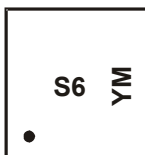


Marking Information

Site1



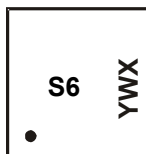
S6 = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: H = 2020)
 M = Month (ex: 9 = September)

Date Code Key

Year	2017	2018	2019	2020	2021	2022	2023	2024	2025
Code	E	F	G	H	I	J	K	L	M

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



S6 = 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	2019	2020	2021	2022	2023	2024	2025	2026
Code	9	0	1	2	3	4	5	6

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_A = +25°C, unless otherwise specified.)

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V _{DSS}	30	V
Gate-Source Voltage			V _{GSS}	±20	V
Continuous Drain Current (Note 6) V _{GS} = 10V	Steady State	T _A = +25°C	I _D	8.3	A
		T _A = +70°C		6.6	
	t < 10s	T _A = +25°C	I _D	9.9	A
		T _A = +70°C		7.9	
Maximum Continuous Body Diode Forward Current (Note 6)			I _S	3	A
Pulsed Drain Current (10μs Pulse, Duty Cycle = 1%)			I _{DM}	40	A
Avalanche Current (L = 0.1mH) (Note 7)			I _{AS}	15	A
Avalanche Energy (L = 0.1mH) (Note 7)			E _{AS}	11	mJ

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

Characteristic		Symbol	Value	Units
Total Power Dissipation (Note 5)	T _A = +25°C	P _D	0.66	W
	T _A = +70°C		0.42	
Thermal Resistance, Junction to Ambient (Note 5)	Steady State	R _{θJA}	173	°C/W
	t < 10s		133	
Total Power Dissipation (Note 6)	T _A = +25°C	P _D	2.1	W
	T _A = +70°C		1.3	
Thermal Resistance, Junction to Ambient (Note 6)	Steady State	R _{θJA}	62	°C/W
	t < 10s		43	
Thermal Resistance, Junction to Case (Note 6)	Steady State	R _{θJC}	9.4	°C/W
Operating and Storage Temperature Range		T _J , T _{STG}	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 8)						
Drain-Source Breakdown Voltage	BV _{DSS}	30	—	—	V	V _{GS} = 0V, I _D = 250µA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	1	µA	V _{DS} = 30V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±100	nA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 8)						
Gate Threshold Voltage	V _{GS(TH)}	1.0	—	2.0	V	V _{DS} = V _{GS} , I _D = 250µA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	—	20.5	mΩ	V _{GS} = 10V, I _D = 7A
		—	—	30		V _{GS} = 4.5V, I _D = 7A
Diode Forward Voltage	V _{SD}	—	0.70	1.0	V	V _{GS} = 0V, I _S = 1A
DYNAMIC CHARACTERISTICS (Note 9)						
Input Capacitance	C _{iss}	—	641	—	pF	V _{DS} = 15V, V _{GS} = 0V, f = 1.0MHz
Output Capacitance	C _{oss}	—	66	—		
Reverse Transfer Capacitance	C _{rss}	—	50	—		
Gate Resistance	R _g	—	2.2	—	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1.0MHz
Total Gate Charge (V _{GS} = 4.5V)	Q _g	—	6	—	nC	V _{DS} = 15V, I _D = 10A
Total Gate Charge (V _{GS} = 10V)	Q _g	—	13.2	—		
Gate-Source Charge	Q _{gs}	—	1.7	—		
Gate-Drain Charge	Q _{gd}	—	2.2	—		
Turn-On Delay Time	t _{D(ON)}	—	3.3	—	ns	V _{DD} = 15V, V _{GS} = 10V, R _G = 6Ω, I _D = 1A
Turn-On Rise Time	t _R	—	4.4	—		
Turn-Off Delay Time	t _{D(OFF)}	—	22.3	—		
Turn-Off Fall Time	t _F	—	5.3	—		
Reverse Recovery Time	t _{RR}	—	11.4	—	ns	I _F = 11A, di/dt = 100A/µs
Reverse Recovery Charge	Q _{RR}	—	8.2	—	nC	I _F = 11A, di/dt = 100A/µs

- Notes:
- Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
 - Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.
 - I_{AS} and E_{AS} rating are based on low frequency and duty cycles to keep T_J = +25°C.
 - Short duration pulse test used to minimize self-heating effect.
 - Guaranteed by design. Not subject to product testing.

