



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Micro Commercial Components



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SI3420A

Features

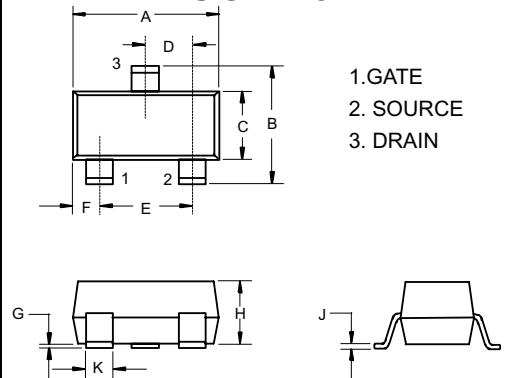
- High Power and current handling capability
- Lead free product is acquired
- Surface Mount Package
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

N-Channel Enhancement Mode Field Effect Transistor

Maximum Ratings @ 25°C Unless Otherwise Specified

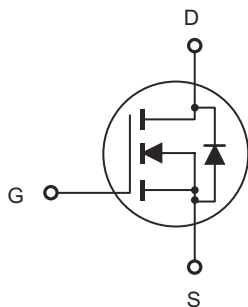
Symbol	Parameter	Rating	Unit
V _{DS}	Drain-source Voltage	20	V
I _D	Drain Current-Continuous	6	A
I _{DM}	Drain Current-Pulsed (Note 1)	30	A
V _{GS}	Gate-source Voltage	±10	V
P _D	Total Power Dissipation	1.25	W
R _{JA}	Thermal Resistance Junction to Ambient (Note 2)	100	°C/W
T _J	Operating Junction Temperature	-55 to +150	°C
T _{STG}	Storage Temperature	-55 to +150	°C

SOT-23

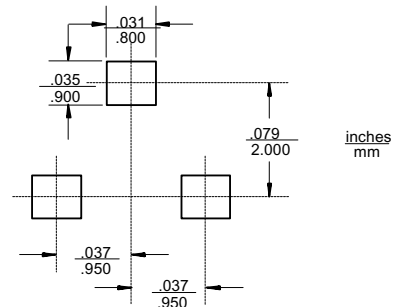


DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

Internal Block Diagram



Suggested Solder Pad Layout



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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	20	22	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±10V, V _{DS} =0V	-	-	±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.5	0.7	1.0	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =2.5V, I _D =4.0 A	-	27	35	mΩ
		V _{GS} =4.5V, I _D =5.0A	-	20	28	mΩ
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =6A	-	25	-	S
Dynamic Characteristics (Note4)						
Input Capacitance	C _{ISS}	V _{DS} =10V, V _{GS} =0V, F=1.0MHz	-	515	-	PF
Output Capacitance	C _{OSS}		-	90	-	PF
Reverse Transfer Capacitance	C _{RSS}		-	72	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =10V, R _L =1.7Ω V _{GS} =10V, R _{GEN} =3Ω	-	3	-	nS
Turn-on Rise Time	t _r		-	7.5	-	nS
Turn-Off Delay Time	t _{d(off)}		-	20	-	nS
Turn-Off Fall Time	t _f		-	6	-	nS
Total Gate Charge	Q _g	V _{DS} =10V, I _D =6A, V _{GS} =10V	-	12	-	nC
Gate-Source Charge	Q _{gs}		-	1	-	nC
Gate-Drain Charge	Q _{gd}		-	2	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V _{SD}	V _{GS} =0V, I _S =1A	-	-	1.2	V
Diode Forward Current (Note 2)	I _S		-	-	6	A

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 Electrical and Thermal Characteristics

