Features

- High Density Cell Design for Extremely Low $R_{DS(on)}$
- Rugged and Reliable
- 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)

N-CHANNEL MOSFET

Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 104°C/W Junction to Ambient(Note 2)

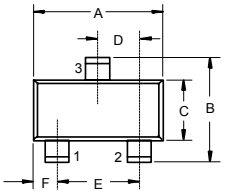
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Volltage	V_{GS}	±20	V
Continuous Drain Current	I_D	5.8	A
Pulsed Drain Current(Note 3)	I_{DM}	30	A
Total Power Dissipation	P_D	1.2	W

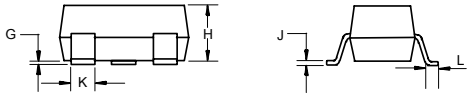
Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. Surface Mounted on FR4 Board, t<5 sec.

3. Repetitive Rating : Pulse Width Limited by Maximum Junction Temperature.

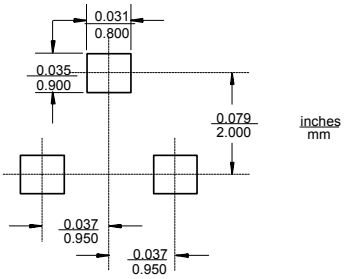
SOT-23



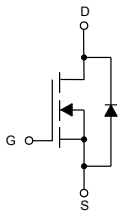


DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020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

Suggested Solder Pad Layout



Internal Structure



1. GATE
2. SOURCE
3. DRAIN

Marking: R4

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	30			V
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V			1	μA
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1		3	V
Drain-Source On-Resistance(Note 4)	$R_{DS(on)}$	V_{GS}=10V, I_D=5.8A			28	mΩ
		V_{GS}=4.5V, I_D=4.8A			42	
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=1A			1	V
Forward tranconductance(Note 4)	g_{FS}	V_{DS}=5V, I_D=5.8A	5			S
Dynamic Characteristics(Note 5)						
Input Capacitance	C_{iss}	V_{DS}=15V,V_{GS}=0V,f=1MHz			820	pF
Output Capacitance	C_{oss}			118		
Reverse Transfer Capacitance	C_{rss}			85		
Gate Resistance	R_g	V_{DS}=0V,V_{GS}=0V,f=1MHz			1.5	Ω
Switching Characteristics(Note 5)						
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V,V_{DS}=15V, R_L=2.6Ω,R_{GEN}=3Ω			6.5	ns
Turn-On Rise Time	t_r			3.1		
Turn-Off Delay Time	$t_{d(off)}$			15.1		
Turn-Off Fall Time	t_f			2.7		

Note 4. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.

