

### Features

- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device

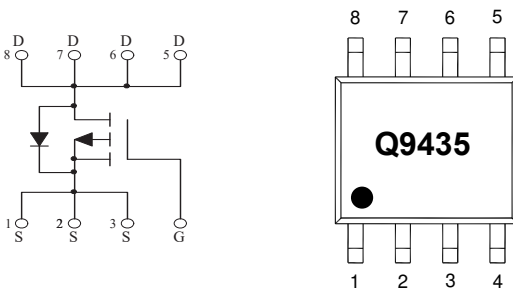
### Maximum Ratings

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 89°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current	$I_D$	-5.1	A
Pulsed Drain Current	$I_{DM}$	-20	A
Single Pulse Avalanche Energy <sup>(Note 1)</sup>	$E_{AS}$	20	mJ
Total Power Dissipation	$P_D$	1.4	W

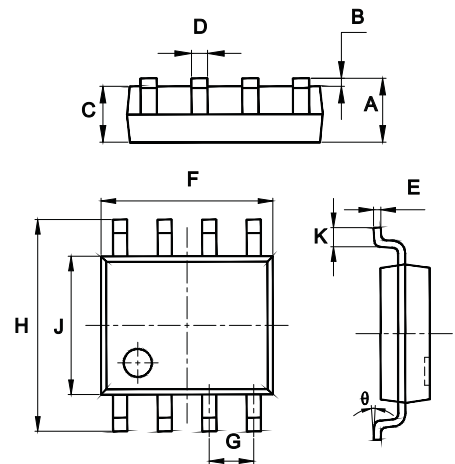
Note: 1.  $E_{AS}$  condition:  $V_{DD} = -50V$ ,  $L = 0.5mH$ ,  $R_G = 25\Omega$ , Starting  $T_J = 25^\circ C$

### Internal Structure and Marking Code



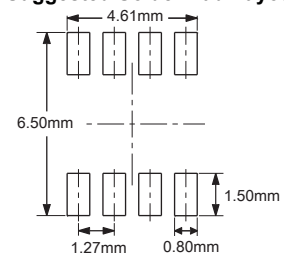
## P-Channel Power MOSFET

### SOP-8



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.053	0.069	1.35	1.75	
B	0.004	0.010	0.10	0.25	
C	0.053	0.061	1.35	1.55	
D	0.013	0.020	0.33	0.51	
E	0.007	0.010	0.17	0.25	
F	0.185	0.200	4.70	5.10	
G	0.050		1.270		TYP.
H	0.228	0.244	5.80	6.20	
J	0.150	0.157	3.80	4.00	
K	0.016	0.050	0.40	1.27	
$\theta$	0°	8°	0°	8°	

### Suggested Solder Pad Layout



**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-24V, V_{GS}=0V$			-1	$\mu A$
Gate-Threshold Voltage <sup>(Note 2)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0	-1.5	-2.0	V
Drain-Source On-Resistance <sup>(Note 2)</sup>	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-4.6A$		50	60	m $\Omega$
		$V_{GS}=-6V, I_D=-4.1A$		60	70	
		$V_{GS}=-4.5V, I_D=-2A$		65	105	
Forward Transconductance <sup>(Note 2)</sup>	$g_{FS}$	$V_{DS}=-15V, I_D=-4.6A$	5			S
<b>Dynamic Characteristics<sup>(Note3)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-15V, V_{GS}=0V$ $f=1MHz$		720		pF
Output Capacitance	$C_{oss}$			79		
Reverse Transfer Capacitance	$C_{rss}$			65		
Total Gate Charge	$Q_g$	$V_{DD}=-15V, V_{GS}=-10V$ $I_D=-4.6A$		14.3		nC
Gate-Source Charge	$Q_{gs}$			3.2		
Gate-Drain Charge	$Q_{gd}$			2		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-15V, V_{GS}=-10V$ $I_D=-1A$ $R_G=3\Omega, R_D=15\Omega$		7.5		ns
Turn-On Rise Time	$t_r$			38		
Turn-Off Delay Time	$t_{d(off)}$			32		
Turn-Off Fall Time	$t_f$			24		
Gate Resistance	$R_g$	$f=1MHz, V_{DS}=0V, V_{GS}=0V$		5.8		$\Omega$
<b>Drain-Source Body Diode Characteristics</b>						
Body Diode Voltage <sup>(Note 2)</sup>	$V_{SD}$	$I_{SD}=-2.6A, V_{GS}=0V$			-1.2	V
Continuous Drain-Source Diode Forward Current	$I_D$				-5.1	A
Pulsed Drain-Source Diode Forward Current	$I_{SM}$				-20	A

Notes :

