

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)

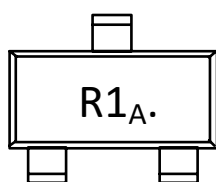
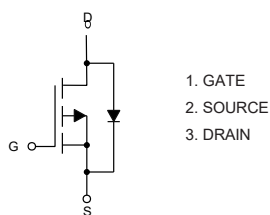
Maximum Ratings

- 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 Voltage	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

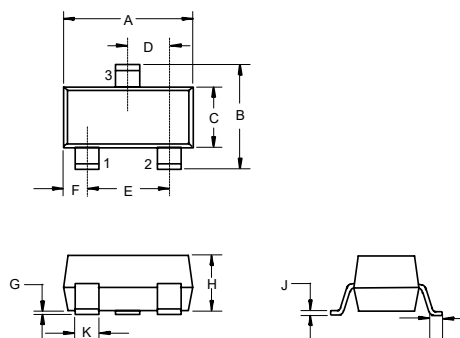
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Internal Structure and Marking Code



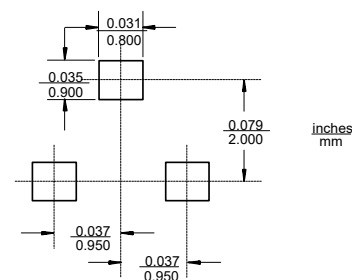
P-CHANNEL MOSFET

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



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-24V, V_{GS}=0V$			-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$			± 100	nA
On Characteristics (Note 2)						
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.7		-1.3	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-4.2A$		41	60	m Ω
		$V_{GS}=-4.5V, I_D=-4A$		47	70	
		$V_{GS}=-2.5V, I_D=-1A$		61	85	
Forward Transconductance	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)						
Total Gate Charge	Q_g	$V_{DS}=-15V, V_{GS}=-10V, I_D=-4.4A$		22		nC
Gate-Source Charge	Q_{gs}			3.28		
Gate-Drain Charge	Q_{gd}			2.11		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=-10V, V_{DS}=-15V, R_L=3.6\Omega, R_{GEN}=6\Omega$			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 $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

