

CJMPD08

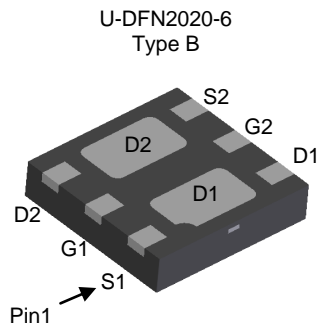
DUAL P-CHANNEL ENHANCEMENT MODE MOSFET

Features

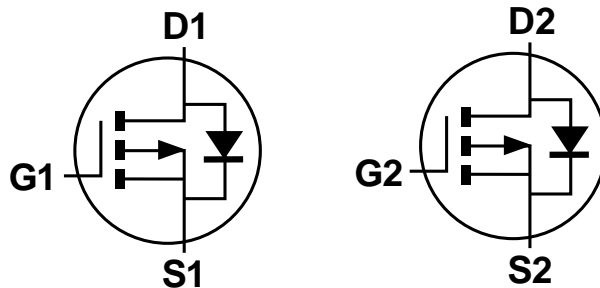
- Low On-Resistance
 - 70m Ω @V_{GS} = -4.5V
 - 85m Ω @V_{GS} = -2.5V
 - 86m Ω (typ) @V_{GS} = -1.8V
- Low Gate Threshold Voltage, -0.9V Max
- Fast Switching Speed
- Low Input/Output Leakage
- Low Profile, 0.5mm Max Height
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- Halogen and Antimony Free. "Green" Device (Note 3)**
- Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: U-DFN2020-6 Type B
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish – NiPdAu Annealed over Copper Leadframe; Solderable per MIL-STD-202, Method 208 ^(e4)
- Weight: 0.0065 grams (Approximate)



Bottom View



Equivalent Circuit

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Units
Drain-Source Voltage	V _{DSS}	-20	V
Gate-Source Voltage	V _{GSS}	±12	V
Drain Current (Note 5)	I _D	-3.8	A
Pulsed Drain Current (Note 6)	I _{DM}	-13	A

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	1.4	W
Thermal Resistance, Junction to Ambient	R _{θJA}	89	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)						
Drain-Source Breakdown Voltage	BV_{DSS}	-20	—	—	V	$V_{GS} = 0V, I_D = -250\mu A$
Zero Gate Voltage Drain Current	I_{DSS}	—	—	-1	μA	$V_{DS} = -20V, V_{GS} = 0V$
Gate-Source Leakage	I_{GSS}	—	—	± 100 ± 800	nA	$V_{GS} = \pm 8V, V_{DS} = 0V$ $V_{GS} = \pm 12V, V_{DS} = 0V$
ON CHARACTERISTICS (Note 7)						
Gate Threshold Voltage	$V_{GS(th)}$	-0.45	—	-0.9	V	$V_{DS} = V_{GS}, I_D = -250\mu A$
Static Drain-Source On-Resistance	$R_{DS(on)}$	—	54	70	m Ω	$V_{GS} = -4.5V, I_D = -2.8A$
		—	68	85		$V_{GS} = -2.5V, I_D = -2.0A$
		—	86	—		$V_{GS} = -1.8V, I_D = -1.0A$
Forward Transfer Admittance	$ Y_{fs} $	—	8	—	S	$V_{DS} = -5V, I_D = -2.8A$
Diode Forward Voltage (Note 7)	V_{SD}	—	0.7	-1.2	V	$V_{GS} = 0V, I_S = -1.6A$
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	—	536	—	pF	$V_{DS} = -10V, V_{GS} = 0V$ $f = 1.0MHz$
Output Capacitance	C_{oss}	—	68	—	pF	
Reverse Transfer Capacitance	C_{rss}	—	59	—	pF	
Gate Resistance	R_g	-	34	-	Ω	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$
Total Gate Charge	Q_g	-	6.5	-	nC	$V_{GS} = -4.5V, V_{DD} = -10V,$ $I_D = -1.5A$
Gate-Source Charge	Q_{gs}	-	0.8	-	nC	
Gate-Drain Charge	Q_{gd}	-	1.4	-	nC	
Turn-On Delay Time	$t_{D(on)}$	-	11.51	-	ns	$V_{GEN} = -4.5V, V_{DD} = -10V,$ $R_L = 10\Omega, R_G = 6\Omega$
Turn-On Rise Time	t_r	-	12.09	-	ns	
Turn-Off Delay Time	$t_{D(off)}$	-	55.34	-	ns	
Turn-Off Fall Time	t_f	-	27.54	-	ns	

- Notes:
5. Device mounted on FR-4 PCB, on minimum recommended, 2oz Copper pad layout.
 6. Repetitive rating, pulse width limited by junction temperature.
 7. Short duration pulse test used to minimize self-heating effect.