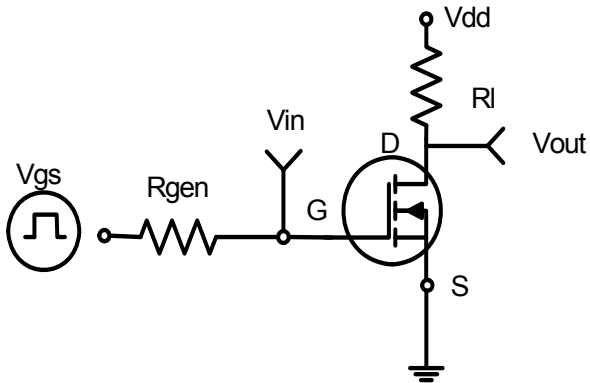


Figure 1: Switching Test Circuit

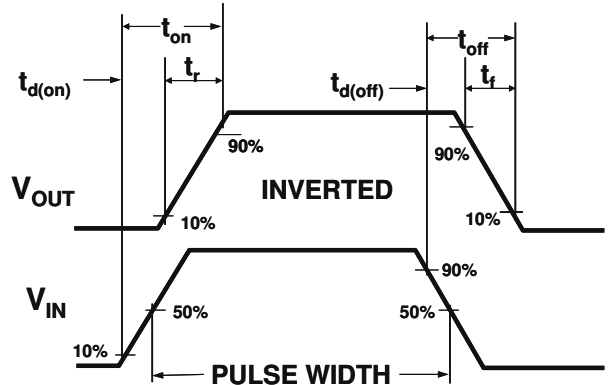


Figure 2: Switching Waveforms

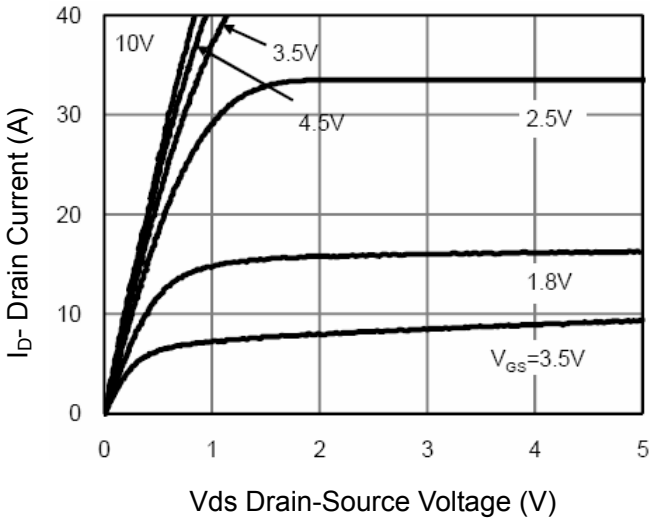


Figure 3 Output Characteristics

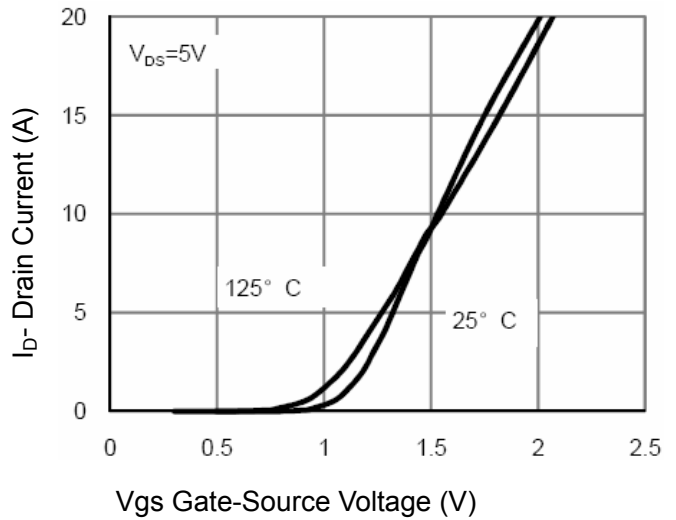


Figure 4 Transfer Characteristics

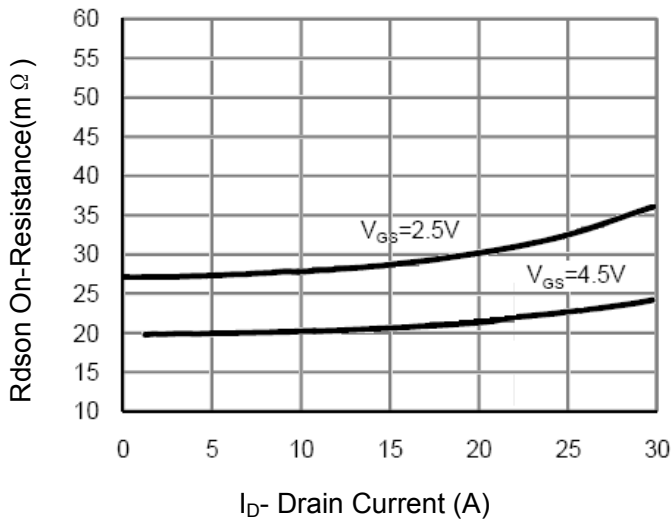


Figure 5 Drain-Source On-Resistance

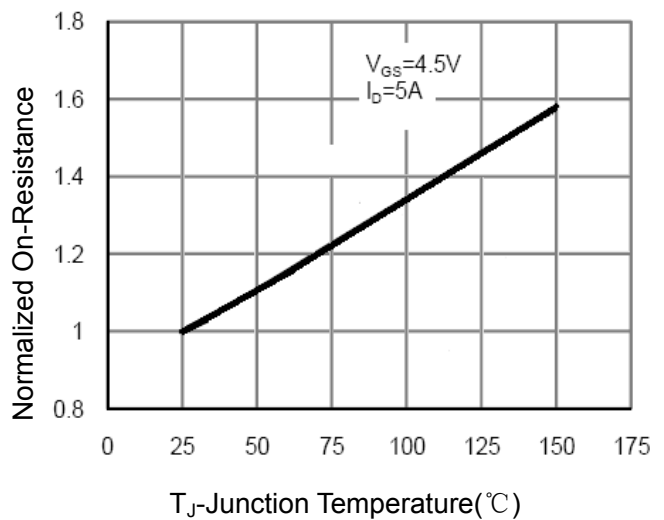


Figure 6 Drain-Source On-Resistance



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Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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