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

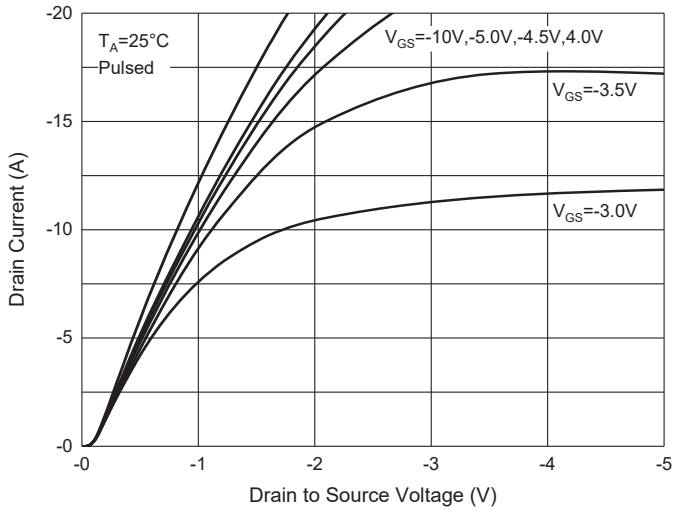


Fig. 2 - Transfer Characteristics

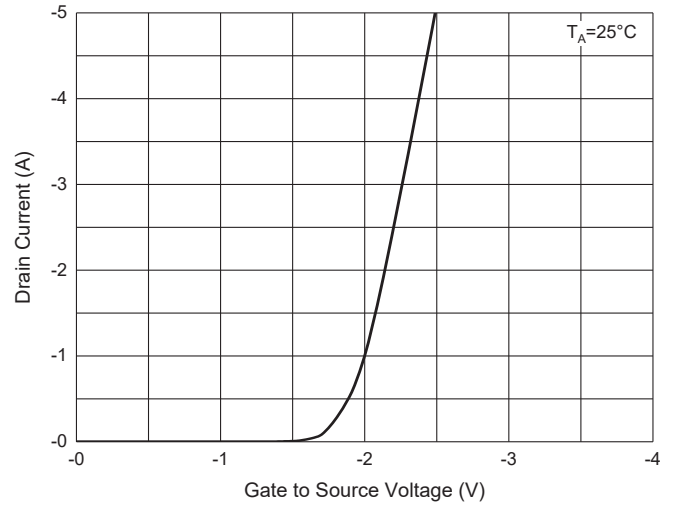


Fig. 3 -  $R_{DS(ON)} - I_D$

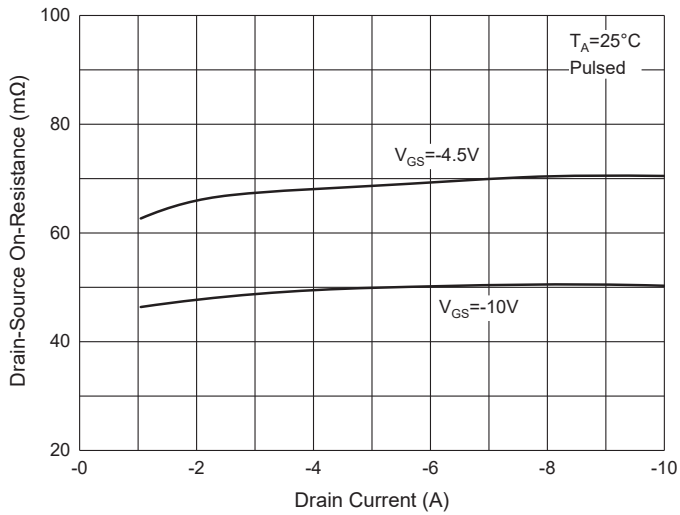


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

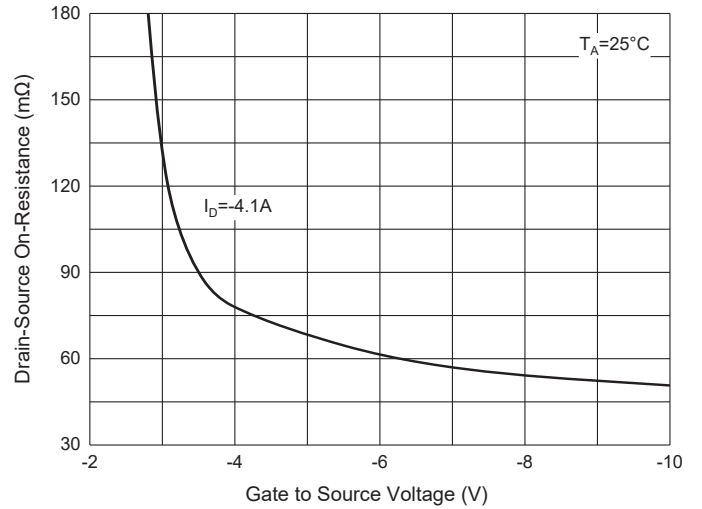
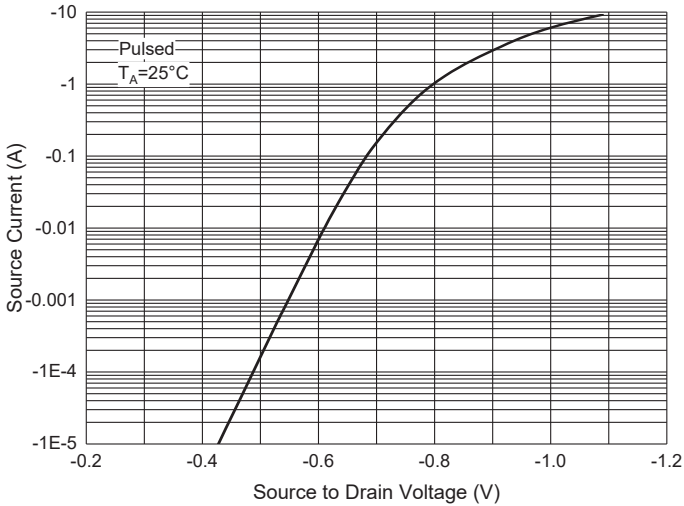


Fig. 5 -  $I_S - V_{SD}$



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 4Kpcs/Reel

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