Features

- Excellent Stability and Uniformity
- High Dense Cell Design for Extremely Low RDS(ON)
- 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

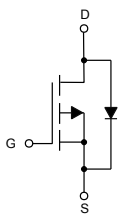
Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 90°C/W Junction to Ambient(Note 2)

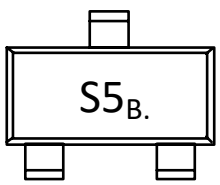
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±10	V
Drain Current-Continuous	I_D	-4.2	A
Drain Current-Pulse(Note 2)	I_{DM}	-21	A
Power Dissipation	P_D	1.4	W

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

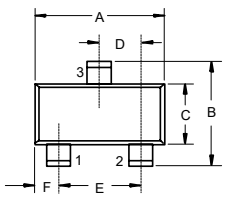
Internal Structure and Marking Code

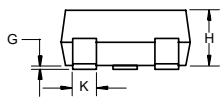


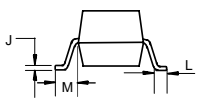
1. GATE
2. SOURCE
3. DRAIN



SOT-23

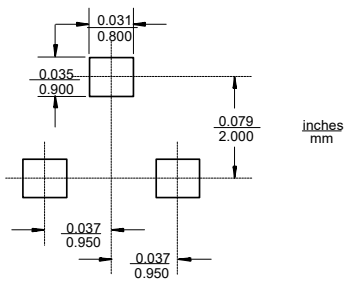






DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	
M	0.022 REF		0.55 REF		

Suggested Solder Pad Layout



ELECTRICAL CHARACTERISTICS (Ta=25℃ 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	-20			V
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-0.5		-0.9	V
Gate-Body Leakage Current	I_{GSS}	V_{GS} =±10V, V_{DS}=0V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-20V, V_{GS}=0V			-1	μA
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-4.5V, I_D=-4A		30	39	mΩ
		V_{GS}=-2.5V, I_D=-3A		38	49	
		V_{GS}=-1.8V, I_D=-2A		51	63	
Forward Tranconductance	g_{FS}	V_{DS}=-5V, I_D=-4.1A	6			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-4V,V_{GS}=0V, f=1MHz		821		pF
Output Capacitance	C_{oss}			149		
Reverse Transfer Capacitance	C_{rss}			126		
Total Gate Charge	Q_g	V_{DS}=-4V,V_{GS}=-4.5V,I_D=-4.1A		8.58		nC
	Q_g	V_{DS}=-4V,V_{GS}=-2.5V,I_D=-4.1A		4.7		
Gate-Source Chage	Q_{gs}	V_{DS}=-4V,V_{GS}=-2.5V,I_D=-4.1A		1.2		
Gage-Drain Charge	Q_{gd}	V_{DS}=-4V,V_{GS}=-2.5V,I_D=-4.1A		1.4		
Gate Resistance	R_g	f=1MHz		14.1		Ω
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-4V,V_{GEN}=-4.5V,R_L=1.2Ω, I_D=-3.3A,R_G=1Ω		8.6		ns
Turn-On Rise Time	t_r			12		
Turn-Off Delay Time	$t_{d(off)}$			61		
Turn-Off Fall Time	t_f			26		
Drain-Source Body Diode Characteristics						
Continuous Source-Drain Diode Current	I_S	T_C=25°C			-4.2	A
Pulse Diode Forward Current(Note 3)	I_{SM}				-10	
Body Diode Voltage	V_{SD}	I_F=-3.3A		-0.8	-1.2	V

Note:

2. Device mounted on 1” x 1” FR-4 PCB with high coverage 2oz. Copper, single sided.
3. Pulse Test: Pulse Width≤300μs,Duty Cycle≤2%.

