

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 Available Upon Request By Adding Suffix "-HF"

P-Channel Power MOSFET

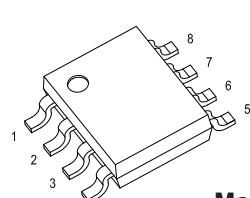
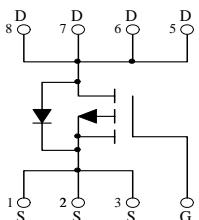
Maximum Ratings

- 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}	± 20	V
Drain Current	I_D	-5.1	A
Pulsed Drain Current	I_{DM}	-20	A
Single Pulse Avalanche Energy ^(Note 1)	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 $T_J = 25^\circ C$

Equivalent Circuit



Marking: Q9435

SOP-8

DIMENSIONS

DIM	INCHES		MM		NOTE
	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	
θ	0°	8°	0°	8°	

Suggested Solder Pad Layout

Dimensions for the suggested solder pad layout:

- Total width: 4.61mm
- Total height: 6.50mm
- Pad width: 1.27mm
- Pad height: 0.80mm
- Pad pitch: 1.50mm

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-24V, V_{GS}=0V$			-1	μA
Gate-Threshold Voltage ^(Note 2)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0	-1.5	-2.0	V
Drain-Source On-Resistance ^(Note 2)	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-4.6A$		50	60	$m\Omega$
		$V_{GS}=-6V, I_D=-4.1A$		60	70	
		$V_{GS}=-4.5V, I_D=-2A$		65	105	
Forward Tranconductance ^(Note 2)	g_{FS}	$V_{DS}=-15V, I_D=-4.6A$	5			S
Dynamic Characteristics^(Note 3)						
Total Gate Charge	Q_g	$V_{DD}=-15V, V_{GS}=-10V$ $I_D=-4.6A$			40	nC
Gate-Source Charge	Q_{gs}			4		
Gate-Drain Charge	Q_{gd}			6.3		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-15V, V_{GS}=-10V$ $I_D=-1A$ $R_G=6\Omega, R_D=15\Omega$			30	ns
Turn-On Rise Time	t_r				60	
Turn-Off Delay Time	$t_{d(off)}$				120	
Turn-Off Fall Time	t_f				100	
Gate Resistance	R_g	$f=1MHz, V_{DS}=0V, V_{GS}=0V$		5.8		Ω
Drain-Source Body Diode Characteristics						
Body Diode Voltage ^(Note 2)	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

