



Micro Commercial Components



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SI3401A

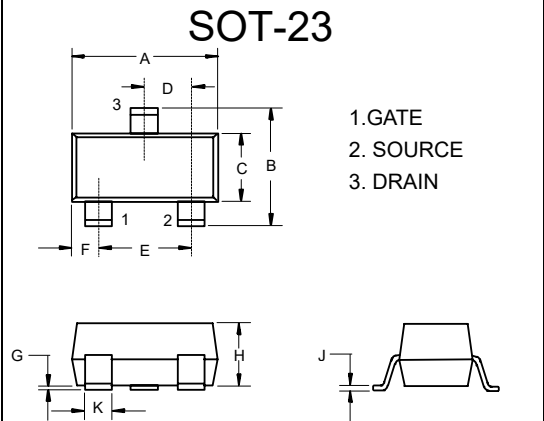
Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- High dense cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- SOT-23 Package
- Marking Code: R1_A

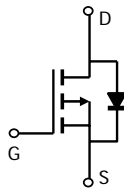
P-Channel Enhancement Mode Field Effect Transistor

Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
V_{DS}	Drain-source Voltage	-30	V
I_D	Drain Current-Continuous	-4.2	A
V_{GS}	Gate-source Voltage	±12	V
P_D	Total Power Dissipation	1.3	W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	96	°C/W
T_J	Operating Junction Temperature	-55 to +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

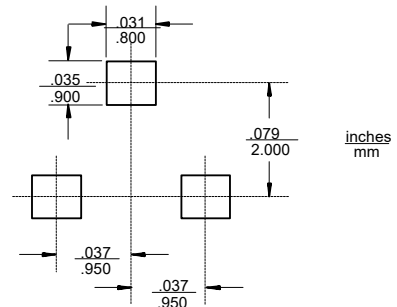


Internal Block Diagram



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.098	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

Suggested Solder Pad Layout



SI3401A

Electrical characteristics (T_a=25°C unless otherwise noted)

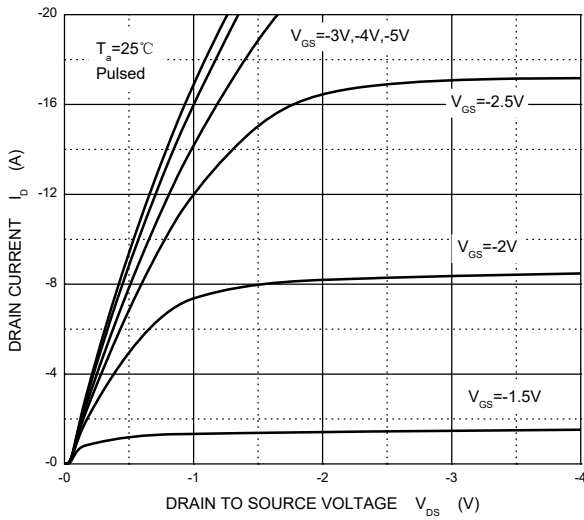
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -24V, V _{GS} = 0V			-1	μA
Gate-source leakage current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±100	nA
On characteristics						
Drain-source on-resistance (note 1)	R _{DS(on)}	V _{GS} = -10V, I _D = -4.2A		41	60	mΩ
		V _{GS} = -4.5V, I _D = -4A		47	70	mΩ
		V _{GS} = -2.5V, I _D = -1A		61	85	mΩ
Forward transconductance (note 1)	g _{FS}	V _{DS} = -5V, I _D = -5A	7			S
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.7		-1.3	V
Dynamic characteristics (note 2)						
Input capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz		1050		pF
Output capacitance	C _{oss}			127		pF
Reverse transfer capacitance	C _{rss}			85		pF
Switching characteristics (note 2)						
Turn-on delay time	t _{d(on)}	V _{GS} = -10V, V _{DS} = -15V, R _L = 3.6Ω, R _{GEN} = 6Ω			6.5	ns
Turn-on rise time	t _r				3.5	ns
Turn-off delay time	t _{d(off)}				40	ns
Turn-off fall Time	t _f				13	ns
Drain-source diode characteristics and maximum ratings						
Diode forward voltage (note 1)	V _{SD}	I _S = -1A, V _{GS} = 0V			-1	V

Note :

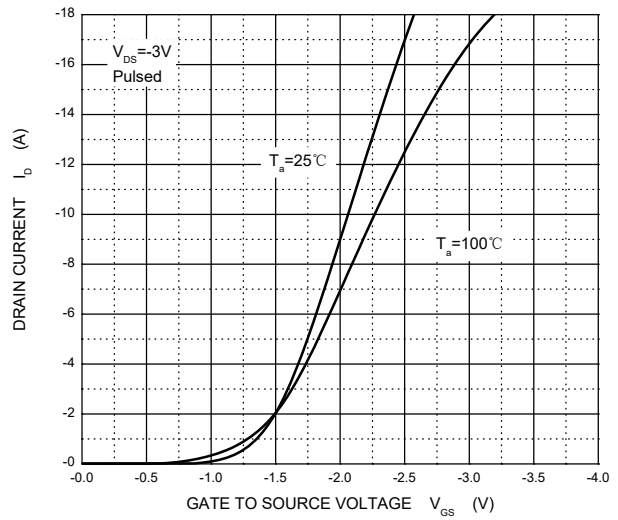
1. Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
2. These parameters have no way to verify.