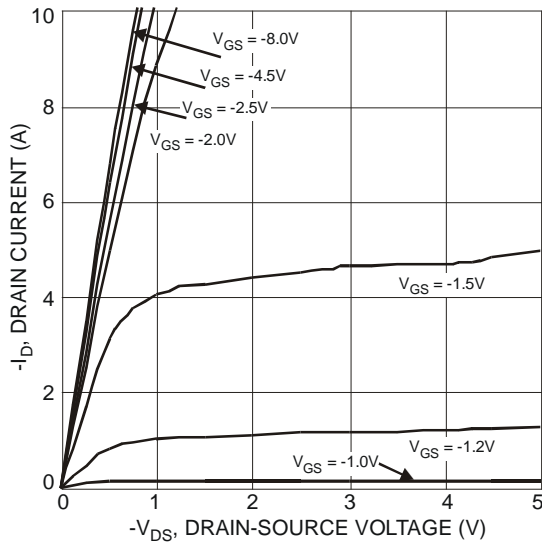


Fig. 1 Typical Output Characteristics

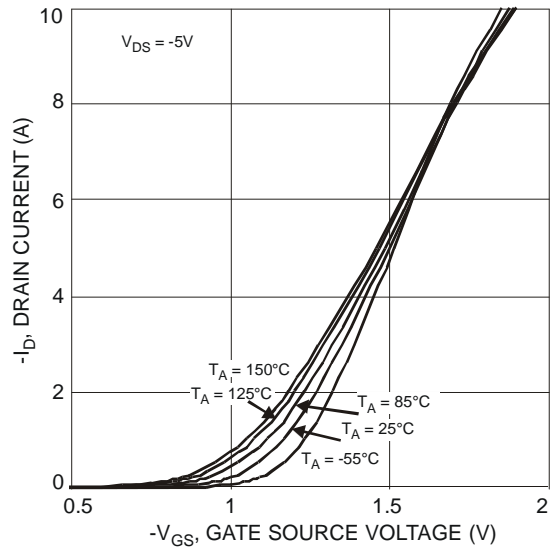


Fig. 2 Typical Transfer Characteristics

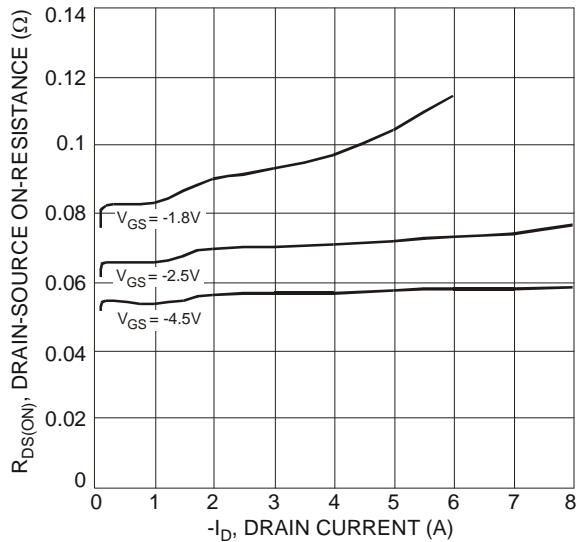


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

