

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. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

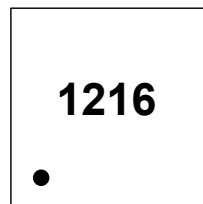
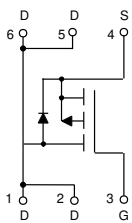
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 50°C/W Junction to Ambient^(Note 2)
- Thermal Resistance: 6.9°C/W Junction to Case^(Note 2)

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 3)	I_{DM}	-65	A
Total Power Dissipation	$T_A=25^\circ\text{C}$ ^(Note 4)	P_D	W
	$T_C=25^\circ\text{C}$ ^(Note 5)		

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<10 sec.
3. Repetitive Rating : Pulse Width Limited by Maximum Junction Temperature.
4. This Test is Performed With No Heat Sink at $T_A=25^\circ\text{C}$.
5. This Test is Performed With Infinite Heat Sink at $T_C=25^\circ\text{C}$.

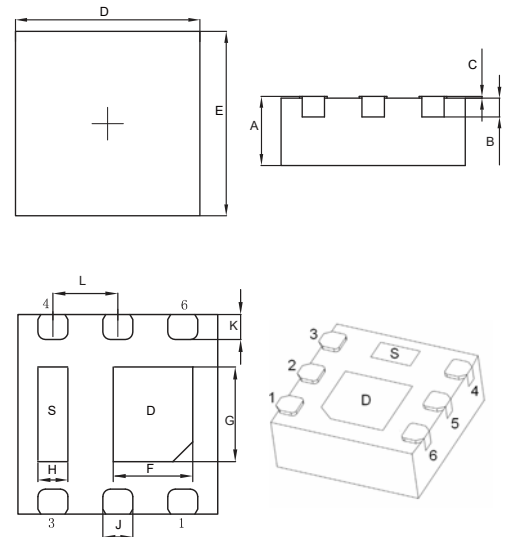
Internal Structure and Marking Code



Pin1

**P-CHANNEL
MOSFET**

DFN2020-6J



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.030	0.034	0.750	0.850	
B	0.008		0.200		BSC.
C	0.000	0.004	0.000	0.100	
D	0.075	0.083	1.900	2.100	
E	0.075	0.083	1.900	2.100	
F	0.024	0.031	0.610	0.810	
G	0.028	0.036	0.710	0.910	
H	0.008	0.016	0.200	0.400	
J	0.008	0.016	0.200	0.400	
K	0.006	0.014	0.150	0.350	
L	0.026		0.650		BSC.

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 6)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.7	-1	V
Drain-Source On-Resistance ^(Note 6)	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-6.7A$			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 transconductance ^(Note 6)	g_{FS}	$V_{DS}=-10V, I_D=-6.7A$		40		S
Dynamic Characteristics^(Note 7)						
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 6. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

