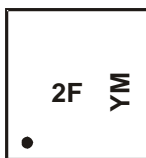


## Marking Information

Site 1



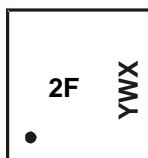
2F = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: H = 2020)  
 M = Month (ex: 9 = September)

Date Code Key

Year	2015	...	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Code	C	...	H	I	J	K	L	M	N	O	P	R

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Site 2



2F = Product Type Marking Code  
 YWX = Date Code Marking  
 Y = Year (ex: 0 = 2020)  
 W = Week (ex: a = Week 27; z Represents Week 52 and 53)  
 X = Internal Code (ex: U = Monday)

Date Code Key

Year	2015	...	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Code	5	...	0	1	2	3	4	5	6	7	8	9

Week	1-26	27-52	53
Code	A-Z	a-z	z

Internal Code	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Code	T	U	V	W	X	Y	Z

## Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V <sub>DSS</sub>	30	V
Gate-Source Voltage			V <sub>GSS</sub>	±12	V
Continuous Drain Current (Note 6) V <sub>GS</sub> = 4.5V	Steady State	T <sub>C</sub> = +25°C T <sub>C</sub> = +70°C	I <sub>D</sub>	15 13	A
	t < 5s	T <sub>A</sub> = +25°C T <sub>A</sub> = +70°C	I <sub>D</sub>	10.4 8.3	A
Pulsed Drain Current (380µs Pulse, Duty Cycle = 1%)			I <sub>DM</sub>	40	A
Continuous Source-Drain Diode Current (Note 6)		T <sub>A</sub> = +25°C	I <sub>S</sub>	2.2	A
Avalanche Current (Note 7) L = 0.1mH			I <sub>AS</sub>	17	A
Avalanche Energy (Note 7) L = 0.1mH			E <sub>AS</sub>	15	mJ

## Thermal Characteristics

Characteristic		Symbol	Value	Unit
Total Power Dissipation (Note 5)	T <sub>A</sub> = +25°C	P <sub>D</sub>	0.73	W
	T <sub>A</sub> = +70°C		0.47	
Thermal Resistance, Junction to Ambient (Note 5)	Steady State	R <sub>θJA</sub>	171	°C/W
	t < 5s		112	
Total Power Dissipation (Note 6)	T <sub>A</sub> = +25°C	P <sub>D</sub>	2.03	W
	T <sub>A</sub> = +70°C		1.30	
Thermal Resistance, Junction to Ambient (Note 6)	Steady State	R <sub>θJA</sub>	63	°C/W
	t < 5s		40	
Thermal Resistance, Junction to Case	Steady State	R <sub>θJC</sub>	18	
Operating and Storage Temperature Range		T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

## Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 8)</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	30	—	—	V	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250µA
Zero Gate Voltage Drain Current T <sub>J</sub> = +25°C	I <sub>DSS</sub>	—	—	1	µA	V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V
Gate-Source Leakage	I <sub>GSS</sub>	—	—	±10	µA	V <sub>GS</sub> = ±10V, V <sub>DS</sub> = 0V
<b>ON CHARACTERISTICS (Note 8)</b>						
Gate Threshold Voltage	V <sub>GS(TH)</sub>	0.4	0.6	1.0	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250µA
Static Drain-Source On-Resistance	R <sub>DS(ON)</sub>	—	16	19	mΩ	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 4.5A
			19	25		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 3.5A
			26	40		V <sub>GS</sub> = 1.8V, I <sub>D</sub> = 2.0A
			32	120		V <sub>GS</sub> = 1.5V, I <sub>D</sub> = 1.0A
Diode Forward Voltage	V <sub>SD</sub>	—	0.6	1.2	V	V <sub>GS</sub> = 0V, I <sub>S</sub> = 1.0A
<b>DYNAMIC CHARACTERISTICS (Note 9)</b>						
Input Capacitance	C <sub>iss</sub>	—	1304	—	pF	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V, f = 1.0MHz
Output Capacitance	C <sub>oss</sub>	—	87	—		
Reverse Transfer Capacitance	C <sub>rss</sub>	—	80	—	Ω	V <sub>DS</sub> = 0V, V <sub>GS</sub> = 0V, f = 1MHz
Gate Resistance	R <sub>g</sub>	—	1.3	—		
Total Gate Charge (V <sub>GS</sub> = 4.5V)	Q <sub>g</sub>	—	15	—	nC	V <sub>DS</sub> = 15V, I <sub>D</sub> = 4.5A
Total Gate Charge (V <sub>GS</sub> = 8V)	Q <sub>g</sub>	—	27	—		
Gate-Source Charge	Q <sub>gs</sub>	—	2.0	—		
Gate-Drain Charge	Q <sub>gd</sub>	—	2.1	—		
Turn-On Delay Time	t <sub>D(ON)</sub>	—	4.1	—	ns	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 4.5V, R <sub>G</sub> = 1Ω, I <sub>D</sub> = 4.5A
Turn-On Rise Time	t <sub>r</sub>	—	4.8	—		
Turn-Off Delay Time	t <sub>D(OFF)</sub>	—	20.5	—		
Turn-Off Fall Time	t <sub>f</sub>	—	3.2	—		
Reverse Recovery Time	t <sub>RR</sub>	—	7.1	—	ns	I <sub>F</sub> = 1.0A, di/dt = 100A/µs
Reverse Recovery Charge	Q <sub>RR</sub>	—	1.7	—	nC	