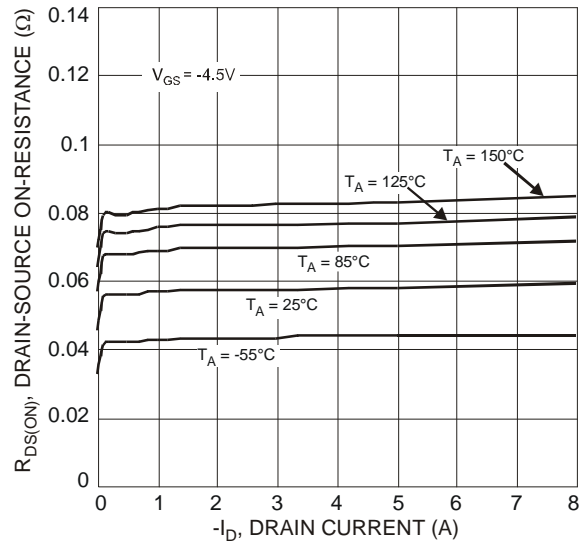


Fig. 4 Typical Drain-Source On-Resistance vs. Drain Current and Temperature

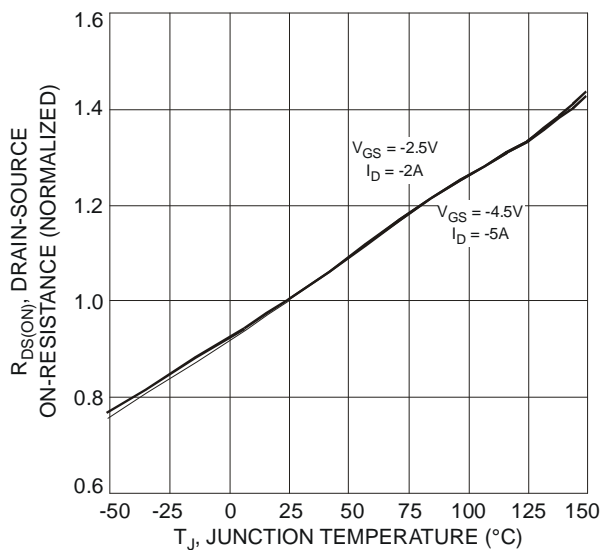


Fig. 5 On-Resistance Variation with Temperature