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

Curve Characteristics

Fig. 1 - Output Characteristics

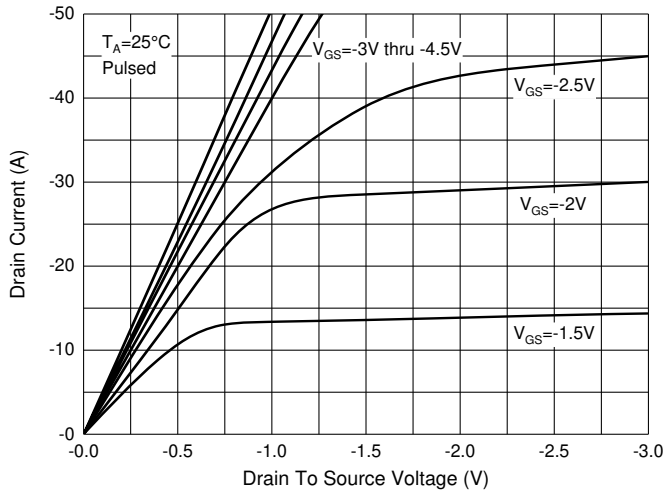


Fig. 2 - Capacitance Characteristics

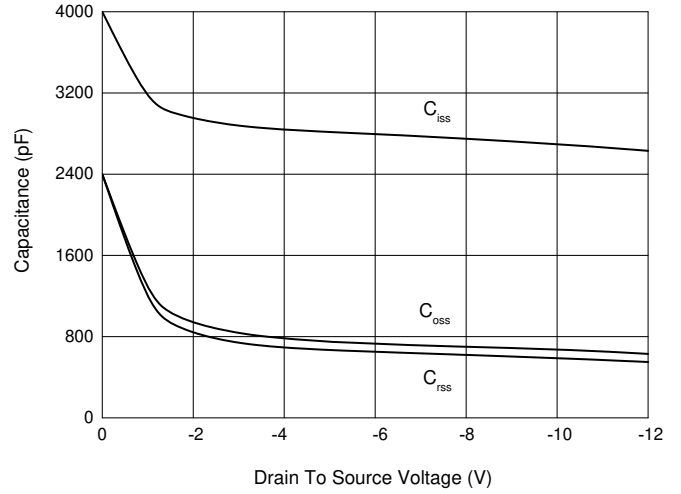


Fig. 3 - $R_{DS(ON)} - I_D$

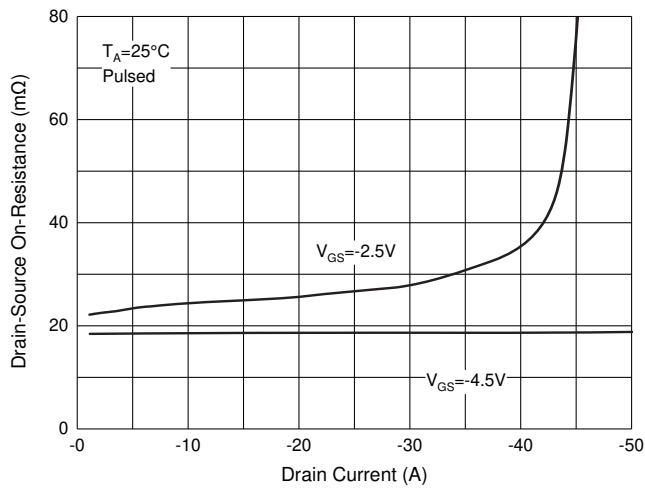


Fig. 4 - $R_{DS(ON)} - V_{GS}$

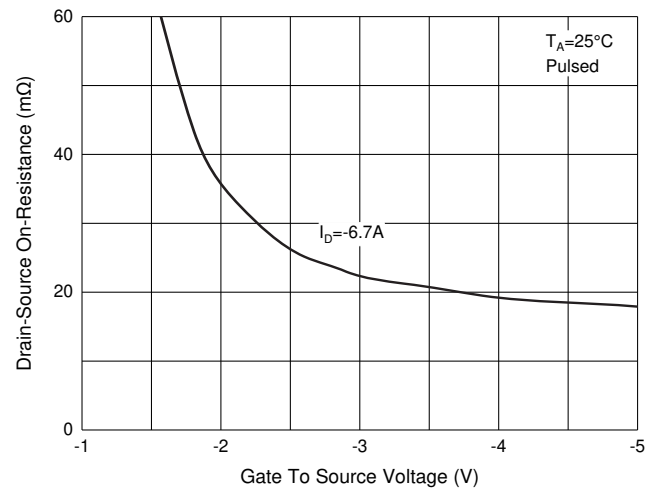


Fig. 5 - $I_S - V_{SD}$

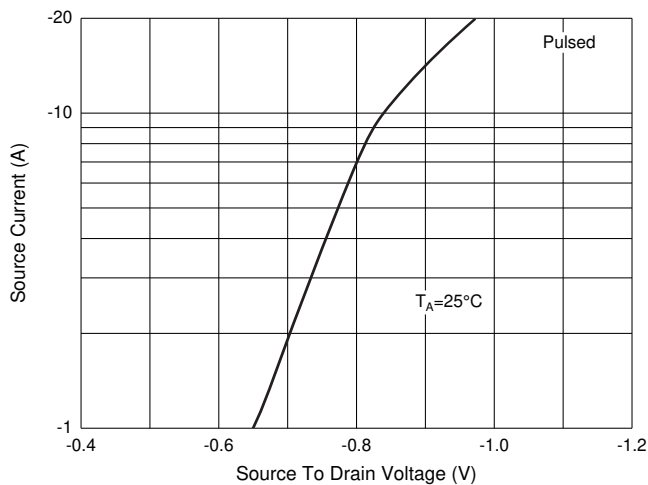
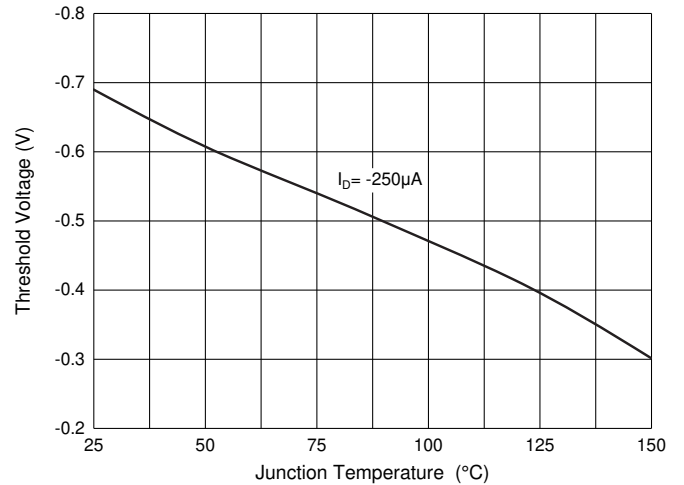


Fig. 6 - Threshold Voltage



Ordering Information

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

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