

N-Channel 20V MOSFET

FEATURES

- Advance Trench Process Technology
- High Density Cell Design for Ultra Low On-resistance

PRODUCTY SUMMARY		
V_{DS}	$R_{DS(on)}$ (m Ω) Max	
20	14	@ $V_{GS}=4.5V$
	18	@ $V_{GS}=2.5V$

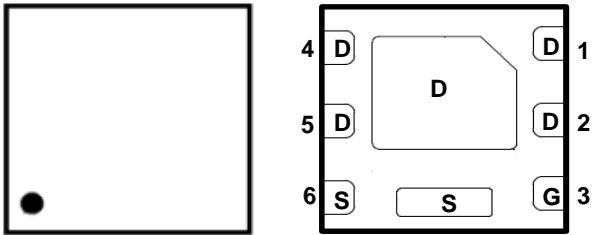
Application

- Portable Devices
- Consumer Electronics

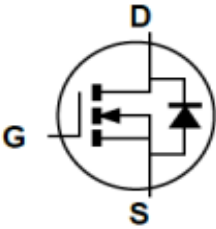
Mechanical

- Case:DFN2020 Package

DFN2020 Pin Configuration (Top View)



Internal Schematic Diagram



Packing Information

Package	Packing
DFN2020	3Kpcs/ 7"Reel

Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise specified)			
Parameter	Symbol	Limit	Unit
DrainSource Voltage	V_{DS}	20	V
GateSource Voltage	V_{GS}	± 12	V
Continuous Drain Current ¹⁾	I_D	11	A
Maximum Power Dissipation	P_D	1.9	W
Pulsed Drain Current ²⁾	I_{DM}	44	A
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}C$

Typical Thermal Resistance			
Parameter	Symbol	Limit	Unit
JunctiontoAmbient Thermal Resistance ³⁾	$R_{\theta JA}$	62.5	$^{\circ}C/W$

Note:
1. Fused current that based on wire numbers and diameter
2. Repetitive Rating: Pulse width limited by the maximum junction temperature
3. 1-in2 2oz Cu PCB board

Electrical Characteristics (T _A = 25°C UNLESS OTHERWISE NOTED)						
Characteristics	Symbol	Test Condition	Limits			Unit
			Min	Typ	Max	
Static						
DrainSource Breakdown Voltage	B _{VDSS}	V _{GS} =0V, I _D =250uA	20	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	0.40	0.63	1.00	V
DrainSource OnState Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =11.1A	-	12	14	mΩ
DrainSource OnState Resistance	R _{DS(on)}	V _{GS} =2.5V, I _D =9.8A	-	15	18	mΩ
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V	-	-	1	uA
GateSource Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V	-	-	±100	nA

DrainSource Diode						
Maximum Continuous Body Diode Forward Current	I _S	-	-	-	1.2	A
Diode Forward Voltage	V _{SD}	I _S =1.0A, V _{GS} =0V	-	-	1.5	V

Note:

- 1. Pulse width<300us, Duty cycle<2%.
- 2. Essentially independent of operating temperature typical characteristics.
- 3. Repetitive rating, pulse width limited by junction temperature T_{J(MAX)}=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J =25°C.
- 4. The maximum current rating is package limited.
- 5. R_{QJA} is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. Mounted on a 1 inch2 with 2oz.square pad of copper.
- 6. Guaranteed by design, not subject to production testing.

Package Outline Dimensions (inches and millimeters)

DFN2020				
SYMBOL	Dimensions			
	Millimeters		Inches	
	Min	Max	Min	Max
A	0.70	0.80	0.39	0.41

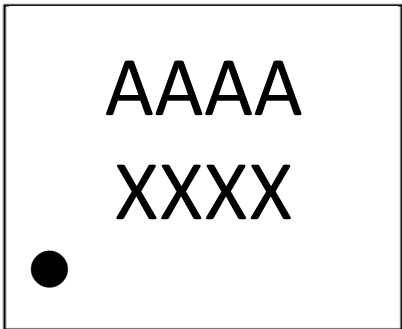
Technical drawing of the DFN2020 package showing top, bottom, and side views with dimensions.

Top View: Overall dimensions are 2.000±0.050 (PACKAGE OUTLINE) by 2.000±0.050 (PACKAGE OUTLINE). The marking area is labeled T/DFN (2x2)-06L. A PIN #1 DOT BY MARKING is indicated.

Bottom View: Dimensions include 0.790±0.050, 0.250 MIN, 0.250±0.050, 0.150 MIN, 0.650±0.100, 0.300±0.050, 0.950±0.100 (Exp. LEADS), 1.150±0.100 (Exp. LEADS), and 0.200 MIN.

Side View: Dimensions include 0.030~0.050, 0.203±0.0080, and 0.250±0.050.

Marking Information



AAAA = Product number

XXXX = Tracking number

Third line = Pin1 Point

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