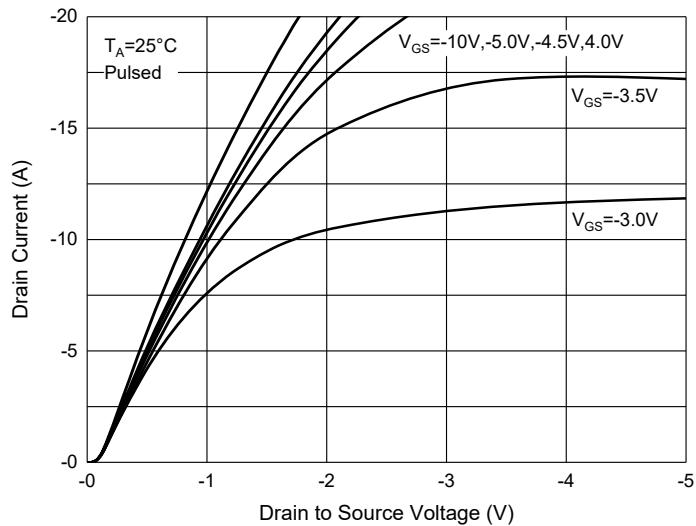


Fig. 2 - Transfer Characteristics

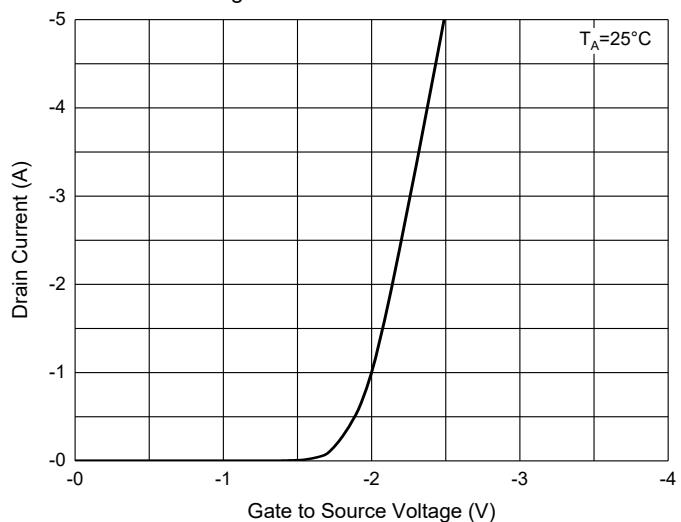


Fig. 3 - $R_{DS(ON)} - I_D$

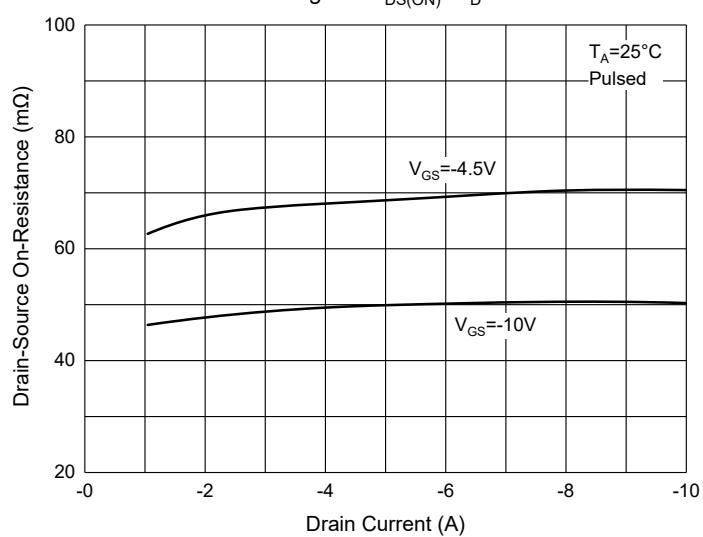


Fig. 4 - $R_{DS(ON)} - V_{GS}$

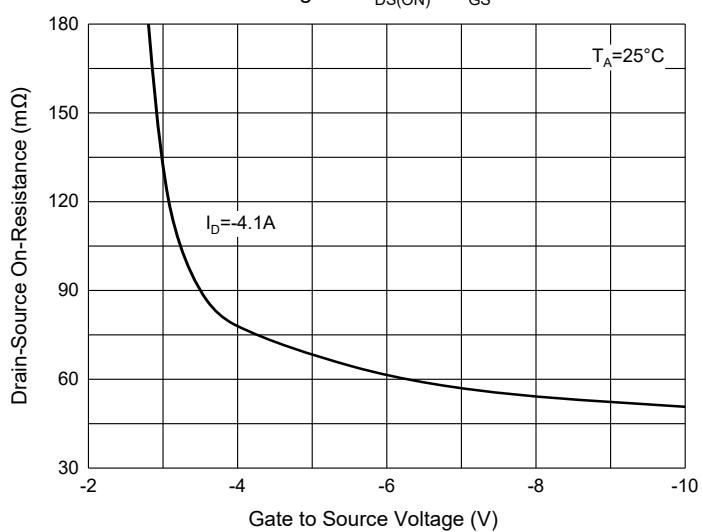
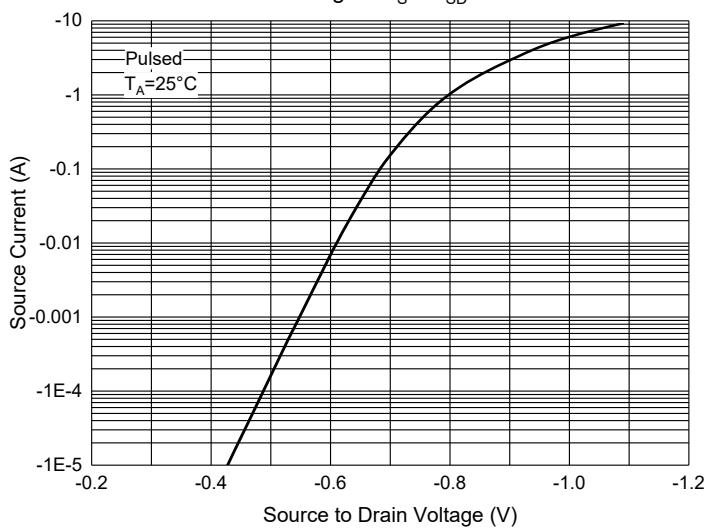


Fig. 5 - $I_S - V_{SD}$



Ordering Information

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

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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