



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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SI2321

Features

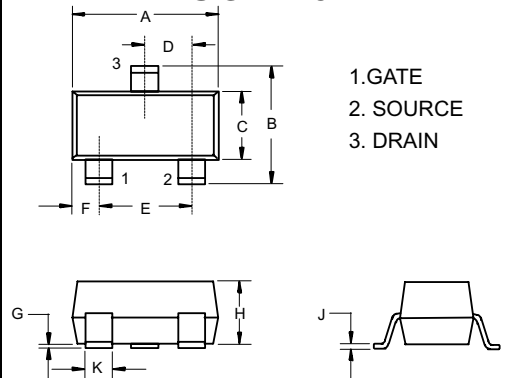
- Halogen free available upon request by adding suffix "-HF"
- -20V, -2.9A, $R_{DS(ON)}=57m\Omega @V_{GS}=-4.5V$
 $R_{DS(ON)}=76m\Omega @V_{GS}=-2.5V$
- High dense cell design for extremely low $R_{DS(ON)}$
- Rugged and reliable
- High Speed Switching
- SOT-23 Package
- Marking Code: S21 K
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
V_{DS}	Drain-source Voltage	-20	V
I_D	Drain Current-Continuous	-2.9	A
I_{DM}	Drain Current-Pulsed	-12	A
I_S	Continuous Source-Drain Diode Current	-0.59	A
V_{GS}	Gate-source Voltage	± 12	V
P_D	Total Power Dissipation	0.35	W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	357	$^{\circ}C/W$
T_J	Operating Junction Temperature	-55 to +150	$^{\circ}C$
T_{STG}	Storage Temperature	-55 to +150	$^{\circ}C$

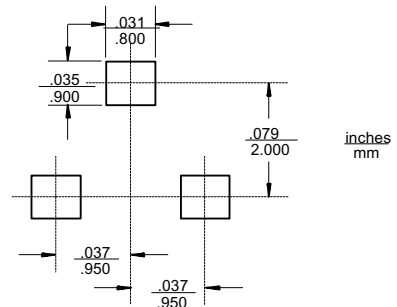
P-Channel Enhancement Mode Field Effect Transistor