- Notes: 5. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.  
6. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.  
7. I<sub>AS</sub> and E<sub>AS</sub> ratings are based on low frequency and duty cycles to keep T<sub>J</sub> = +25°C.  
8. Short duration pulse test used to minimize self-heating effect.  
9. Guaranteed by design. Not subject to product testing.

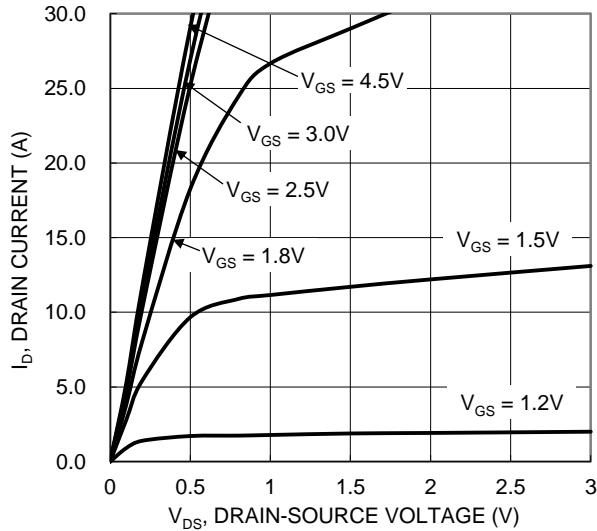


Figure 1. Typical Output Characteristic

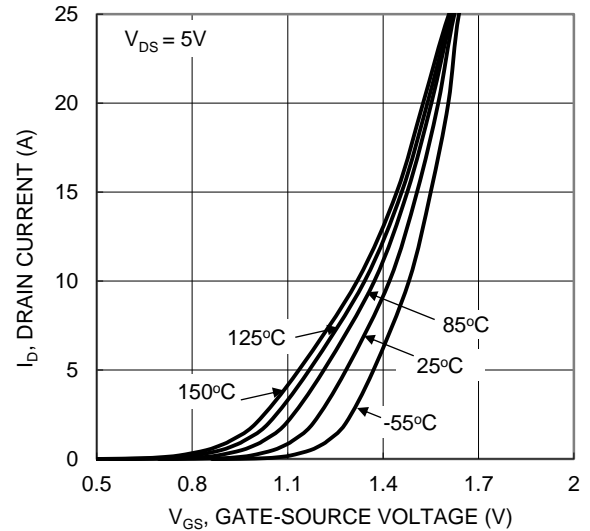


Figure 2. Typical Transfer Characteristic

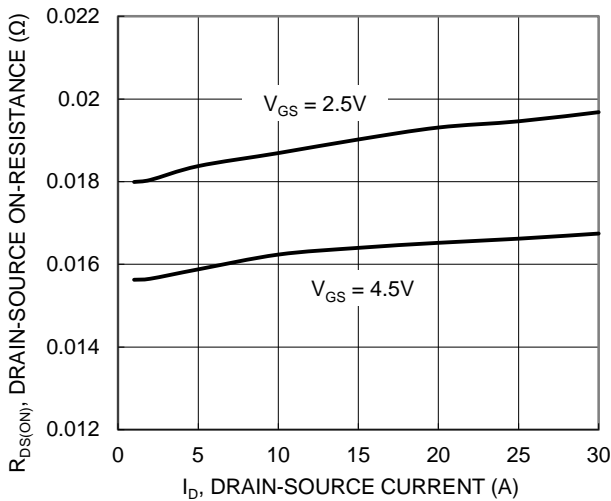


