

**Features**

- 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**

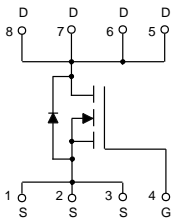
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 4.2°C/W Junction to Case (Note 2)

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	30	V	
Gate-Source Voltage	$V_{GS}$	±20	V	
Continuous Drain Current	$I_D$	$T_C=25^\circ C$	16	A
		$T_C=100^\circ C$	11	A
Pulsed Drain Current (Note 3)	$I_{DM}$	50	A	
Single Pulse Avalanche Energy (Note 4)	$E_{AS}$	70	mJ	
Total Power Dissipation	$P_D$	30	W	

**Note:**

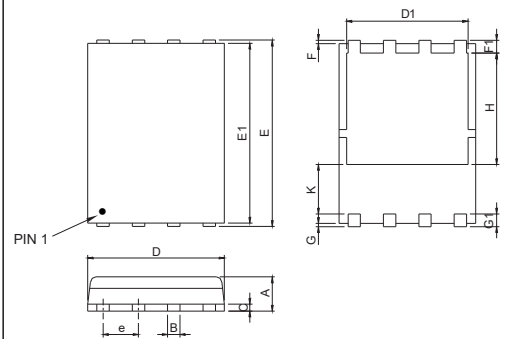
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Surface Mounted on FR4 Board,  $t \leq 10$  sec.
3. Pulse Width Limited by Maximum Junction Temperature.
4. EAS Condition:  $T_J=25^\circ C, V_{DD}=15V, V_G=10V, L=0.1mH, R_G=25\Omega$ .

**Internal Structure**



**N-CHANNEL  
MOSFET**

**DFN5060-8L**



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.035	0.047	0.90	1.20	
B	0.012	0.020	0.30	0.51	
C	0.007	0.010	0.19	0.25	
D	0.189	0.209	4.80	5.30	
D1	0.157	0.173	4.00	4.40	
E	0.232	0.244	5.90	6.20	
E1	0.217	0.228	5.50	5.80	
e	0.050		1.27		TYP.
F	0.002	0.012	0.05	0.30	
F1	0.014	0.030	0.35	0.75	
G	0.002	0.012	0.05	0.30	
G1	0.014	0.030	0.35	0.75	
H	0.131	0.154	3.34	3.90	
K	0.030	-----	0.762	-----	

**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	36		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 <sup>(Note 5)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.6	3	V
Drain-Source On-Resistance <sup>(Note 5)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=10A$		7	9	m $\Omega$
		$V_{GS}=4.5V, I_D=10A$		10.5	14	
Forward Transconductance <sup>(Note 5)</sup>	$g_{FS}$	$V_{DS}=5V, I_D=8A$	15			S
<b>Dynamic Characteristics<sup>(Note 6)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		1530		pF
Output Capacitance	$C_{oss}$			250		
Reverse Transfer Capacitance	$C_{rss}$			198		
Total Gate Charge	$Q_g$	$V_{DS}=15V, V_{GS}=10V, I_D=9A$		15		nC
Gate-Source Charge	$Q_{gs}$			3		
Gate-Drain Charge	$Q_{gd}$			4.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=15V, I_D=10A$ $V_{GS}=10V, R_{GEN}=1.8\Omega$		10		ns
Turn-On Rise Time	$t_r$			8		
Turn-Off Delay Time	$t_{d(off)}$			30		
Turn-Off Fall Time	$t_f$			5		
<b>Drain-Source Body Diode Characteristics</b>						
Continuous Body Diode Current	$I_S$				25	A
Body Diode Voltage <sup>(Note 5)</sup>	$V_{SD}$	$I_{SD}=10A, V_{GS}=0V$		0.85	1.2	V
Reverse Recovery Time	$t_{rr}$	$T_J=25^\circ C, I_F=10A$ $di/dt=100A/\mu s$		22	35	ns
Reverse Recovery Charge	$Q_{rr}$			12	20	nC
Forward Turn-On Time	$t_{on}$	Intrinsic Turn-On Time is Negligible (Turn-On is Dominated by LS+LD)				

