

**Features**

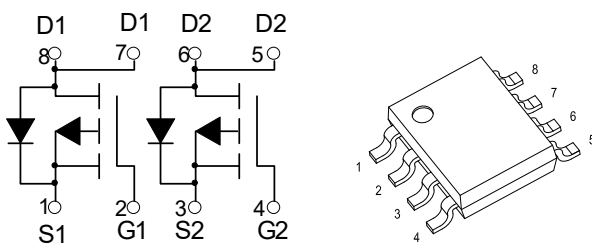
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"

**Maximum Ratings**

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 50°C/W Junction to Ambient<sup>(Note 1)</sup>

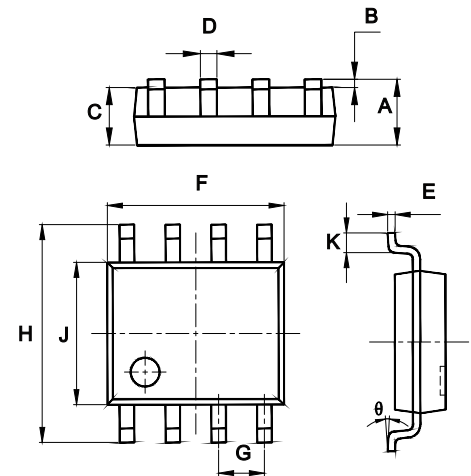
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	-5.0	A
Total Power Dissipation	$P_D$	2.5	W

**Internal Structure:**



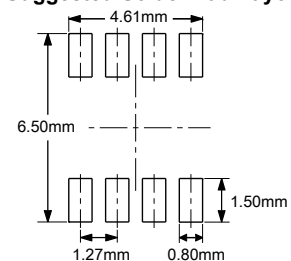
**Dual  
P-Channel  
Power MOSFET**

**SOP-8**



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**



**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	$I_{DSS}$	$V_{DS}=-30V, V_{GS}=0V$			-1	$\mu A$
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0	-1.5	-2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-4.9A$		50	60	m $\Omega$
		$V_{GS}=-4.5V, I_D=-3.7A$		66	90	
Forward Transconductance <sup>(Note 2)</sup>	$g_{FS}$	$V_{DS}=-10V, I_D=-4.9A$	6			S
Diode Forward Voltage <sup>(Note 2)</sup>	$V_{SD}$	$V_{GS}=0V, I_S=-1.7A$			-1.2	V
<b>Dynamic Characteristics<sup>(Note 3)</sup></b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{GEN}=-10V, V_{DD}=-15V, I_D\approx -1A$ $R_G=6\Omega, R_L=15\Omega$			15	ns
Turn-On Rise Time	$t_r$				20	
Turn-Off Delay Time	$t_{d(off)}$				80	
Turn-Off Fall Time	$t_f$				40	
Total Gate Charge	$Q_g$	$V_{GS}=-10V, V_{DS}=-15V$ $I_D=-4.9A$			25	nC
Gate-Source Charge	$Q_{gs}$			4		
Gate-Drain Charge	$Q_{gd}$			2		