Figure 3. Typical On-Resistance vs. Drain Current and Gate Voltage

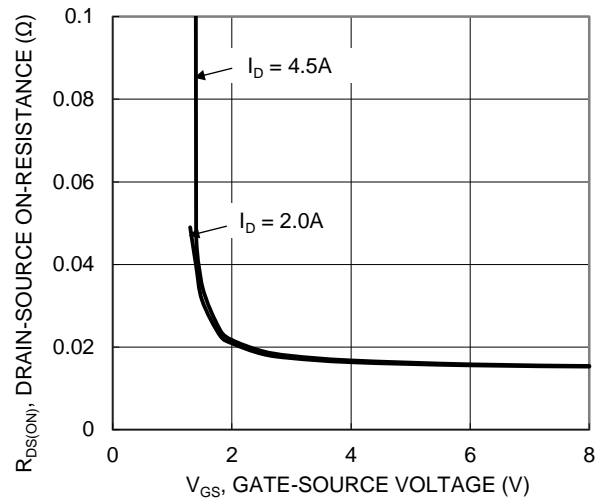


Figure 4. Typical Transfer Characteristic

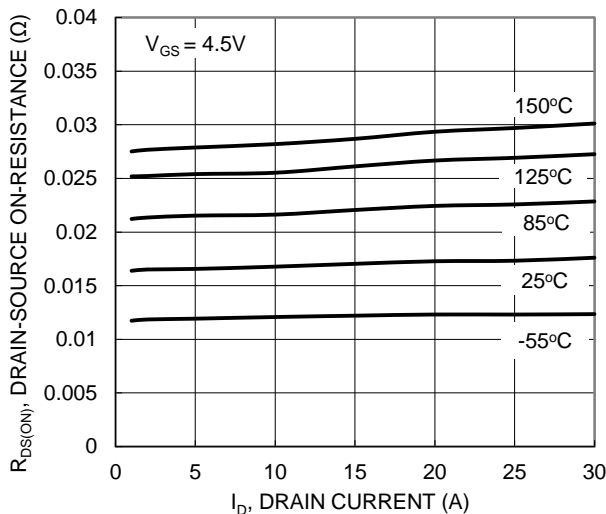


Figure 5. Typical On-Resistance vs. Drain Current and Temperature

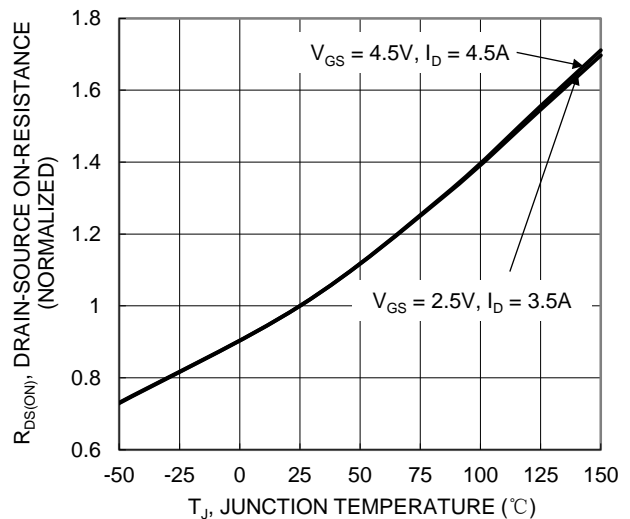
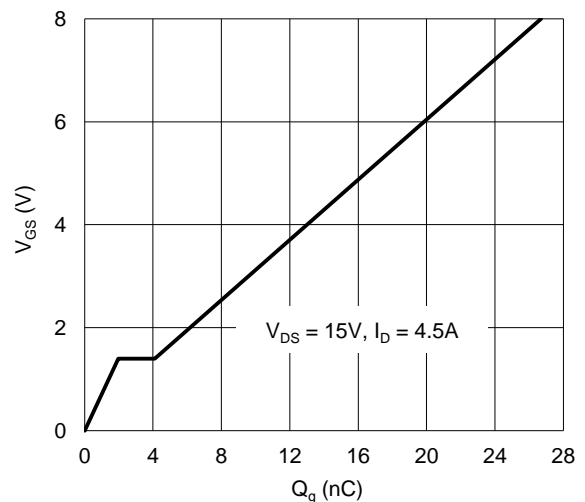