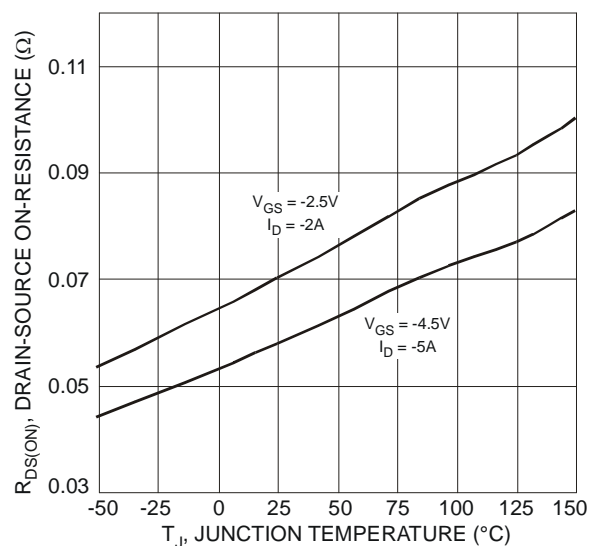
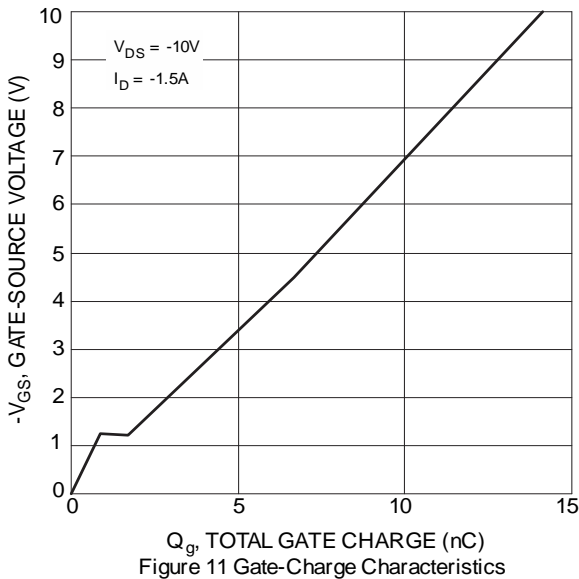
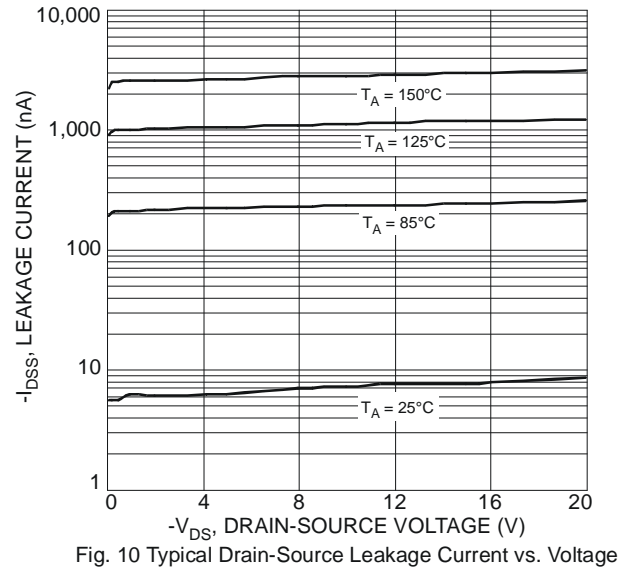
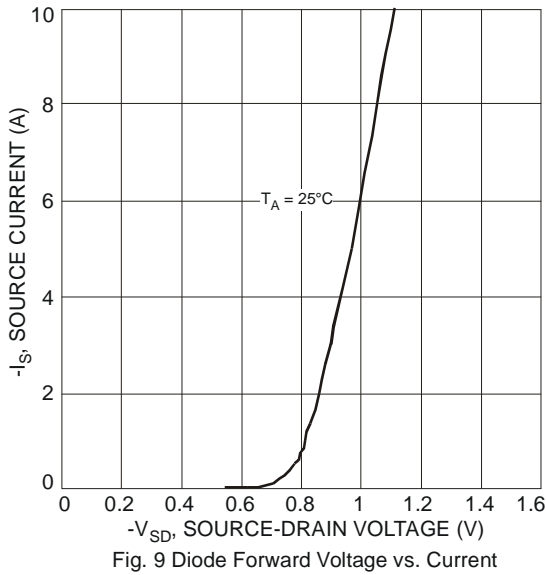
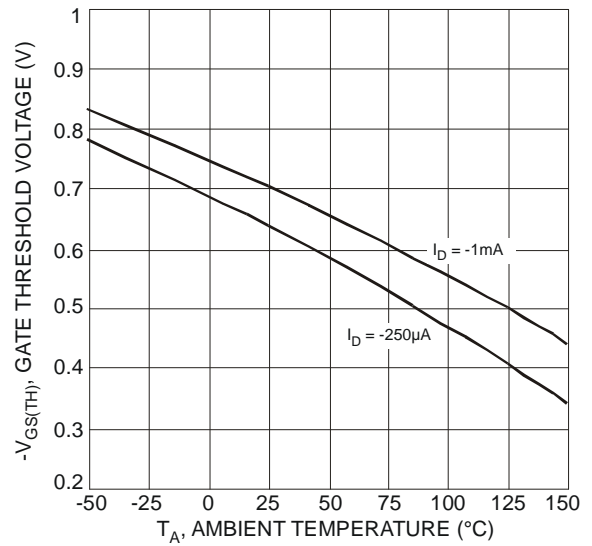
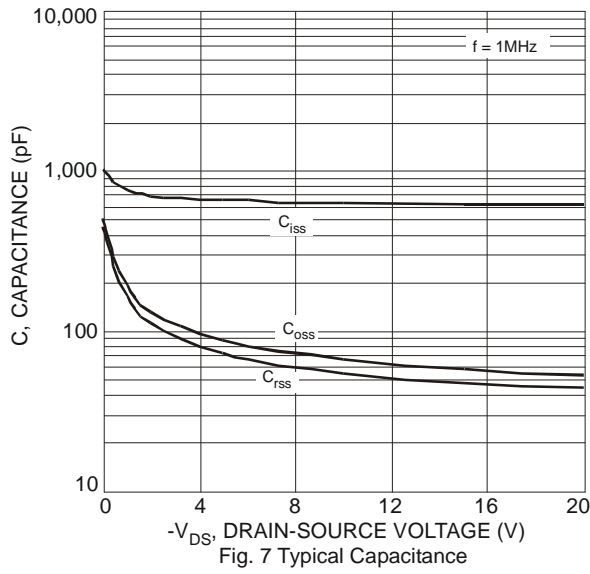


