Features

- High Dense Cell Design For Extremely Low $R_{DS(ON)}$
- Rugged and reliable
- High Speed Switching
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

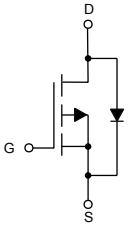
P-Channel MOSFET

Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 100°C/W Junction to Ambient(Note1)

Parameter	Symbol	Rating	Unit
Drain -source Voltage	V_{DS}	-20V	V
Gate -Source Voltage	V_{GS}	±8	V
Drain Current-Continuous	I_D	-2.8	A
Drain Current-Pulse(Note 2)	I_{DM}	-10	A
Power Dissipation	P_D	1.25	W

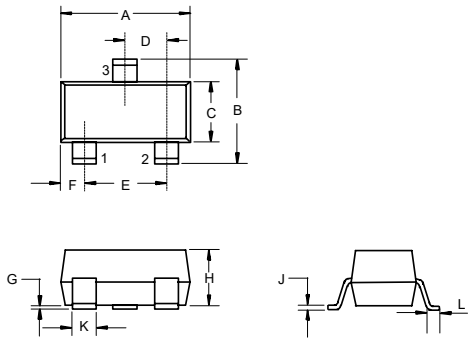
Internal Structure



1. GATE
2. SOURCE
3. DRAIN

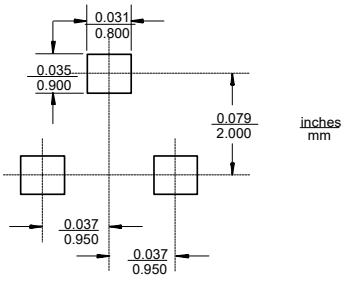
Marking:S1

SOT-23



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

Suggested Solder Pad Layout



ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250μA	-20			V
Gate-Threshold Voltage(Note 3)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-0.45	-0.7	-1.0	V
Gate-Body Leakage Current	I_{GSS}	V_{GS} =±8V, V_{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-20V, V_{GS} =0V			-1	μA
Drain-Source On-Resistance(Note 3)	$R_{DS(on)}$	V_{GS}=-4.5V, I_D=-2.8A		80	120	mΩ
		V_{GS}=-2.5V, I_D=-2.0A		110	150	
Forward Tranconductance	g_{FS}	V_{DS}=-5V, I_D=-2.8A		8		S
Diode Forward Current (Note 1)	I_S				-0.75	S
Diode Forward Voltage(Note 3)	V_{SD}	V_{GS}=0V, I_S=-0.75A			-1.2	V
Dynamic Characteristics(Note 4)						
Input Capacitance	C_{iss}	V_{DS}=-6V,V_{GS}=0V, f=1MHz		880		pF
Output Capacitance	C_{oss}			270		
Reverse Transfer Capacitance	C_{rss}			175		
Switching Characteristics(Note 4)						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-6V,V_{GS}=-4.5V, I_D=-1A,R_{GEN}=6Ω		11	20	ns
Turn-On Rise Time	t_r			5	10	
Turn-Off Delay Time	$t_{d(off)}$			32	65	
Turn-Off Fall Time	t_f			23	45	
Total Gate Charge	Qg	V_{DS}=-6V,V_{GS}=-4.5V,I_D=-2.8A		11	14.5	nC
Gate-Source Chage	Qgs			1.5		
Gage-Drain Charge	Qgd			2.1		

Note:

1. Surface Mounted on FR4 Board,t<5 sec.
2. Repetitive Rating : Pulse width limited by maximum junction temperature.
3. Pulse Test: Pulse Width≤300μs,Duty Cycle≤2%.
4. Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Output Characteristics

