

**Features**

- High Density Cell Desihn for Low  $R_{DS(on)}$
- Fully Characterized Avalanche Voltage and Current
- Excellent Package for Good Heat Dissipation
- Special Process Technology for High ESD Capability
- 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**

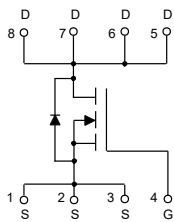
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 62.5°C/W Junction to Ambient<sup>(Note 2)</sup>

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltlage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	100	A
Pulsed Drain Current	$I_{DM}$	400	A
Total Power Dissipation <sup>(Note 2)</sup>	$P_D$	2	W

Note:

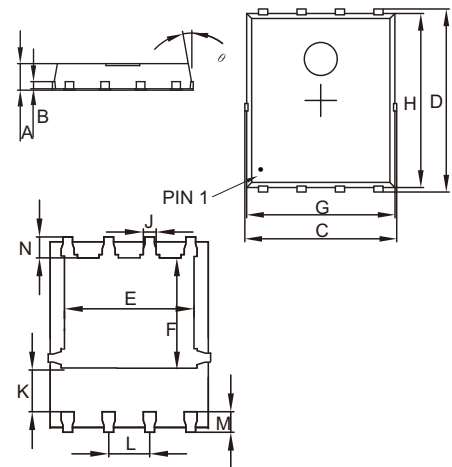
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Mounted on a Glass Epoxy Board of 25.4mm x 25.4mm x 0.8mm.

**Internal Structure**



**N-CHANNEL  
MOSFET**

**DFN5060**



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.031	0.047	0.80	1.20	
B	0.010		0.254		TYP.
C	0.193	0.222	4.90	5.64	
D	0.232	0.250	5.90	6.35	
E	0.148	0.167	3.75	4.25	
F	0.126	0.154	3.20	3.92	
G	0.189	0.213	4.80	5.40	
H	0.222	0.239	5.65	6.06	
K	0.045	0.059	1.15	1.50	
J	0.012	0.020	0.30	0.50	
L	0.046	0.054	1.17	1.37	
M	0.012	0.028	0.30	0.71	
N	0.016	0.028	0.40	0.71	

**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 <sup>(Note 3)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2	1.7	2.5	V
Drain-Source On-Resistance <sup>(Note 3)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$		1.9	2.5	m $\Omega$
		$V_{GS}=4.5V, I_D=10A$		2.9	3.5	
Forward Transconductance <sup>(Note 3)</sup>	$g_{FS}$	$V_{DS}=10V, I_D=20A$	32			S
<b>Dynamic Characteristics<sup>(Note 4)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		5000		pF
Output Capacitance	$C_{oss}$			1135		
Reverse Transfer Capacitance	$C_{rss}$			563		
Total Gate Charge	$Q_g$	$V_{DS}=15V, V_{GS}=10V, I_D=20A$		38		nC
Gate-Source Charge	$Q_{gs}$			9		
Gate-Drain Charge	$Q_{gd}$			13		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=15V, R_L=15\Omega$ $V_{GS}=10V, R_G=2.5\Omega$		26		ns
Turn-On Rise Time	$t_r$			24		
Turn-Off Delay Time	$t_{d(off)}$			91		
Turn-Off Fall Time	$t_f$			39		
<b>Drain-Source Body Diode Characteristics</b>						
Continuous Body Diode Current	$I_S$				100	A
Pulsed Diode Forward Current	$I_{SM}$				400	
Body Diode Voltage <sup>(Note 3)</sup>	$V_{SD}$	$I_S=10A, V_{GS}=0V$			1.2	V

