

Features

- Advanced Trench MOSFET Process Technology
- Ultra Low On-Resistance with Low Gate Charge
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- 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: 50°C/W Junction to Ambient^(Note 1)
- Thermal Resistance: 6.9°C/W Junction to Case^(Note 1)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-12	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current	I_D	-16	A
Pulsed Drain Current ^(Note 2)	I_{DM}	-65	A
Total Power Dissipation	$T_A=25^\circ\text{C}$ ^(Note 3)	P_D 2.5	W
	$T_C=25^\circ\text{C}$ ^(Note 4)	18	

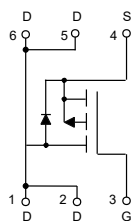
Note 1. Surface Mounted on FR4 Board, $t \leq 10$ sec.

2. Repetitive Rating : Pulse Width Limited by Maximum Junction Temperature.

3. This Test is Performed With No Heat Sink at $T_A=25^\circ\text{C}$.

4. This Test is Performed With Infinite Heat Sink at $T_C=25^\circ\text{C}$.

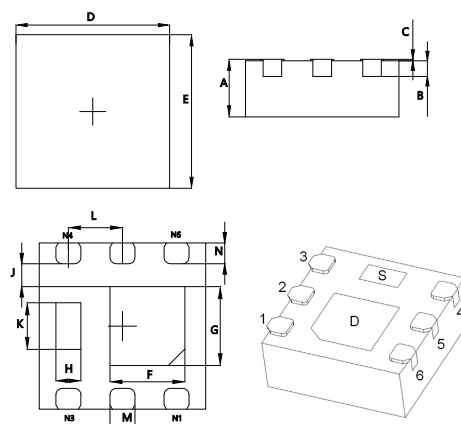
Internal Structure



Marking:1216

P-CHANNEL MOSFET

DFN2020-6J



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.028	0.032	0.700	0.800	
B	0.008		0.203		TYP.
C	0.000	0.002	0.000	0.050	
D	0.076	0.082	1.924	2.076	
E	0.076	0.082	1.924	2.076	
F	0.031	0.039	0.800	1.000	
G	0.033	0.041	0.850	1.050	
H	0.008	0.016	0.200	0.400	
J	0.008	-----	0.200	-----	
K	0.018	0.026	0.460	0.660	
L	0.026		0.650		TYP.
M	0.010	0.014	0.250	0.350	
N	0.007	0.013	0.174	0.326	

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-12			V
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 8V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-12V, V_{GS}=0V$			-1	μA
Gate-Threshold Voltage ^(Note 5)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.7	-1	V
Drain-Source On-Resistance ^(Note 5)	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-6.7A$			21	m Ω
		$V_{GS}=-2.5V, I_D=-6.2A$			27	
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-8A$			-1.2	V
Forward tranconductance ^(Note 5)	g_{FS}	$V_{DS}=-10V, I_D=-6.7A$		40		S
Dynamic Characteristics^(Note 6)						
Input Capacitance	C_{iss}	$V_{DS}=-10V, V_{GS}=0V, f=1MHz$		2700		pF
Output Capacitance	C_{oss}			680		
Reverse Transfer Capacitance	C_{rss}			590		
Total Gate Charge	Q_g	$V_{DS}=-6V, V_{GS}=-8V, I_D=-10A$		60	100	nC
				35	48	
Gate-Source Charge	Q_{gs}	$V_{DS}=-6V, V_{GS}=-4.5V, I_D=-10A$		5		
Gate-Drain Charge	Q_{gd}			10		