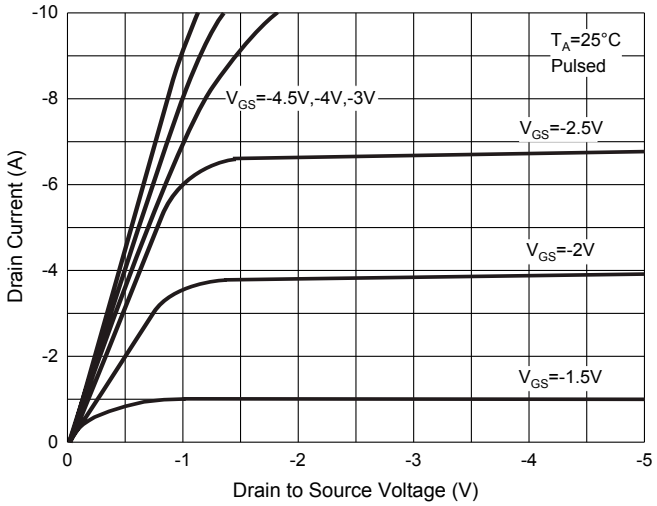


Fig. 2 - Transfer Characteristics

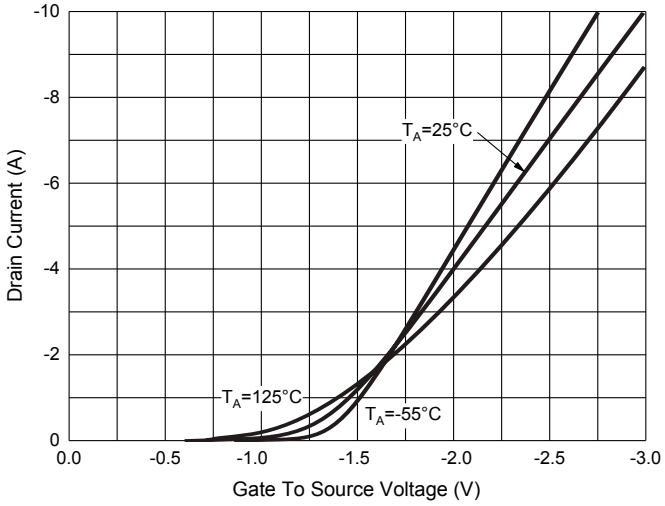


Fig. 3 - Capacitance Characteristics

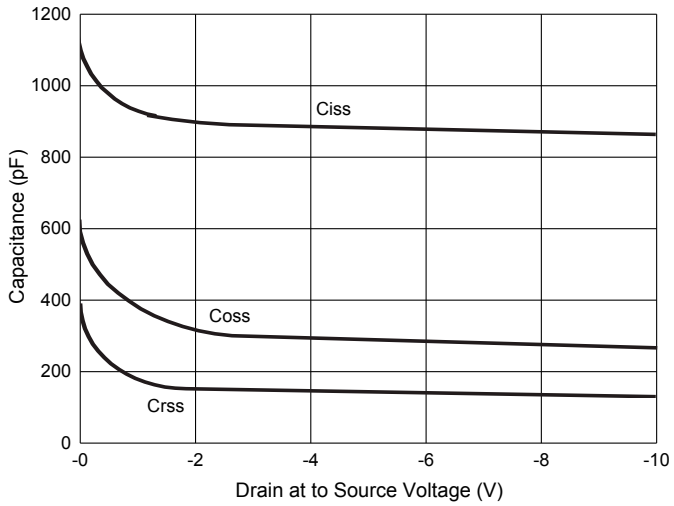


Fig. 4 - $R_{DS(ON)}$—Temperature

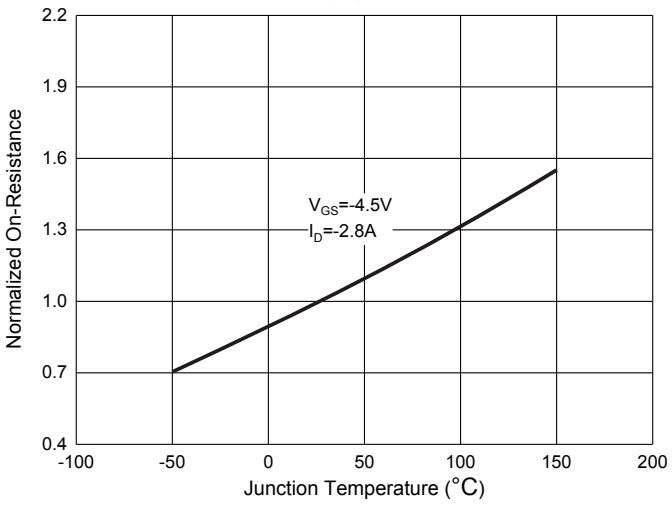


Fig. 5 - Threshold Voltage

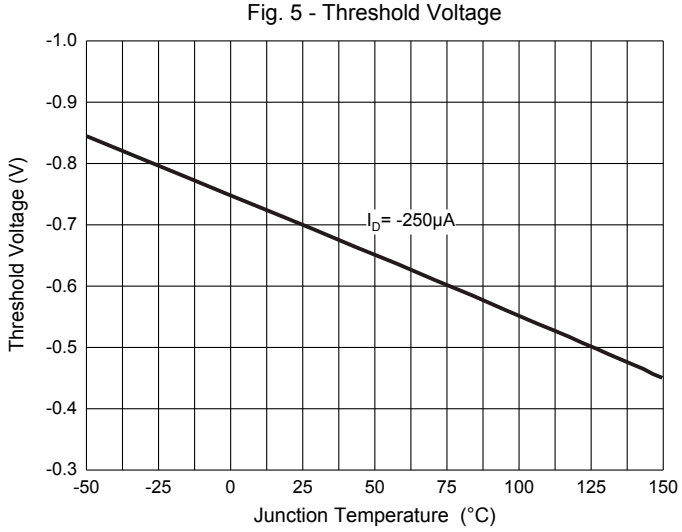
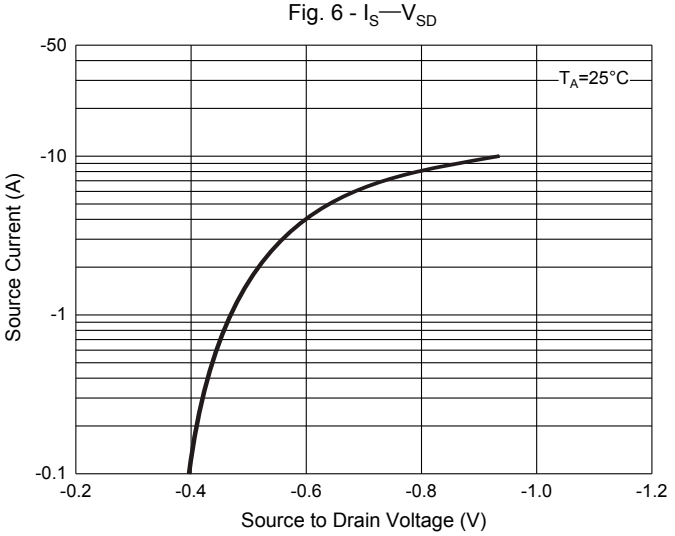


Fig. 6 - I_S—V_{SD}



Ordering Information

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

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Micro Commercial Components (MCC):

SI2301