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

Curve Characteristics

Fig. 1 - Output Characteristics

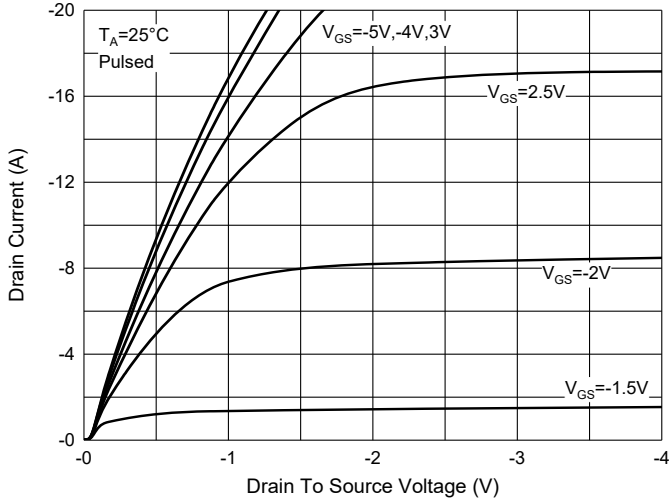


Fig. 2 - Transfer Characteristics

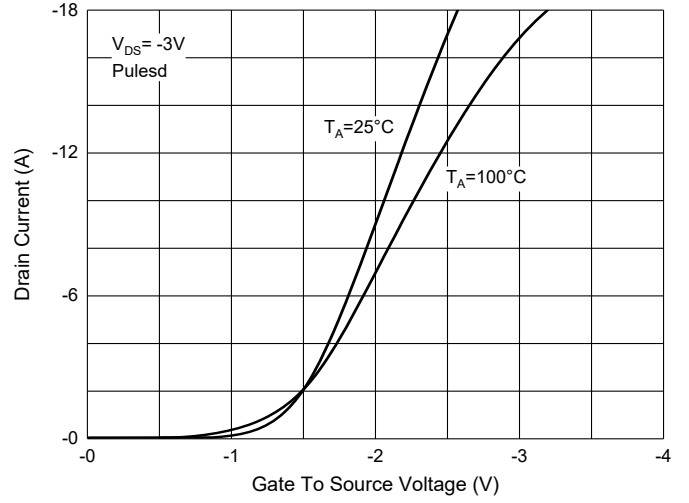


Fig. 3 - $R_{DS(ON)} - I_D$

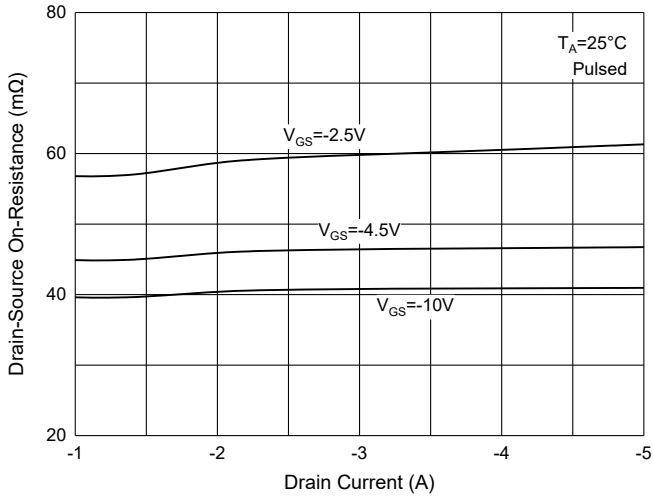


Fig. 4 - $R_{DS(ON)} - V_{GS}$

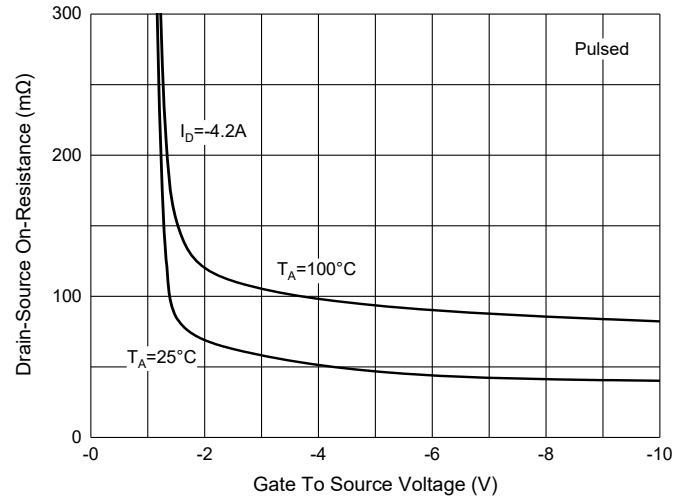


Fig. 5 - $I_S - V_{SD}$

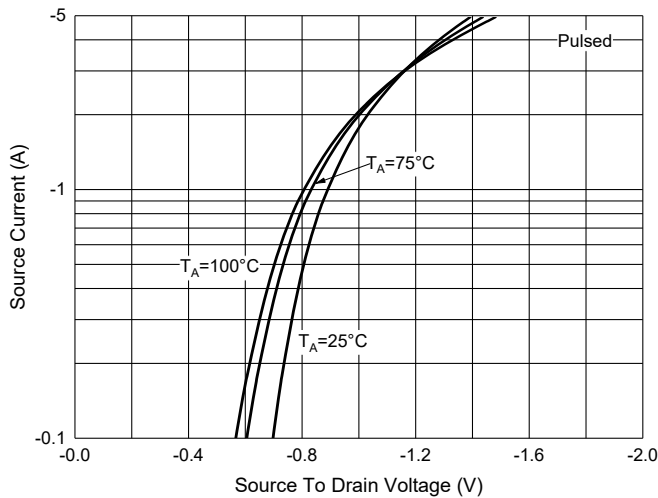
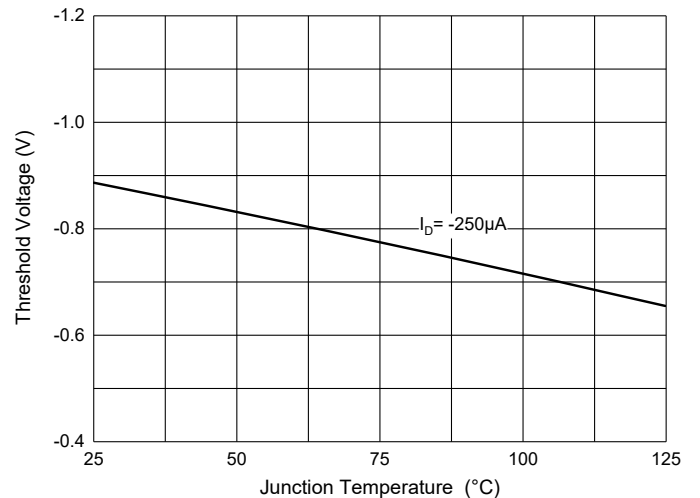
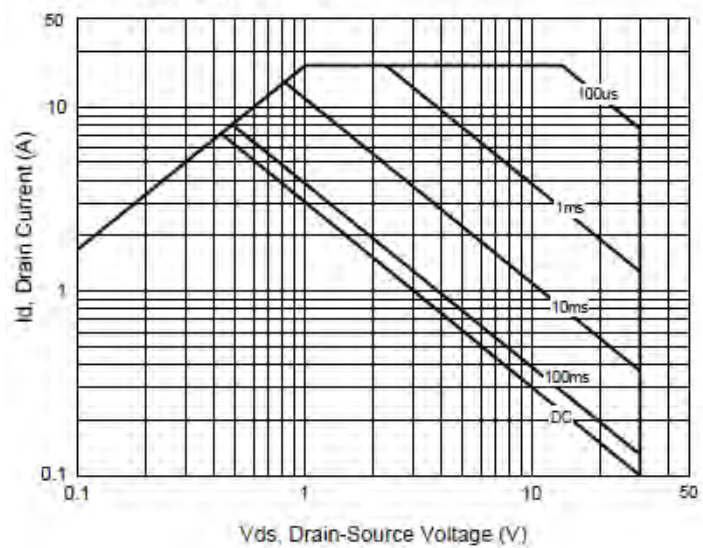


Fig. 6 - Threshold Voltage



Curve Characteristics

Fig. 7 - Safe Operation Area



Ordering Information

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

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