



Micro Commercial Components 20736 Marilla Street Chatsworth

CA 91311

Phone: (818) 701-4933 Fax: (818) 701-4939 **SI2312** 

# **Features**

- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- TrenchFET Power MOSFET
- Load Switch for Portable Devices

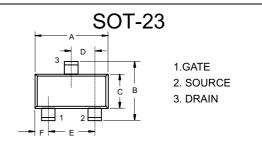
**Internal Block Diagram** 

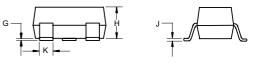
Marking Code: S12

# **N-Channel Enhancement Mode Field Effect Transistor**

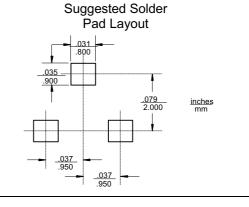
## Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
$V_{DS}$	Drain-source Voltage	20	V
Ι <sub>D</sub>	Continuous Drain Current	5.0	Α
Is	Continuous Source-Drain Diode Current	1.04	Α
$V_{GS}$	Gate-source Voltage	±8	V
P <sub>D</sub>	Total Power Dissipation	0.35	W
R <sub>0</sub> JA	Thermal Resistance Junction to Ambient	357	°C/W
TJ	Operating Junction Temperature	-55 to +150	$^{\circ}\mathbb{C}$
T <sub>STG</sub>	Storage Temperature	-55 to +150	$^{\circ}\mathbb{C}$





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





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# T<sub>a</sub>=25 ℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Тур	Max	Unit
Static						
Drain-source breakdown voltage	V(BR) DSS	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	20			V
Gate-source leakage	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±8V			±100	nA
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			1.0	μΑ
Gate-source threshold voltage	VGS(th)	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	0.45		1.0	V
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =5.0A			0.0318	
Drain-source on-state resistance <sup>a</sup>	RDS(on)	V <sub>GS</sub> =2.5V, I <sub>D</sub> =4.7A			0.0356	Ω
		V <sub>GS</sub> =1.8V, I <sub>D</sub> =4.3A			0.0414	
Forward tranconductance <sup>a</sup>	<b>g</b> fS	V <sub>DS</sub> =10V, I <sub>D</sub> =5.0A	6			S
Dynamic <sup>b</sup>						
Input capacitance	C <sub>iss</sub>			865		
Output capacitance	Coss	V <sub>DS</sub> =10V,V <sub>GS</sub> =0V,f =1MHz		105		pF
Reverse transfer capacitance	C <sub>rss</sub>			55		
Gate resistance	Rg	f =1MHz	0.5		4.8	Ω
Turn-on delay Time	td(on)				10	
Rise time	tr	V <sub>GEN</sub> =5V,V <sub>DD</sub> =10V,			20	
Turn-off Delay time	td(off)	$I_D = 4A, R_G = 1\Omega, R_L = 2.2\Omega$		32	ns	
Fall yime	tf	]			12	
Drain-source body diode characteristics						
Forward diode voltage	$V_{SD}$	V <sub>GS</sub> =0V,I <sub>S</sub> =4A		0.75	1.2	V

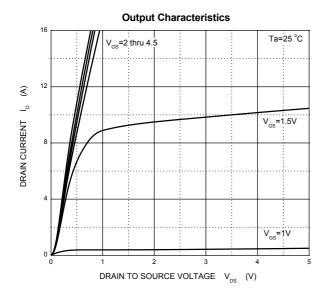
### Notes:

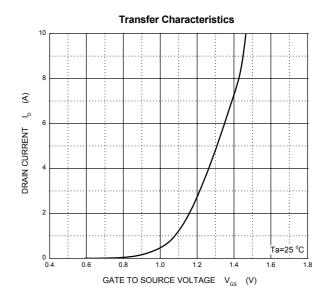
- a. Pulse Test : pulse width  $\leq 300 \mu s$ , duty cycle  $\leq 2\%$ .
- b. These parameters have no way to verify.

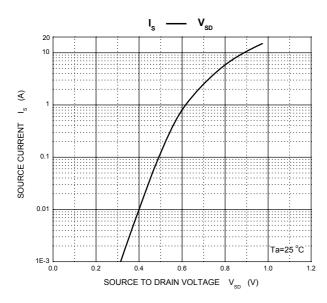


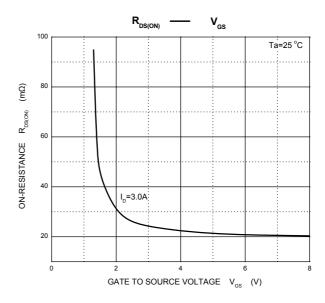
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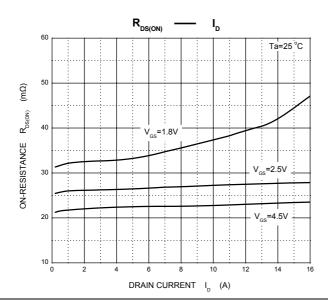
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## Ordering Information:

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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