Features

- High Density Cell Design for Ultra Low $R_{DS(on)}$
- Exceptional On-Resistance and Maximum DC Current Capability
- 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)

P-CHANNEL MOSFET

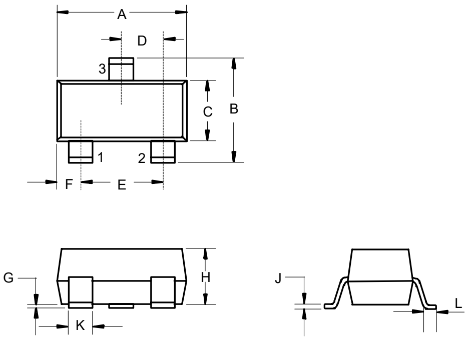
Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 96°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Volltage	V_{GS}	±12	V
Continuous Drain Current	I_D	-4.2	A
Pulsed Drain Current	I_{DM}	-30	A
Total Power Dissipation	P_D	1.3	W

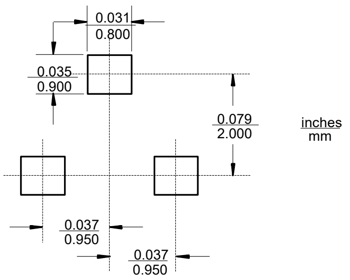
Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

SOT-23

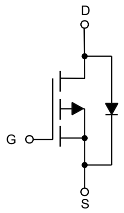


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51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

Suggested Solder Pad Layout



Internal Structure



1. GATE
2. SOURCE
3. DRAIN

Marking: R1$_{A}$.

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250μA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-24V, V_{GS} =0V			-1	μA
Gate-Source Leakage Current	I_{GSS}	V_{DS} =0V, V_{GS} =±12V			±100	nA
On Characteristics(Note 2)						
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-0.7		-1.3	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V, I_D=-4.2A		41	60	mΩ
		V_{GS}=-4.5V, I_D=-4A		47	70	
		V_{GS}=-2.5V, I_D=-1A		61	85	
Forward Tranconductance	g_{FS}	V_{DS}=-5V, I_D=-5A	7			S
Dynamic Characteristics(Note 3)						
Input Capacitance	C_{iss}	V_{DS}=-15V,V_{GS}=0V,f =1MHz		1050		pF
Output Capacitance	C_{oss}			127		
Reverse Transfer Capacitance	C_{rss}			85		
Switching Characteristics(Note 3)						
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=-10V,V_{DS}=-15V,R_L=3.6Ω, R_{GEN}=6Ω			6.5	ns
Turn-On Rise Time	t_r				3.5	
Turn-Off Delay Time	$t_{d(off)}$				40	
Turn-Off Fall Time	t_f				13	
Drain-Source Diode Characteristics and Maximum Ratings						
Diode Forward Voltage(Note 1)	V_{SD}	V_{GS}=0V, I_S=-1A			-1	V

Note: 2. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.