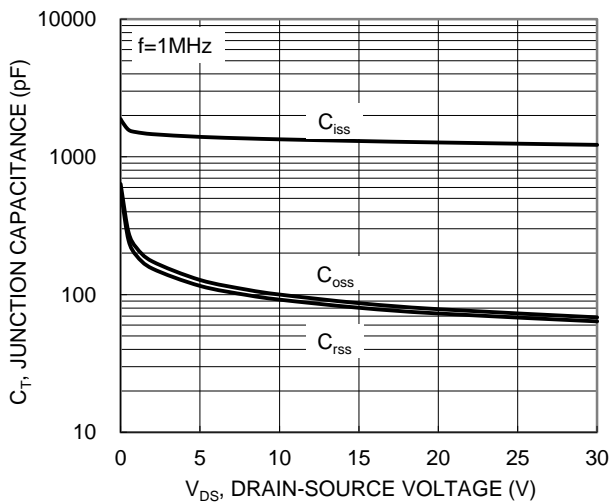
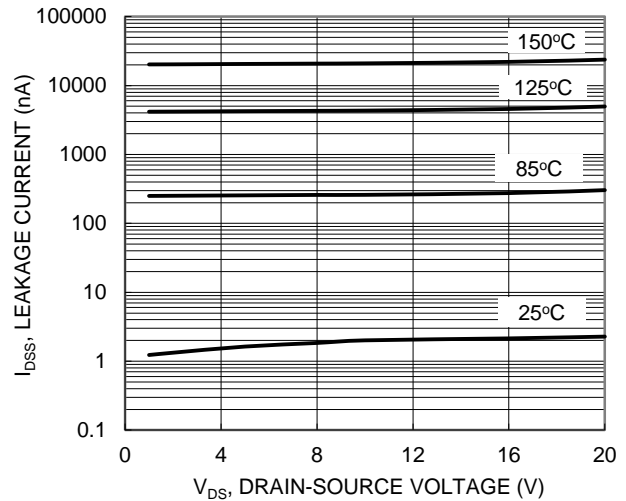
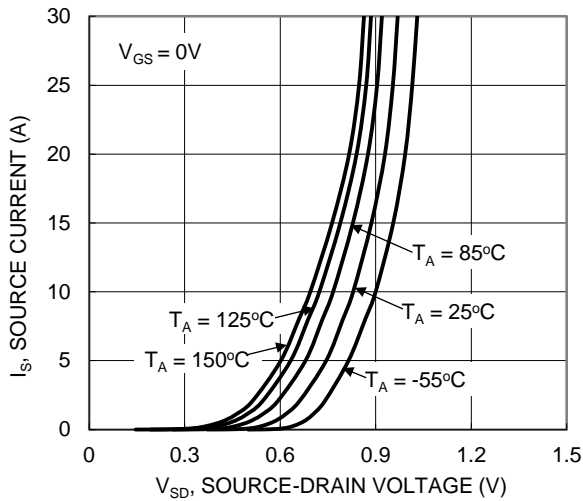
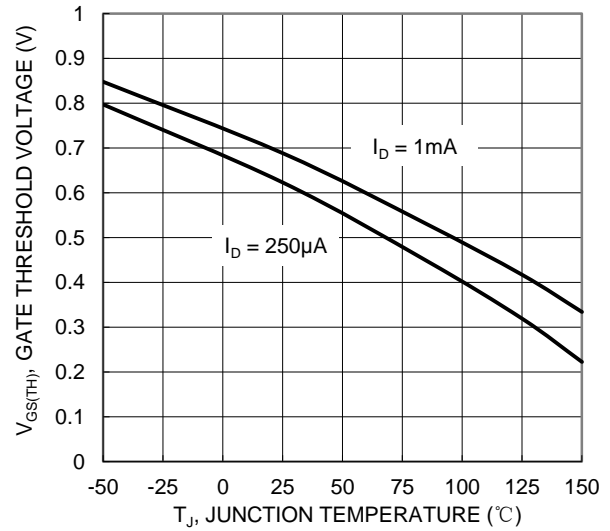
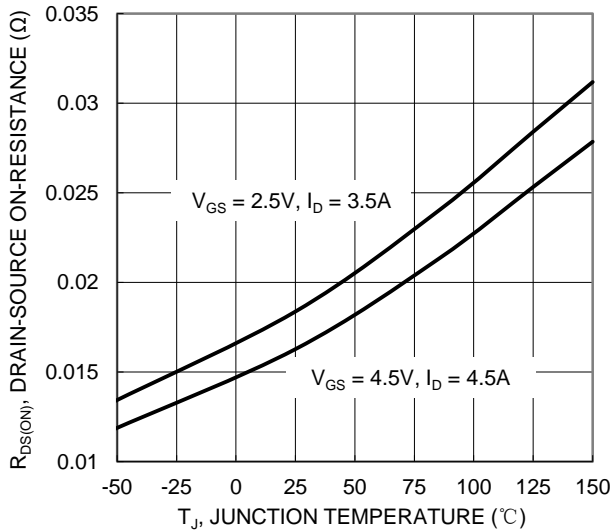
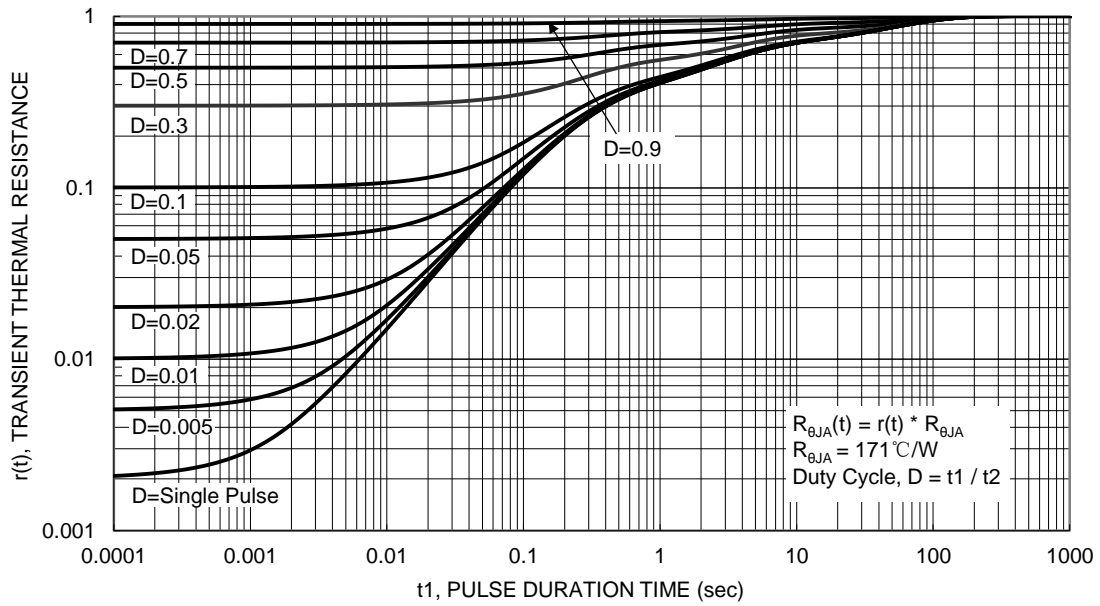
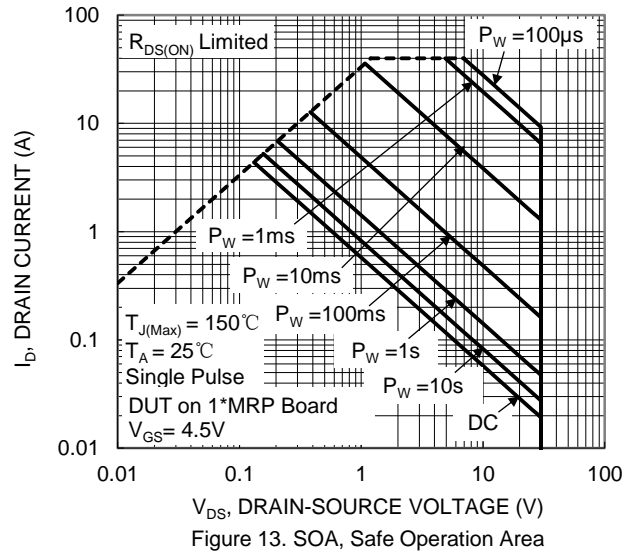


