

Features

- Excellent $R_{DS(ON)}$
- TrenchFET Power Mosfet
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 357°C/W Junction to Ambient (Note 2)
- Thermal Resistance: 113°C/W Junction to Ambient (Note 3)

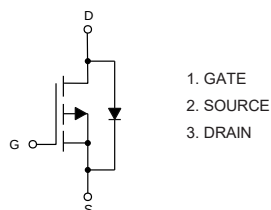
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-15	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current	I_D	-5.6	A
Pulsed Drain Current	I_{DM}	-15	A
Total Power Dissipation	P_D	0.35 (Note 2)	W
		1.1 (Note 3)	

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. Device Mounted on No Heat Sink.

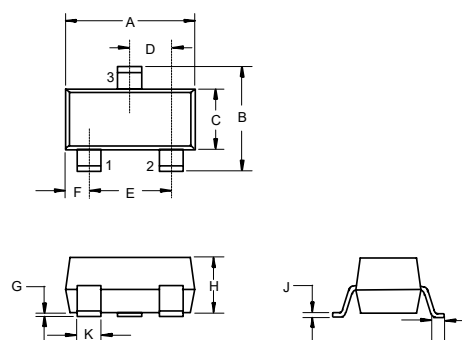
3. Device Mounted on FR-4 Substrate Board, with Minimum Recommended Pad Layout, Single Side.

Internal Structure



P-CHANNEL MOSFET

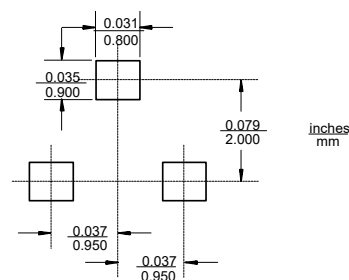
SOT-23



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	0.014	0.020	0.35	0.51	
L	0.007	0.020	0.20	0.50	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C (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	-15			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-15V, V _{GS} =0V			-1	μA
Gate-Threshold Voltage ^(Note 4)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.4		-1	V
Drain-Source On-Resistance ^(Note 4)	R _{DS(on)}	V _{GS} =-4.5V, I _D =-2.8A		28	40	mΩ
		V _{GS} =-2.5V, I _D =-2.8A		35	53	
Forward Tranconductance ^(Note 4)	g _{FS}	V _{DS} =-5V, I _D =-5A		9		S
Dynamic Characteristics ^(Note 5)						
Input Capacitance	C _{iss}	V _{DS} =-6V,V _{GS} =0V,f=1MHz		740		pF
Output Capacitance	C _{oss}			290		
Reverse Transfer Capacitance	C _{rss}			190		
Gate Resistance	R _g	f=1MHz	1.9		19	Ω
Total Gate Charge	Q _g	V _{DS} =-6V,V _{GS} =-4.5V,I _D =-5A		14	21	nC
Gate-Source Charge	Q _{gs}			2.3		
Gate-Drain Charge	Q _{gd}			3.6		
Turn-On Delay Time	t _{d(on)}	V _{DD} =-6V,V _{GEN} =-4.5V,I _D =-4A R _L =6Ω,R _{GEN} =1Ω		26	40	ns
Turn-On Rise Time	t _r			24	40	
Turn-Off Delay Time	t _{d(off)}			45	70	
Turn-Off Fall Time	t _f			20	35	
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I _S	T _C =25°C			-1.4	A
Pulsed Diode Forward Current	I _{SM}				-20	
Body Diode Voltage ^(Note 4)	V _{SD}	I _S =-4A, V _{GS} =0V			-1.2	V
Reverse Recovery Time ^(Note 5)	t _{rr}	I _F =-4A,di/dt=100A/μs		24	48	ns
Reverse Recovery Charge ^(Note 5)	Q _{rr}			8	16	nC