Fig. 6 On-Resistance Variation with Temperature





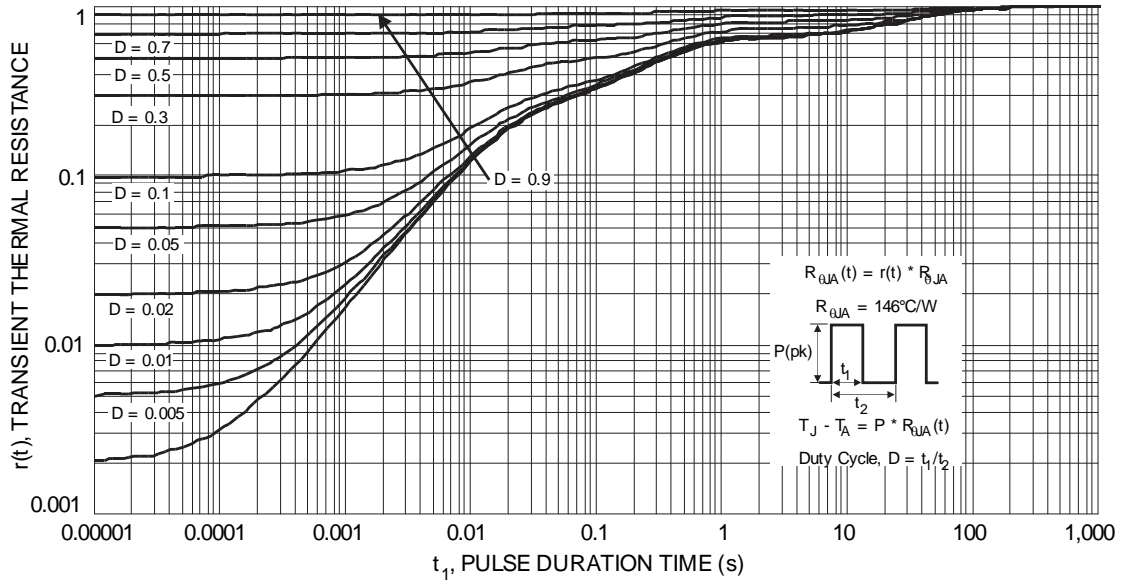
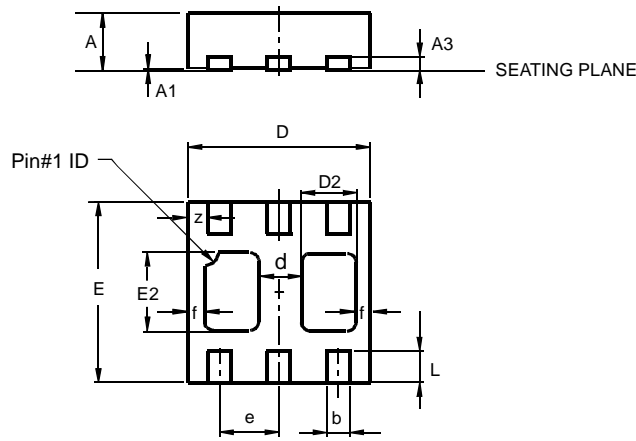


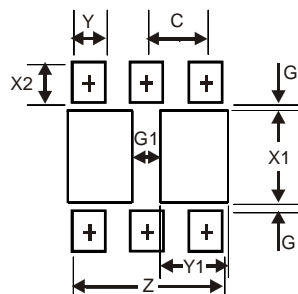
Fig. 12 Transient Thermal Response

Package Outline Dimensions



U-DFN2020-6 Type B			
Dim	Min	Max	Typ
A	0.545	0.605	0.575
A1	0	0.05	0.02
A3	—	—	0.13
b	0.20	0.30	0.25
D	1.95	2.075	2.00
d	—	—	0.45
D2	0.50	0.70	0.60
e	—	—	0.65
E	1.95	2.075	2.00
E2	0.90	1.10	1.00
f	—	—	0.15
L	0.25	0.35	0.30
z	—	—	0.225
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	1.67
G	0.20
G1	0.40
X1	1.0
X2	0.45
Y	0.37
Y1	0.70
C	0.65

