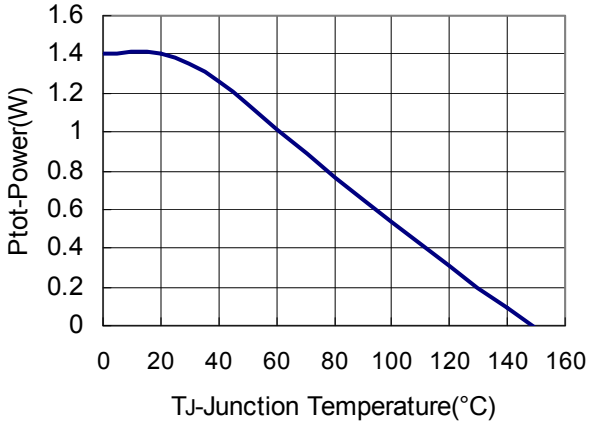
Source Drain Diode Forward



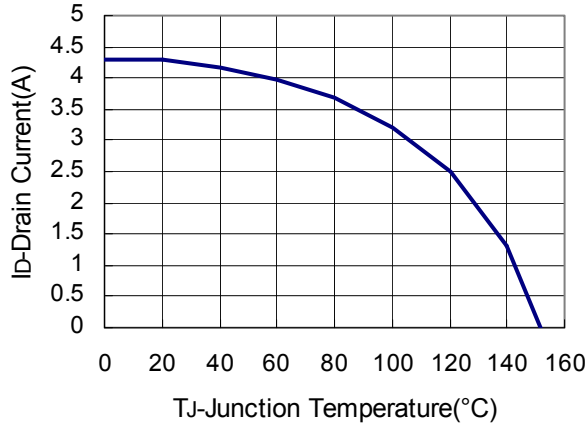
Capacitance



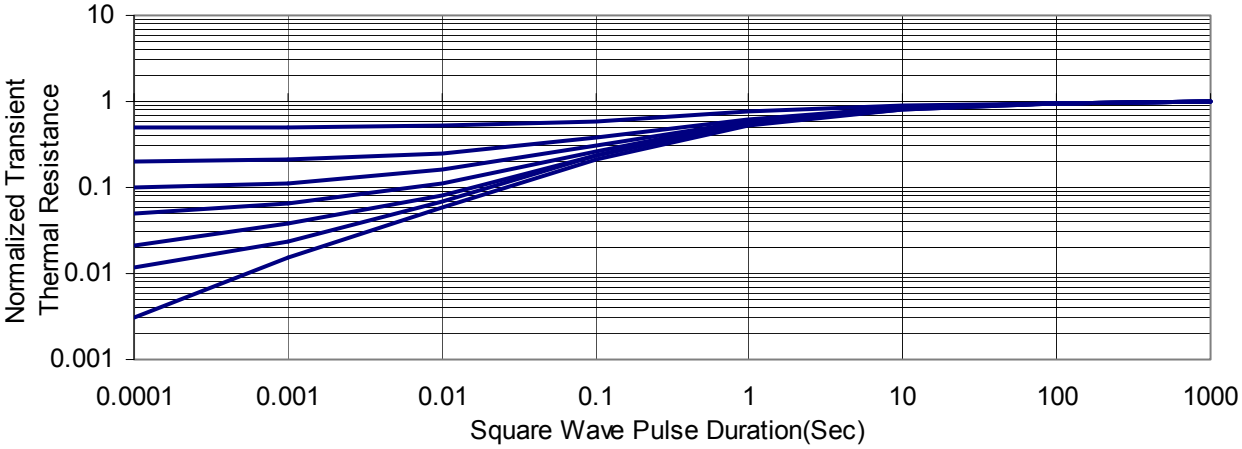
Power Dissipation



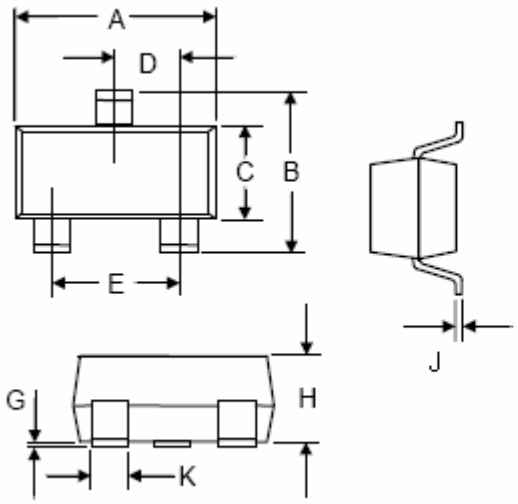
Drain Current



Thermal Transient Impedance



SOT-23L PACKAGE DIMENSIONS



Dimensions				
Symbol	Inches		Millimeters	
	Min	Max	Min	Max
A	0.110	0.120	2.80	3.04
B	0.104	0.116	2.65	2.95
C	0.059	0.067	1.50	1.70
D	0.037 TYP		0.95 TYP	
E	0.70	0.081	1.78	2.05
G	---	0.004	---	0.10
H	0.041	0.045	1.05	1.15
J	0.004	0.008	0.10	0.20
K	0.012	0.16	0.30	0.40