Note 4. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

5. Guaranteed by Design, Not Subject to Production Testing.

Curve Characteristics

Fig. 1 - Output Characteristics

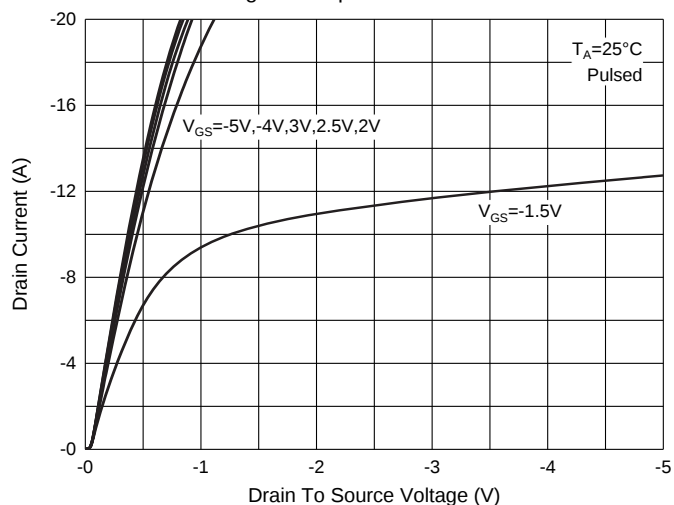


Fig. 2 - Transfer Characteristics

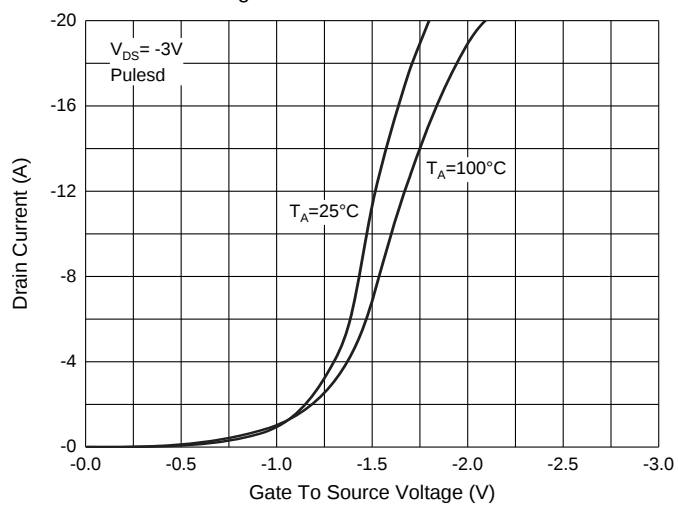


Fig. 3 - $R_{DS(ON)} - I_D$

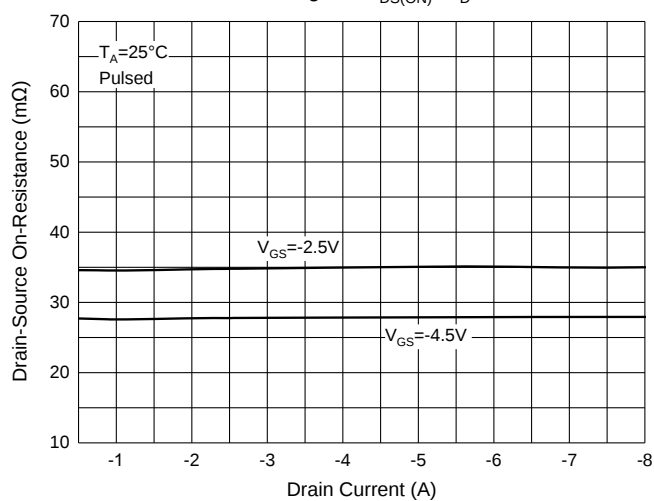


Fig. 4 - $R_{DS(ON)} - V_{GS}$

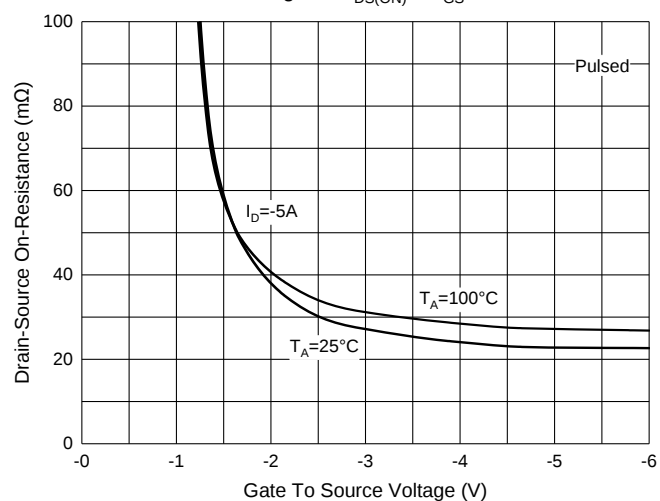


Fig. 5 - $I_S - V_{SD}$

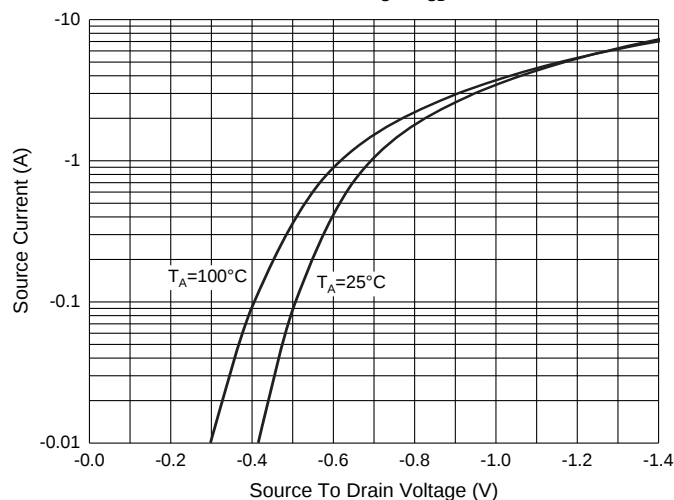
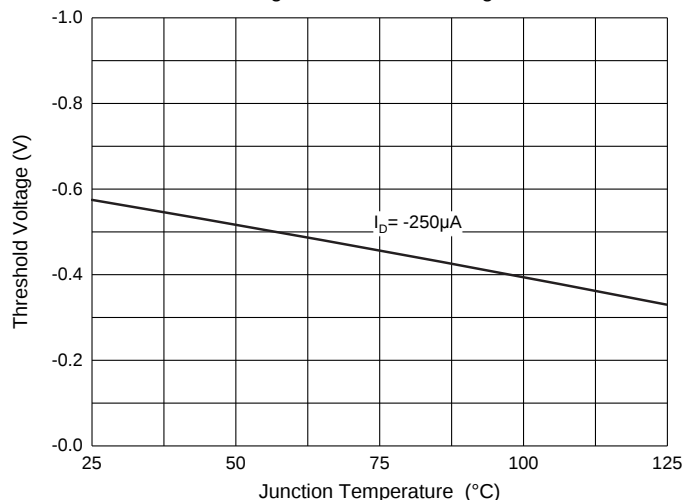


Fig. 6 - Threshold Voltage



Ordering Information

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

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