Note 5. Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

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

**Curve Characteristics**

Fig. 1 - Output Characteristics

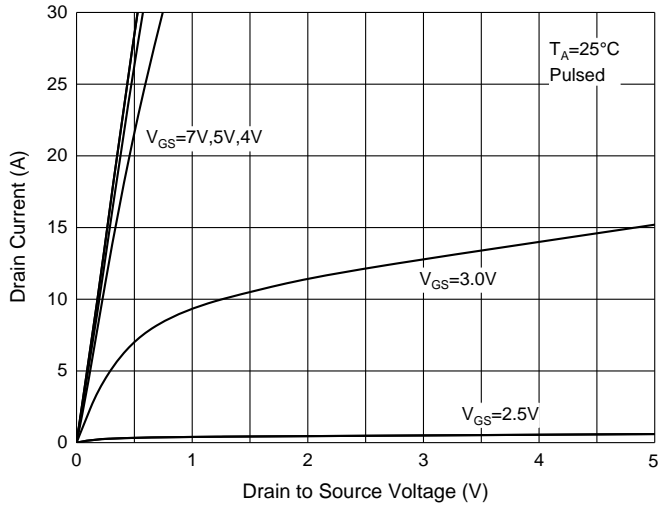


Fig. 2 - Transfer Characteristics

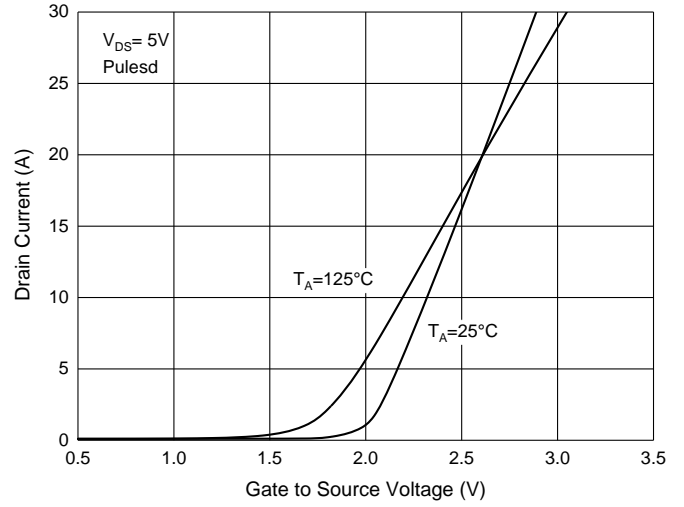


Fig. 3 -  $R_{DS(ON)} - I_D$

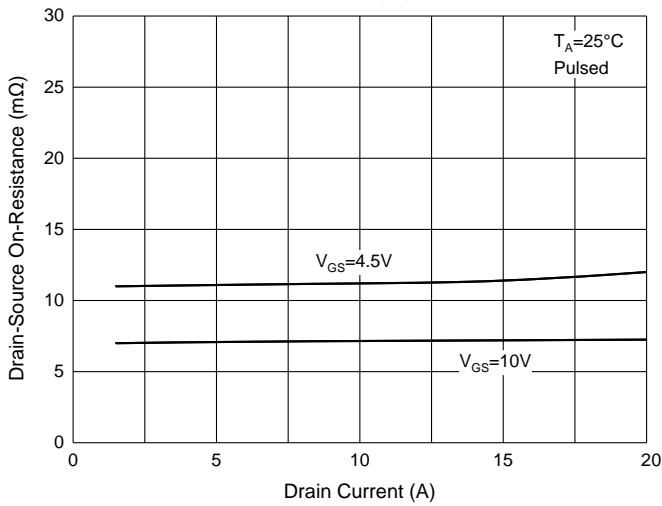


Fig. 4 -  $I_S - V_{SD}$

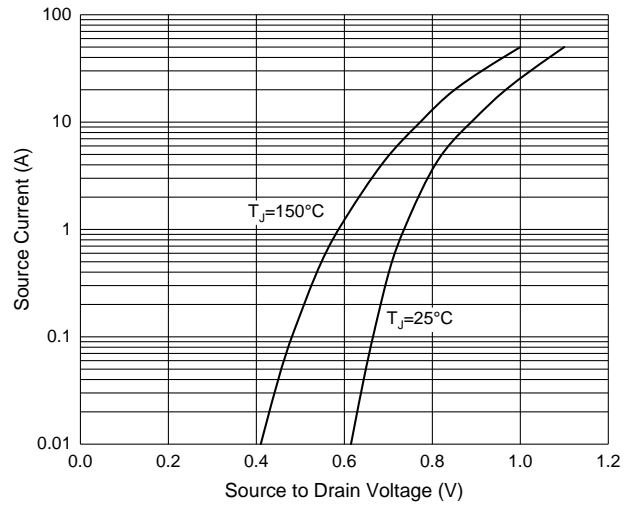


Fig. 5 -  $R_{DS(ON)} - \text{Temperature}$

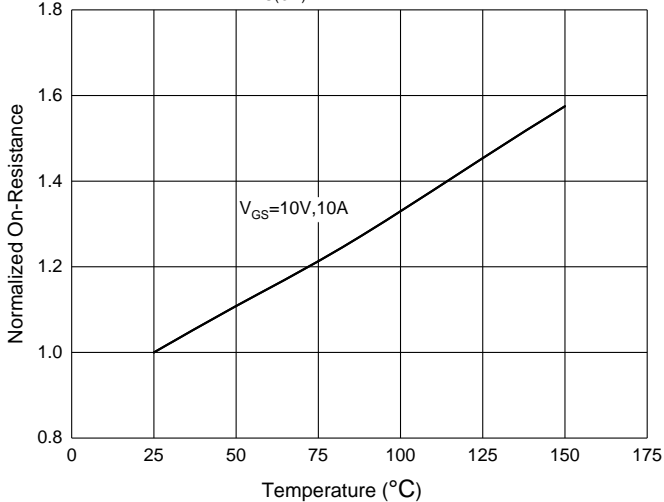
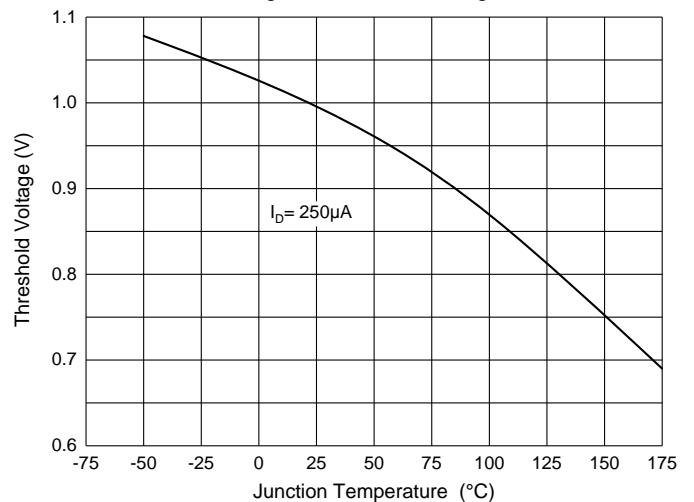


Fig. 6 - Threshold Voltage



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 2.5Kpcs/Reel

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