SOT-23

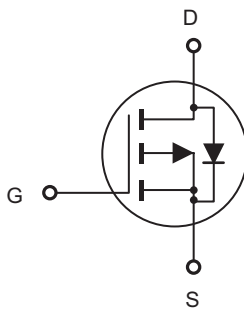


DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

Suggested Solder Pad Layout



Internal Block Diagram



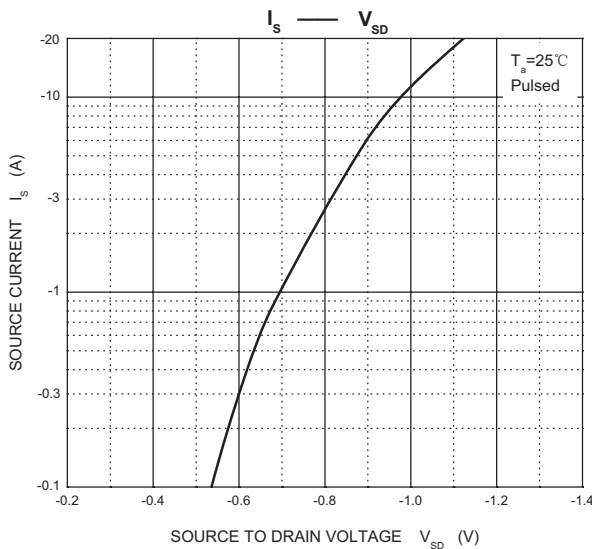
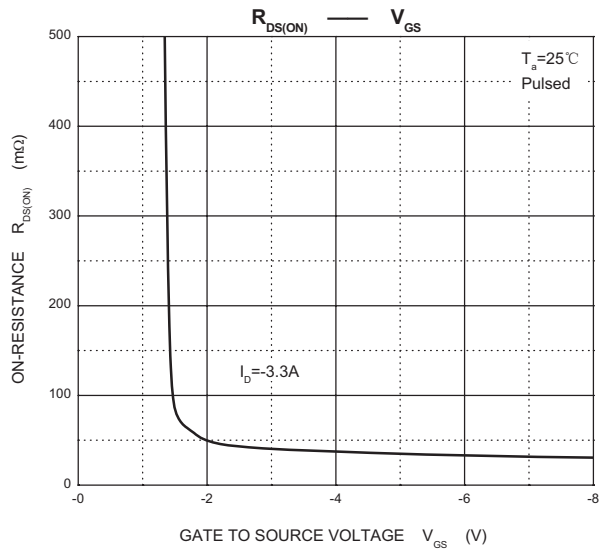
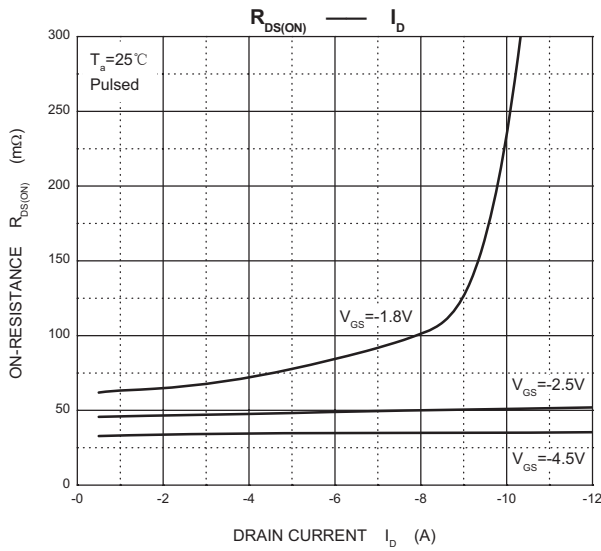
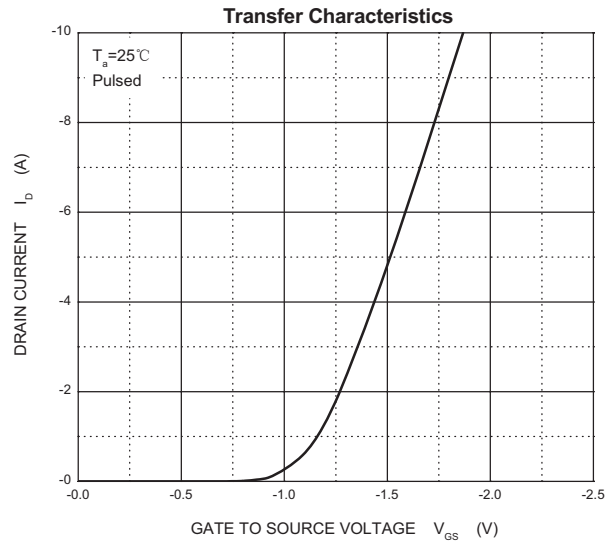
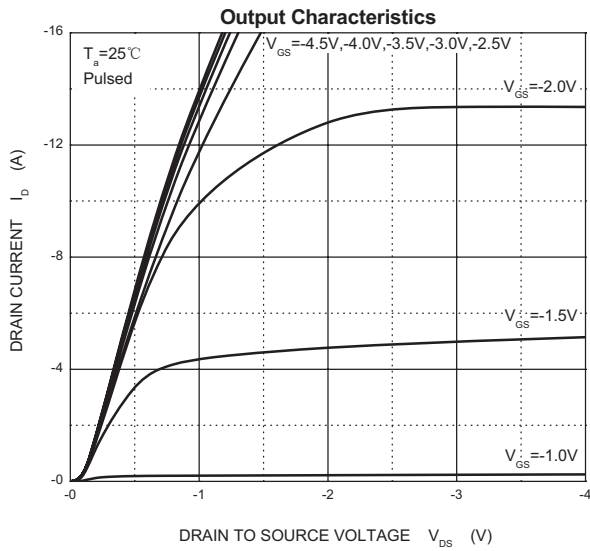
Electrical characteristics (T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D = -10μA	-20			V
Gate-source leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±12V			±100	nA
Zero Gate voltage drain current	I _{DSS}	V _{DS} = -16V, V _{GS} = 0V			-1.0	μA
Gate-source threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.4		-0.9	V
Drain-source on-state resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -3.3A			0.057	Ω
		V _{GS} = -2.5V, I _D = -2.8A			0.076	
		V _{GS} = -1.8V, I _D = -2.3A			0.110	
Forward tranconductance	g _{fs}	V _{DS} = -5V, I _D = -3.3A	3			S
Forward diode voltage	V _{SD}	V _{GS} = 0V, I _S = -1.6A			-1.2	V
Dynamic						
Input capacitance ^{a,b}	C _{iss}	V _{DS} = -6V, V _{GS} = 0V, f = 1MHz		715		pF
Output capacitance ^{a,b}	C _{oss}			170		
Reverse transfer capacitance ^{a,b}	C _{rss}			120		
Total Gate charge ^a	Q _g	V _{DS} = -6V, V _{GS} = -4.5V, I _D = -3.3A			13	nc
Gate-Source charge ^a	Q _{gs}			1.2		nc
Gate-Drain charge ^a	Q _{gd}			2.2		nc
Switching^{a,b}						
Turn-on delay Time	t _{d(on)}	V _{GEN} = -4.5V, V _{DD} = -6V, I _D = -1.0A, R _G = 6Ω, R _L = 6Ω			25	ns
Rise time	t _r				55	
Turn-off delay time	t _{d(off)}				90	
Fall time	t _f				60	

Notes :

a. Pulse Test : pulse width ≤300μs, duty cycle ≤2%.

SI2321





Micro Commercial Components

Ordering Information :

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

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