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

Curve Characteristics

Fig. 1 - Output Charact eristics

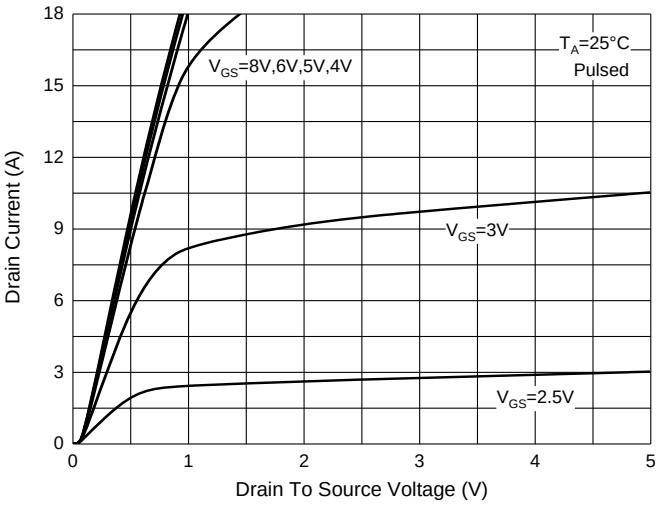


Fig. 2 - Transfer Characteristics

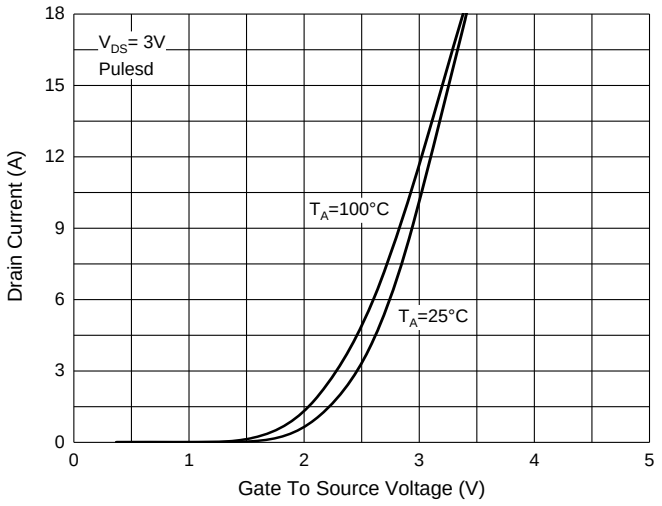


Fig. 3 - $R_{DS(ON)}$—I_D

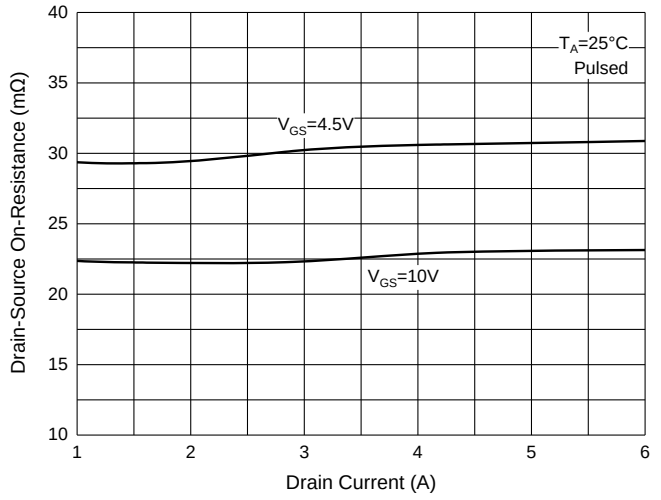


Fig. 4 - $R_{DS(ON)}$—V_{GS}

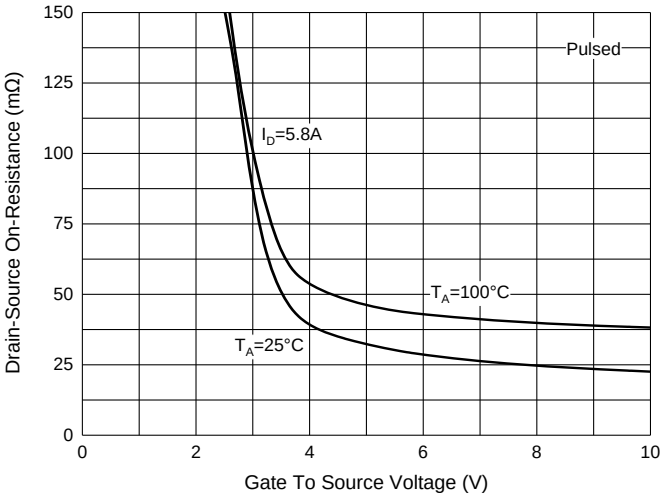


Fig. 5 - I_S—V_{SD}

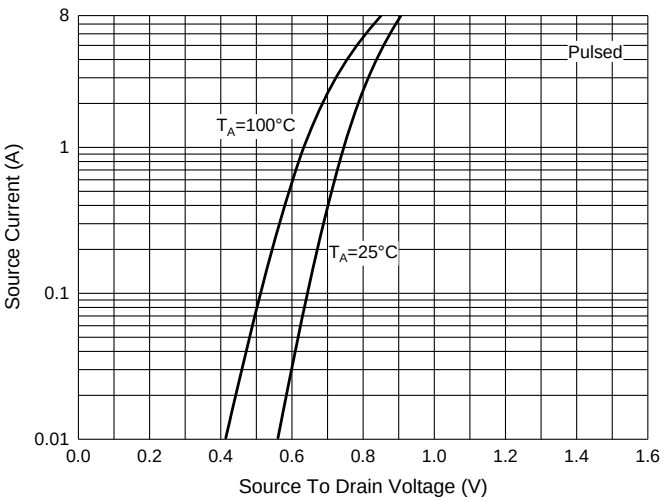
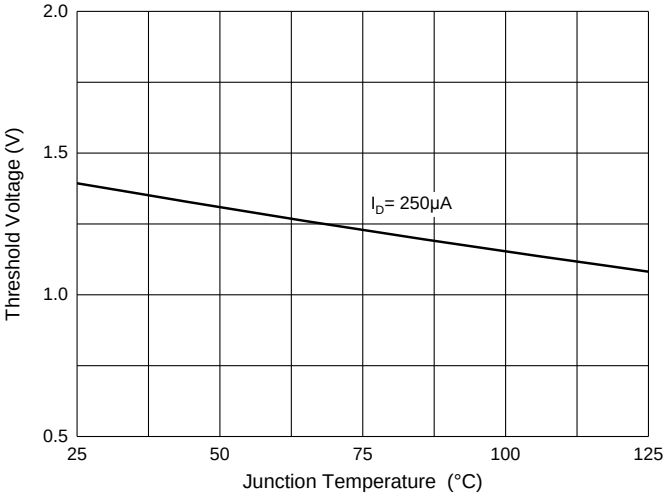


Fig. 6 - Threshold Voltage



Ordering Information

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