**Notes :**

1. Surface Mounted on FR4 Board,  $t \leq 10$  sec.
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

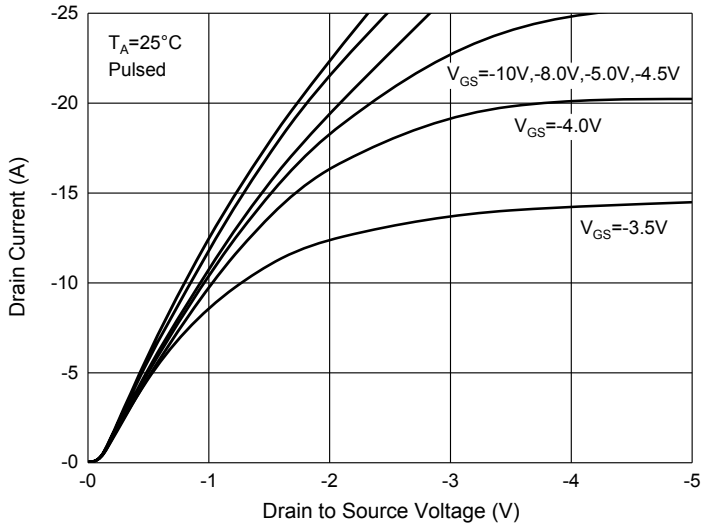


Fig. 2 - Transfer Characteristics

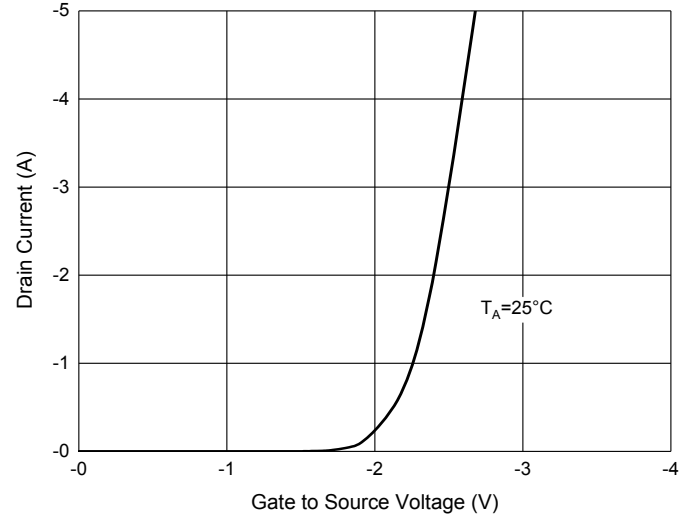


Fig. 3 -  $R_{DS(ON)} - I_D$

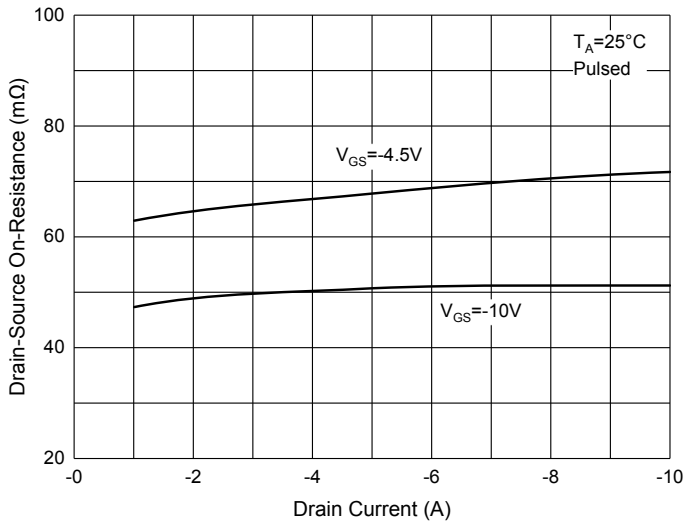


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

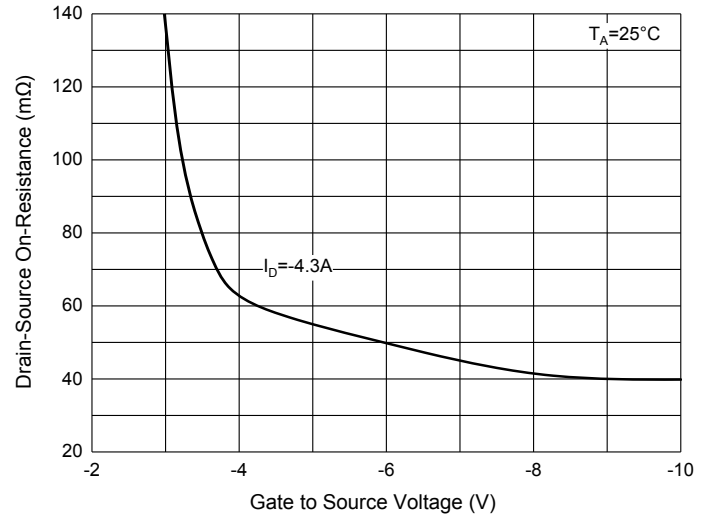


Fig. 5 -  $I_S - V_{SD}$

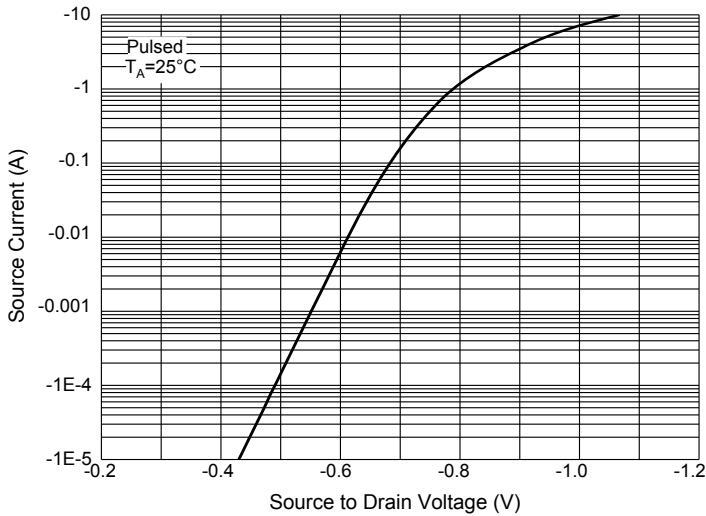
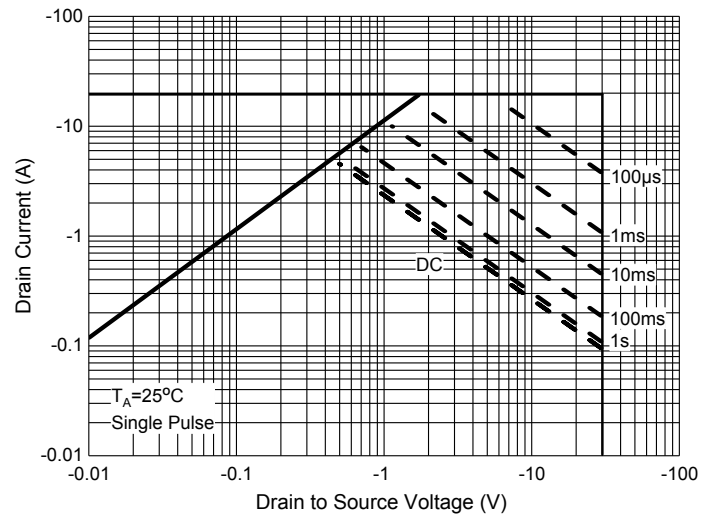


Fig. 6 - Safe Operation Area



## 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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