 Note 3. Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

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

**Curve Characteristics**

Fig. 1 - Output Characteristics

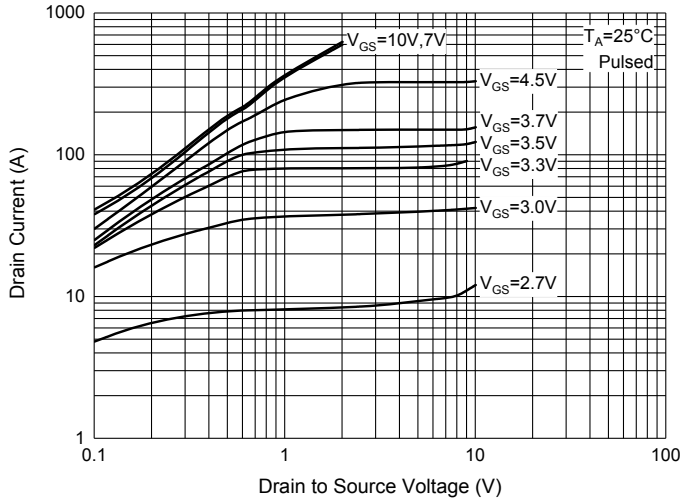


Fig. 2 - Transfer Characteristics

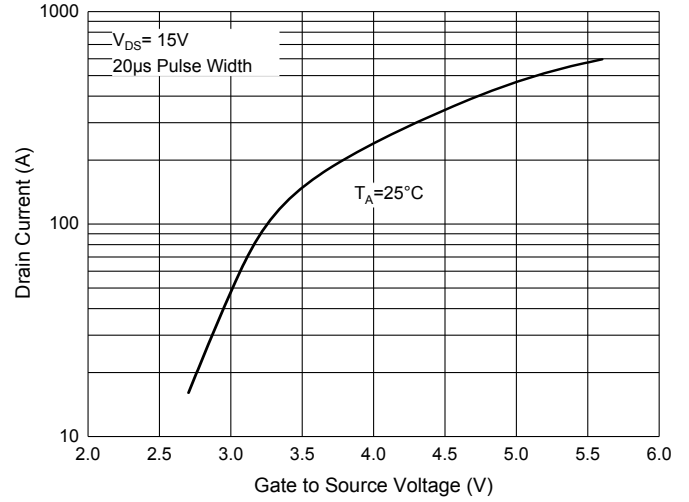


Fig. 3 -  $R_{DS(ON)} - I_D$

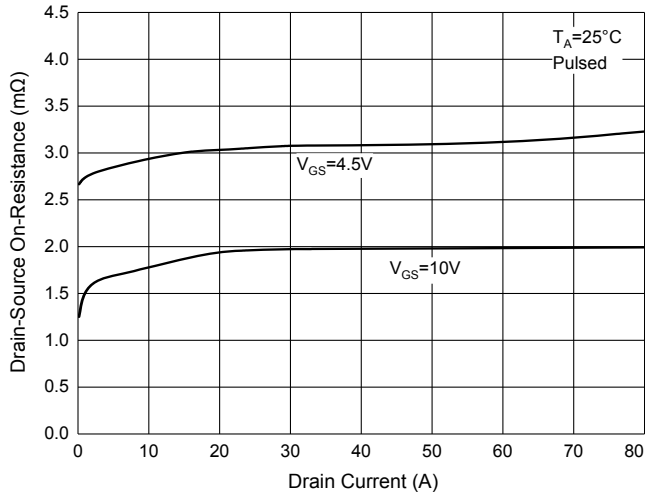


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

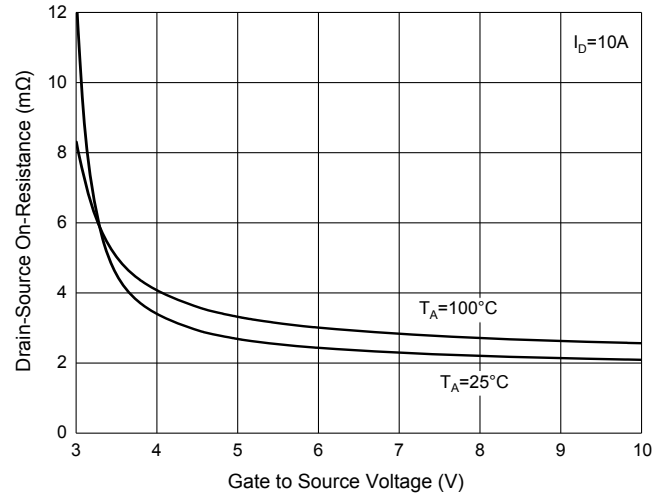


Fig. 5 -  $I_S - V_{SD}$

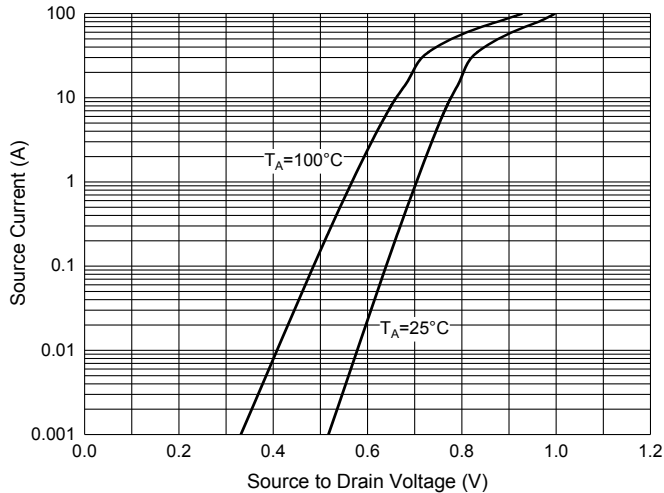
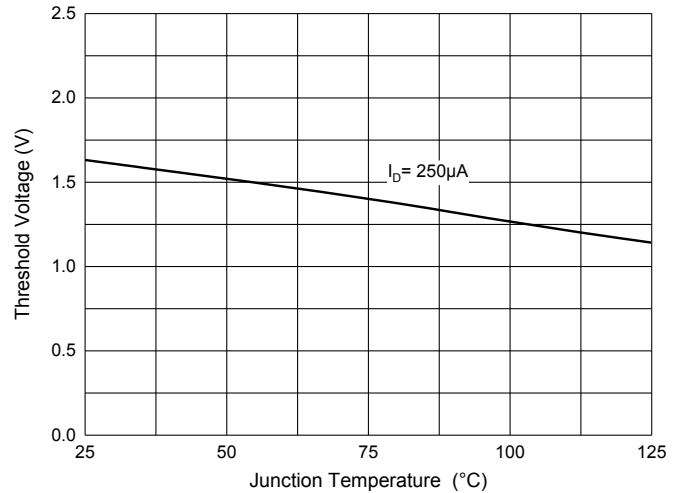


Fig. 6 - Threshold Voltage



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 5Kpcs/Reel

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