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

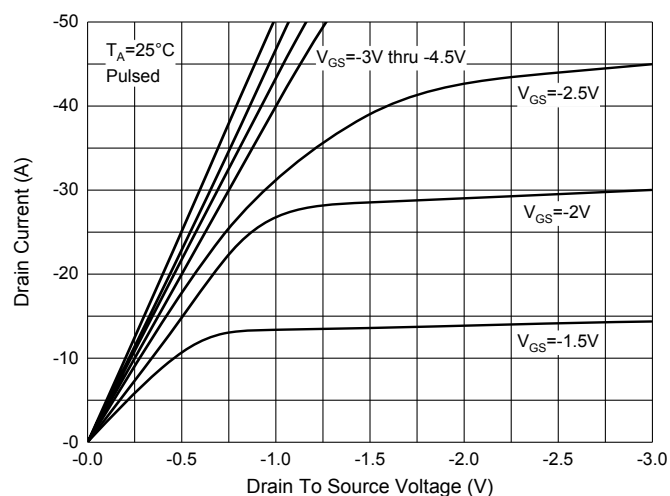


Fig. 2 - Capacitance Characteristics

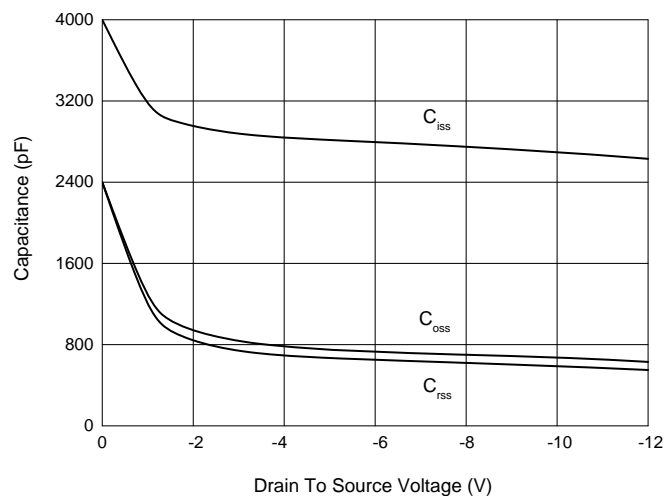


Fig. 3 - $R_{DS(ON)} - I_D$

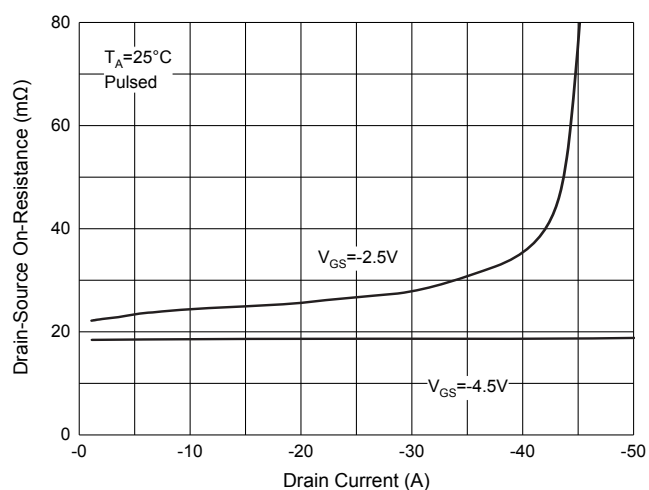


Fig. 4 - $R_{DS(ON)} - V_{GS}$

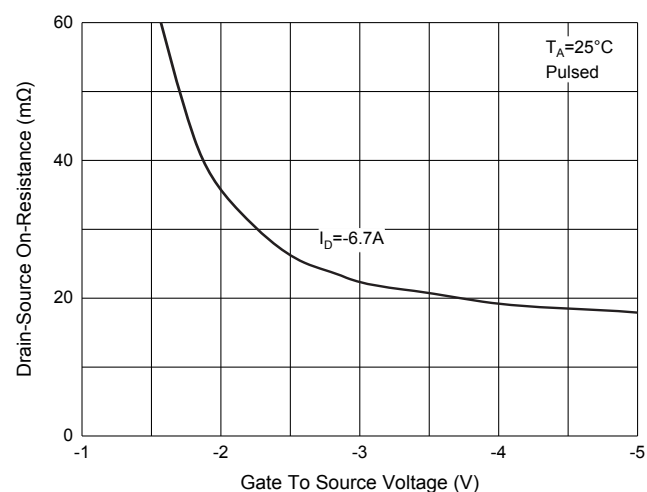


Fig. 5 - $I_S - V_{SD}$

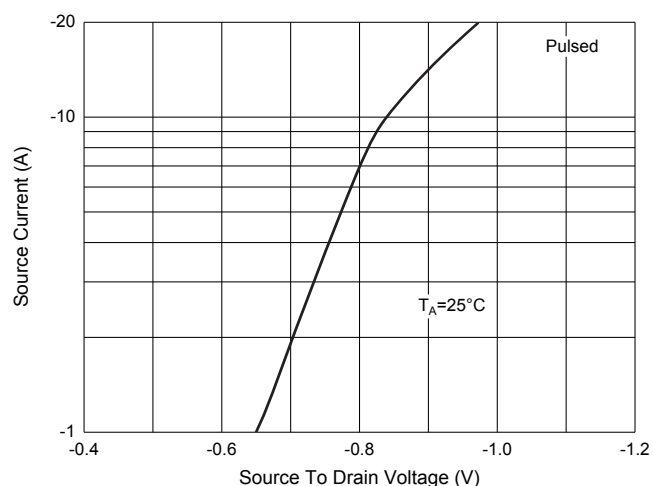
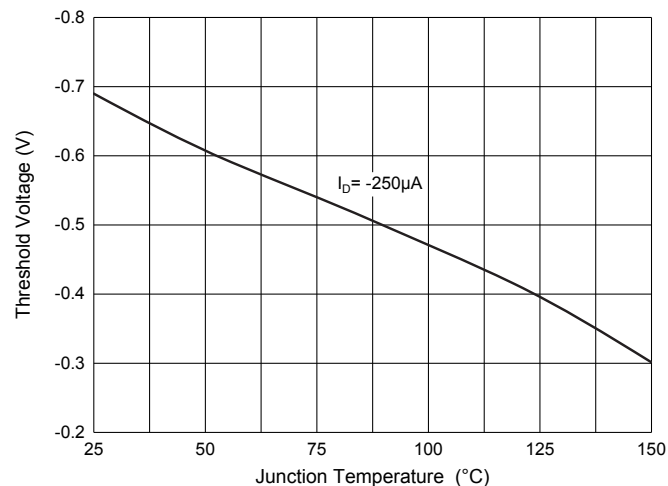


Fig. 6 - Threshold Voltage



Ordering Information

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

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

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