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

Curve Characteristics

Fig. 1 - Output Characteristics

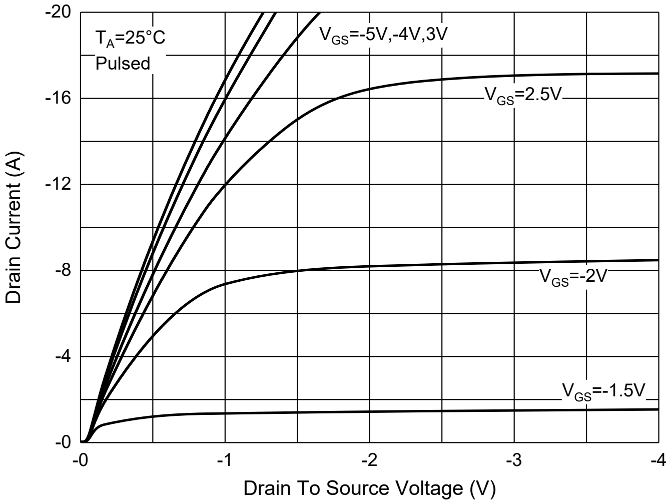


Fig. 2 - Transfer Characteristics

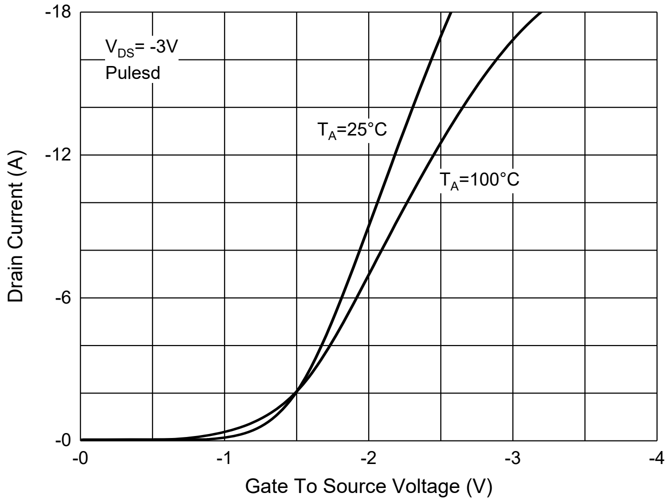


Fig. 3 - $R_{DS(ON)}$—I_D

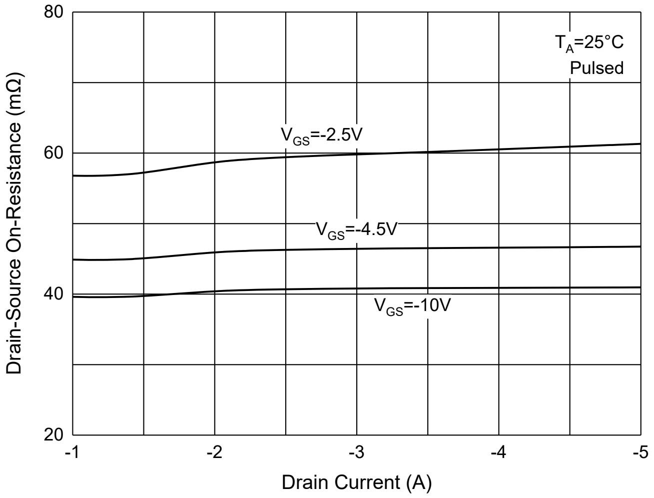


Fig. 4 - $R_{DS(ON)}$—V_{GS}

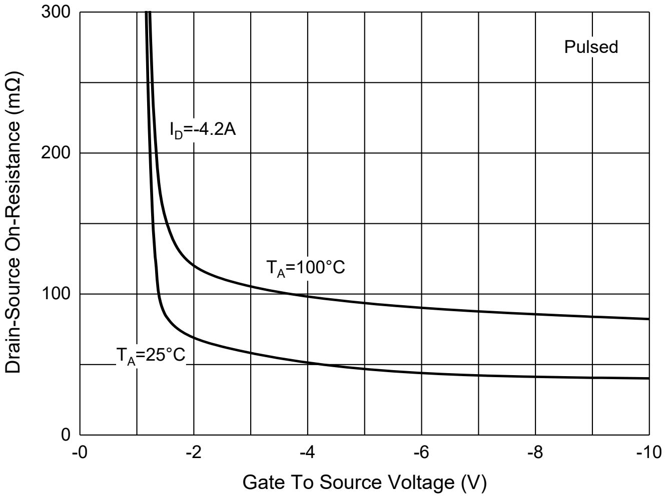


Fig. 5 - I_S—V_{SD}

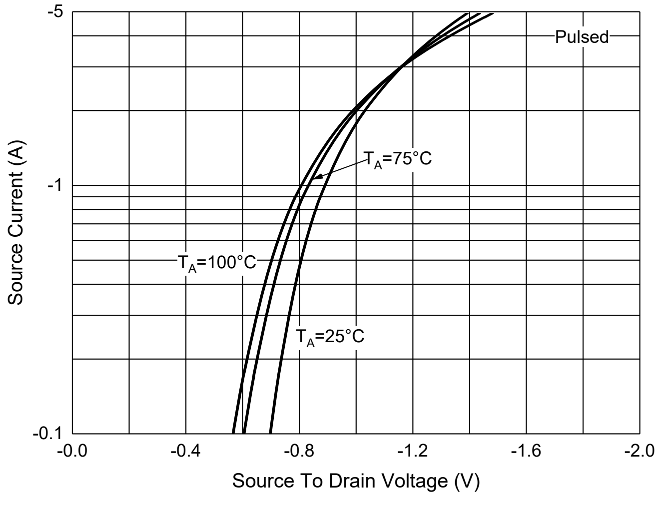
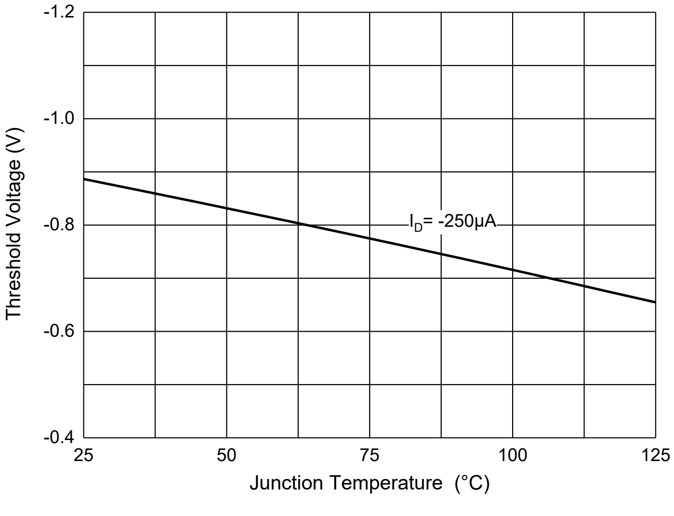
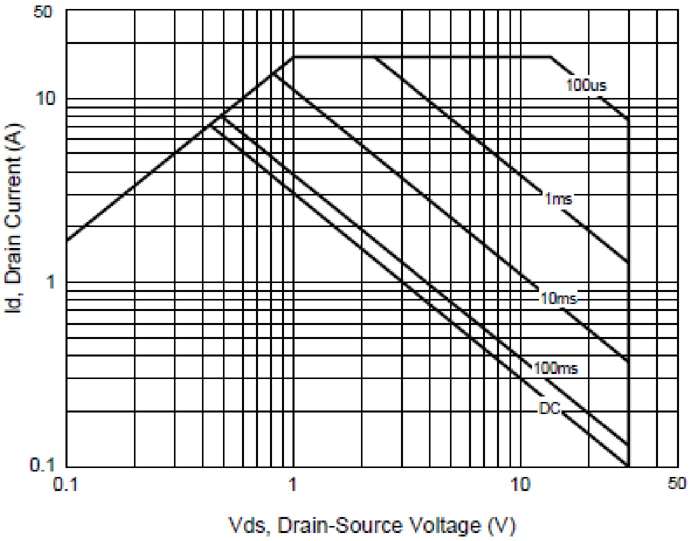


Fig. 6 - Threshold Voltage



Curve Characteristics

Fig. 7 - Safe Operation Area



Ordering Information

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