Figure 6. On-Resistance Variation with Temperature

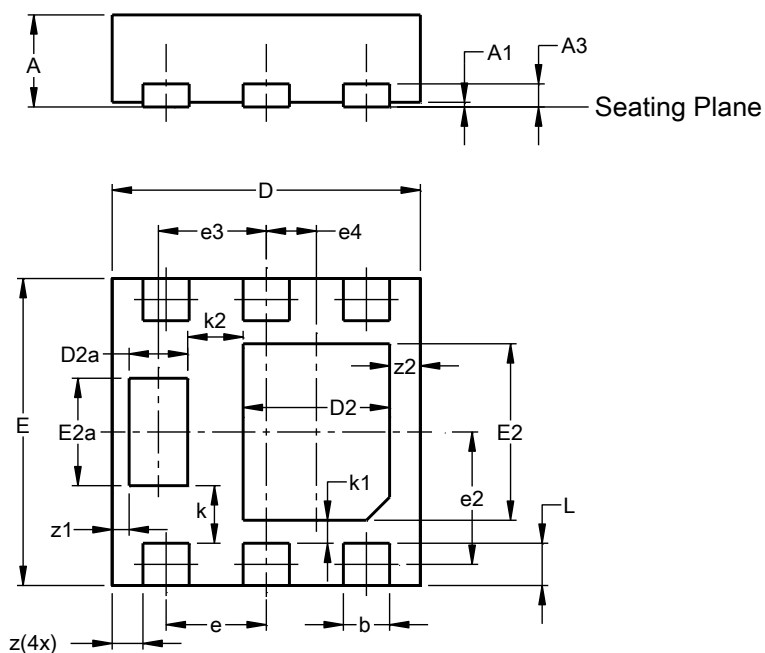




## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

U-DFN2020-6 (Type F)

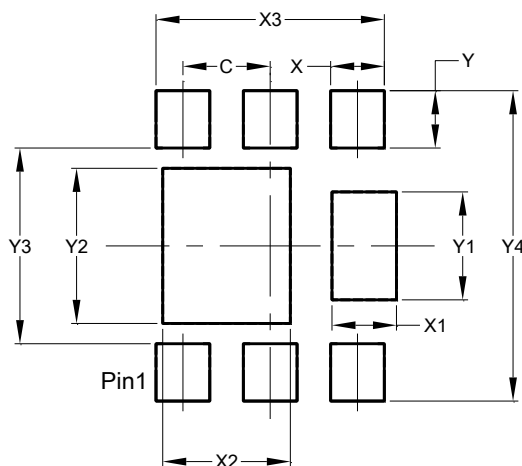


U-DFN2020-6 (Type F)			
Dim	Min	Max	Typ
A	0.57	0.63	0.60
A1	0.00	0.05	0.03
A3	-	-	0.15
b	0.25	0.35	0.30
D	1.95	2.05	2.00
D2	0.85	1.05	0.95
D2a	0.33	0.43	0.38
E	1.95	2.05	2.00
E2	1.05	1.25	1.15
E2a	0.65	0.75	0.70
e	0.65 BSC		
e2	0.863 BSC		
e3	0.70 BSC		
e4	0.325 BSC		
k	0.37 BSC		
k1	0.15 BSC		
k2	0.36 BSC		
L	0.225	0.325	0.275
z	0.20 BSC		
z1	0.110 BSC		
z2	0.20 BSC		
All Dimensions in mm			

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

U-DFN2020-6 (Type F)



Dimensions	Value (in mm)
C	0.650
X	0.400
X1	0.480
X2	0.950
X3	1.700
Y	0.425
Y1	0.800
Y2	1.150
Y3	1.450
Y4	2.300

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