Curve Characteristics

Fig. 1 - $R_{DS(ON)}$—V_{GS}

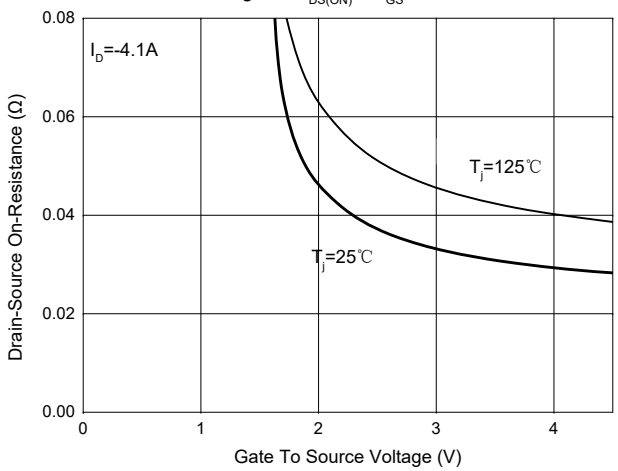


Fig. 1 - Current disspation

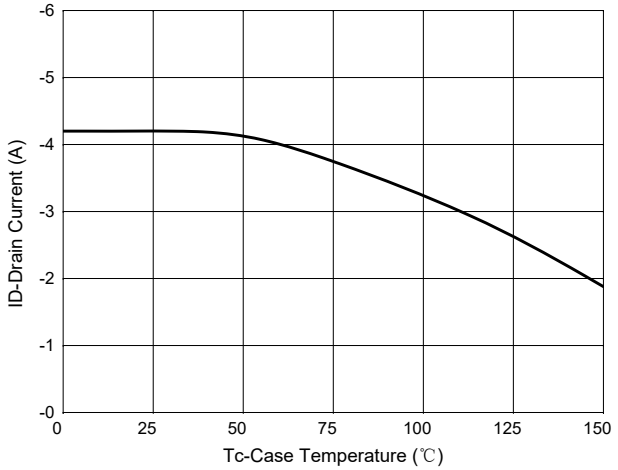


Fig. 3 - Typical Output Characteristics

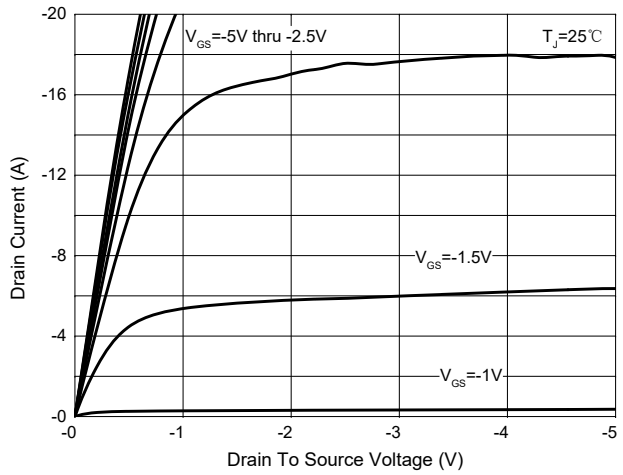


Fig. 4 - $R_{DS(ON)}$—I_D

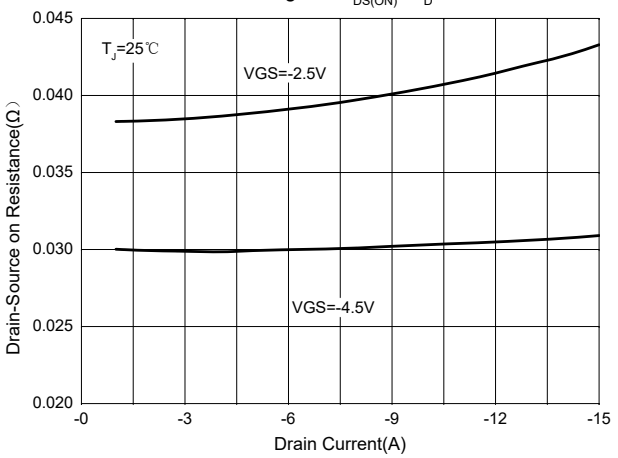
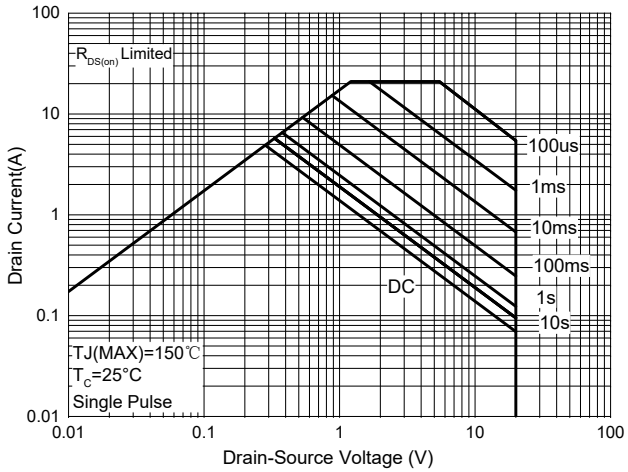


Fig. 5 - Safe Operation Area



Ordering Information

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