

Features

- High Dense Cell Design For Extremely Low $R_{DS(ON)}$
- Rugged and reliable
- High Speed Switching
- 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

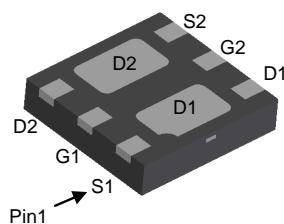
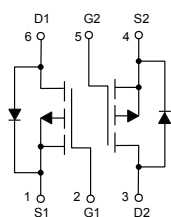
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 89°C/W Junction to Ambient^(Note 2)

Parameter	Symbol	Rating	Unit
Drain -source Voltage	V_{DS}	-20	V
Gate -Source Voltage	V_{GS}	±10	V
Drain Current-Continuous	I_D	-3.8	A
Drain Current-Pulse ^(Note 2)	I_{DM}	-13	A
Power Dissipation	P_D	1.4	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.

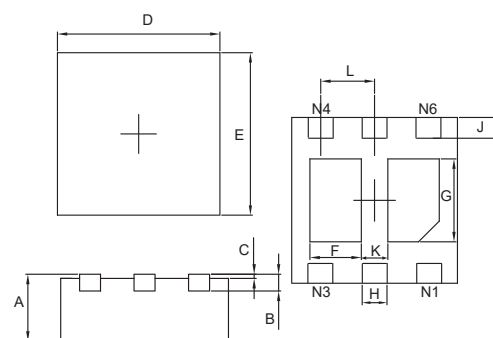
Internal Structure



Bottom View

P-Channel MOSFET

DFN2020-6L



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.030	0.034	0.750	0.850	
B	0.008		0.200		TYP.
C	0.000	0.002	0.000	0.050	
D	0.077	0.081	1.950	2.050	
E	0.077	0.081	1.950	2.050	
F	0.017	0.027	0.440	0.690	
G	0.033	0.043	0.840	1.090	
H	0.010	0.014	0.250	0.350	
J	0.007	0.015	0.175	0.375	
K	0.010	0.014	0.250	0.350	
L	0.026		0.650		TYP.

ELECTRICAL CHARACTERISTICS (Ta=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 =-250μA	-20			V
Gate-Threshold Voltage ^(Note 4)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.5	-0.7	-0.9	V
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	μA
Drain-Source On-Resistance ^(Note 4)	R _{DS(on)}	V _{GS} =-4.5V, I _D =-1.9A		49	70	mΩ
		V _{GS} =-2.5V, I _D =-1.9A		59	90	
Forward Tranconductance ^(Note 4)	g _{FS}	V _{DS} =-5V, I _D =-2.8A		8		S
Diode Forward Current ^(Note 3)	I _S				-0.75	S
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-0.75A			-1.2	V
Dynamic Characteristics ^(Note 5)						
Input Capacitance	C _{iss}	V _{DS} =-6V,V _{GS} =0V, f=1MHz		880		pF
Output Capacitance	C _{oss}			270		
Reverse Transfer Capacitance	C _{rss}			175		
Switching Characteristics ^(Note 5)						
Turn-On Delay Time	t _{d(on)}	V _{DD} =-6V,V _{GS} =-4.5V, I _D =-1A,R _{GEN} =6Ω		11	20	ns
Turn-On Rise Time	t _r			5	10	
Turn-Off Delay Time	t _{d(off)}			32	65	
Turn-Off Fall Time	t _f			23	45	
Total Gate Charge	Q _g	V _{DS} =-6V,V _{GS} =-4.5V,I _D =-2.8A		11	14.5	nC
Gate-Source Chage	Q _{gs}			1.5		
Gage-Drain Charge	Q _{gd}			2.1		

Note:

2. Surface Mounted on FR4 Board, $t < 5$ sec.

3. Repetitive Rating : Pulse width limited by maximum junction temperature.

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

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

Curve Characteristics

Fig. 1 - Output Characteristics

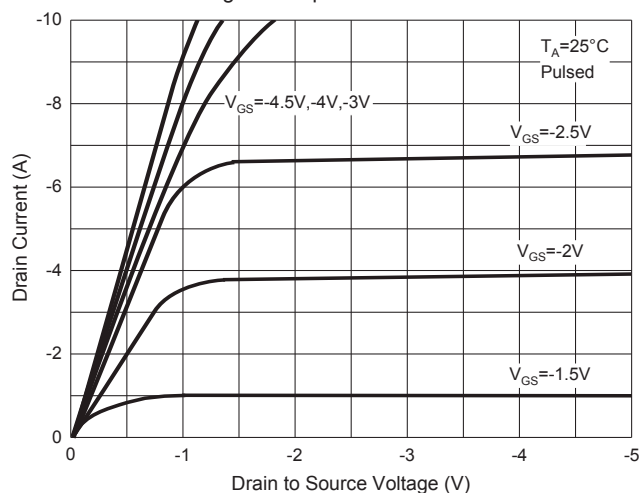


Fig. 2 - Transfer Characteristics

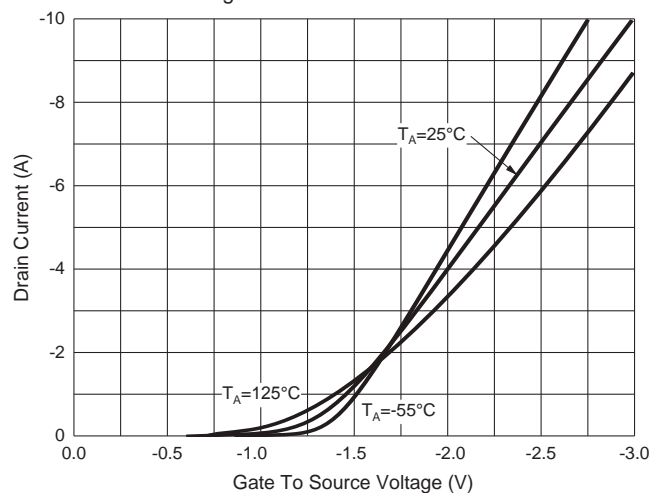


Fig. 3 - Capacitance Characteristics

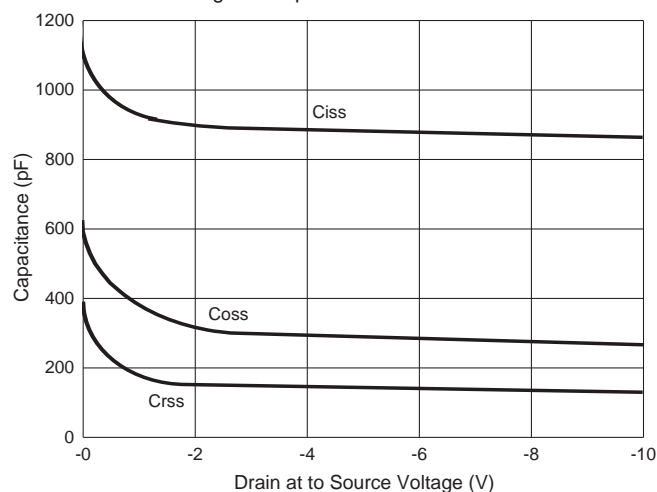


Fig. 4 - $R_{DS(ON)}$ —Temperature

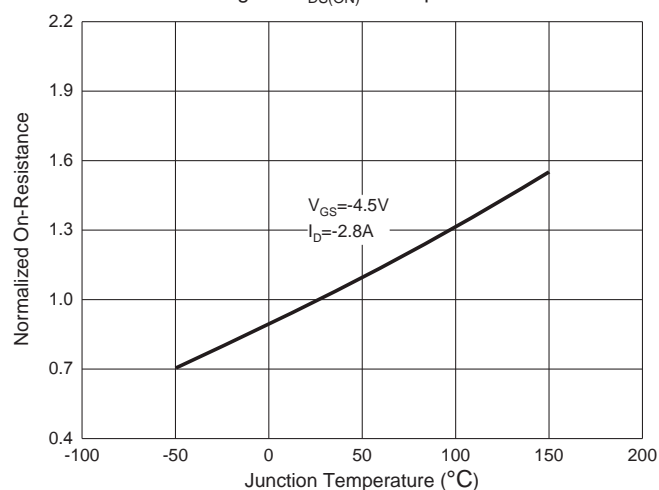


Fig. 5 - Threshold Voltage

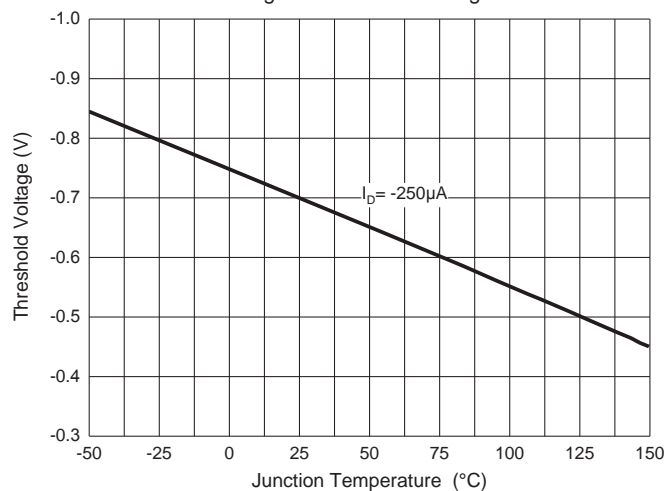
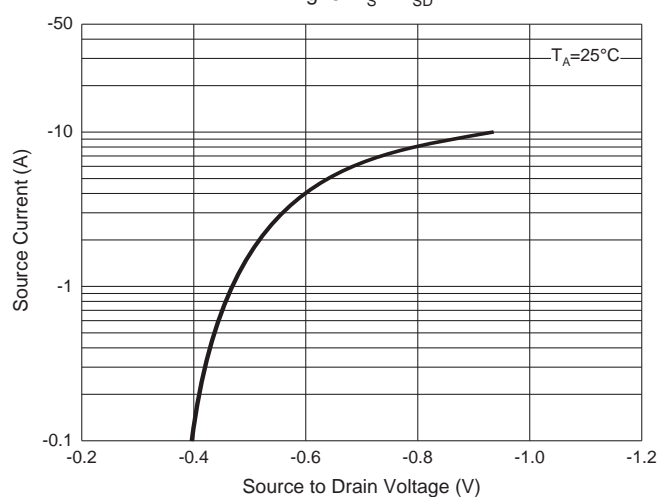


Fig. 6 - I_S — V_{SD}



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

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