Typical characteristics

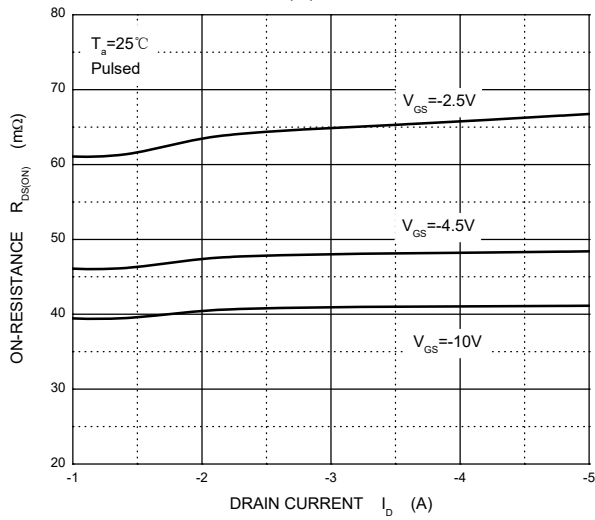
Output Characteristics



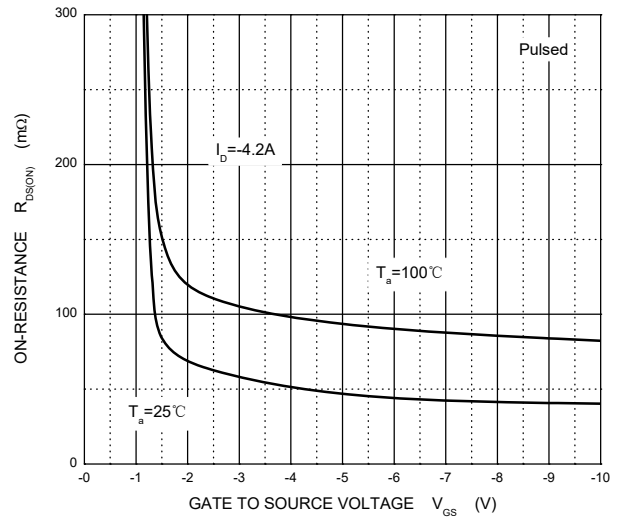
Transfer Characteristics



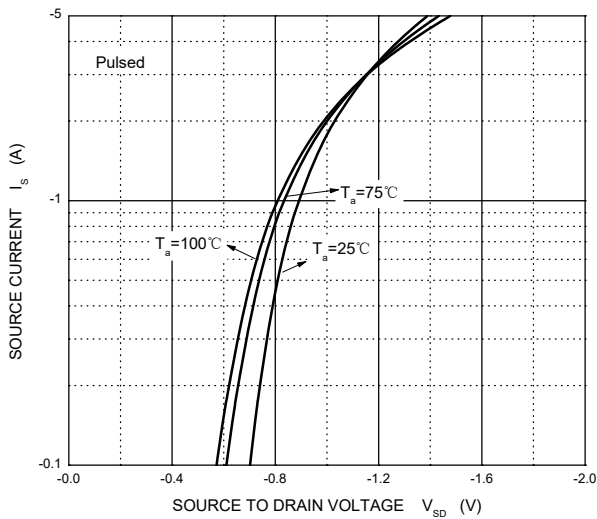
$R_{DS(ON)}$ — I_D



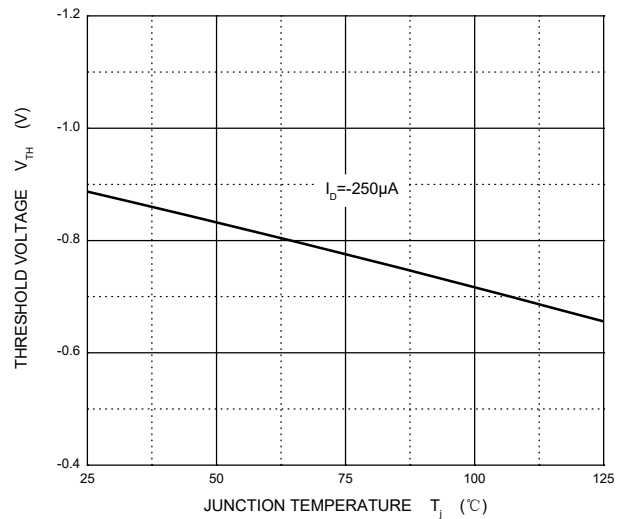
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage





Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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