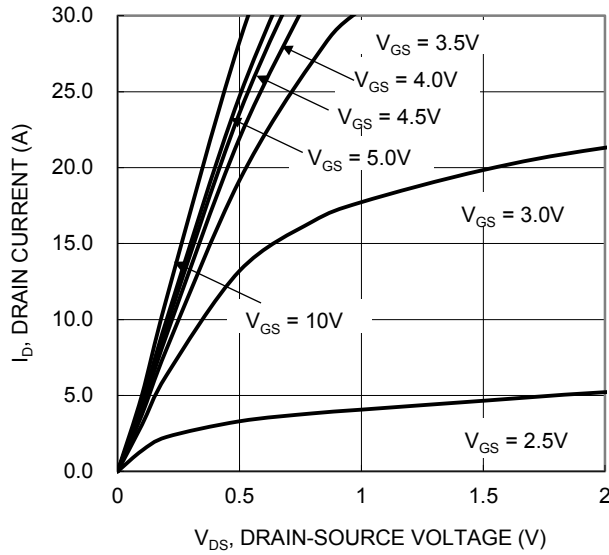


Figure 1. Typical Output Characteristic

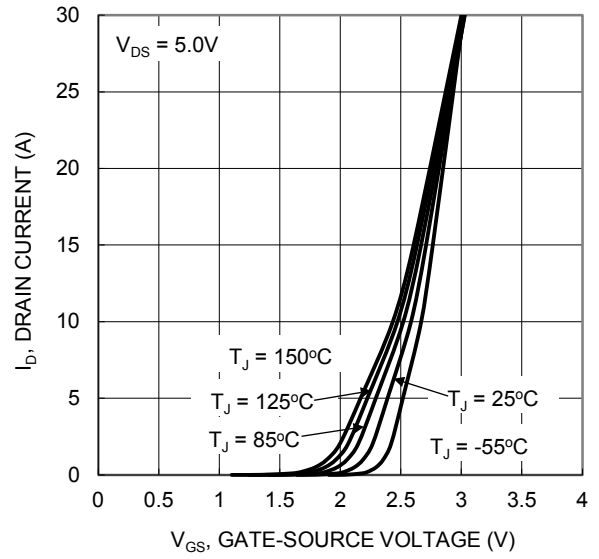


Figure 2. Typical Transfer Characteristic

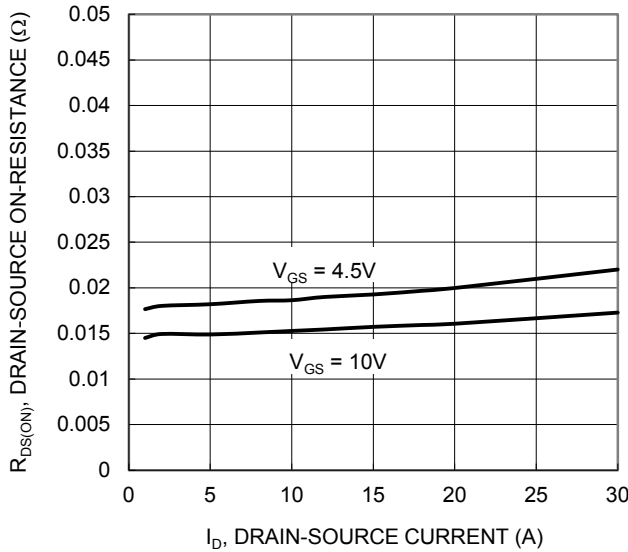


Figure 3. Typical On-Resistance vs Drain Current and Gate Voltage

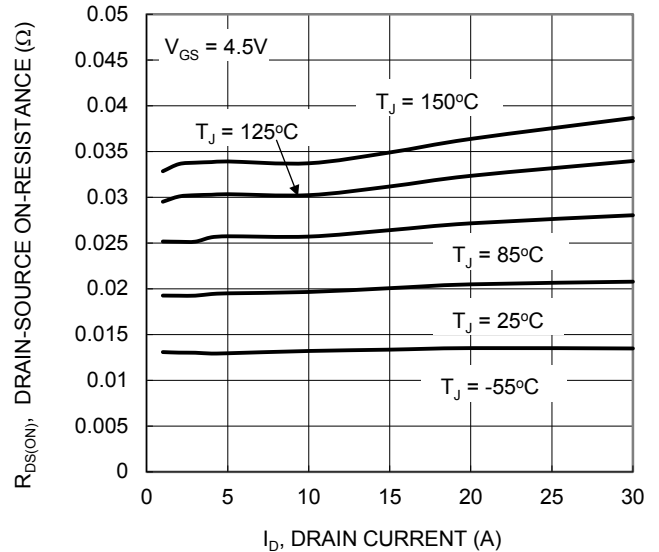


Figure 4. Typical On-Resistance vs Drain Current and Temperature

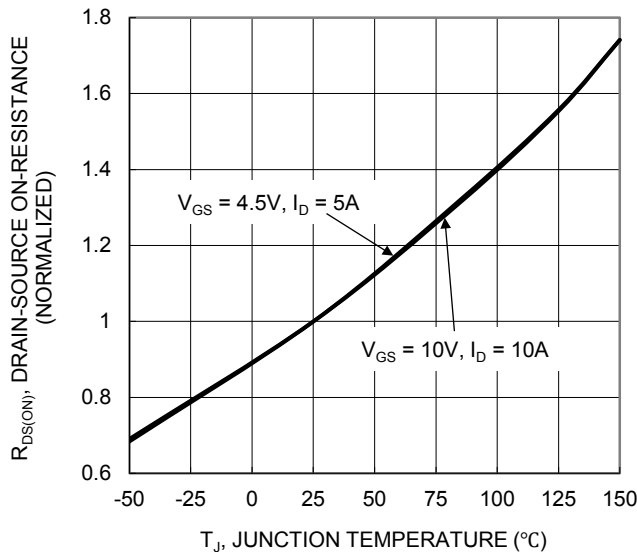


Figure 5. On-Resistance Variation with Temperature

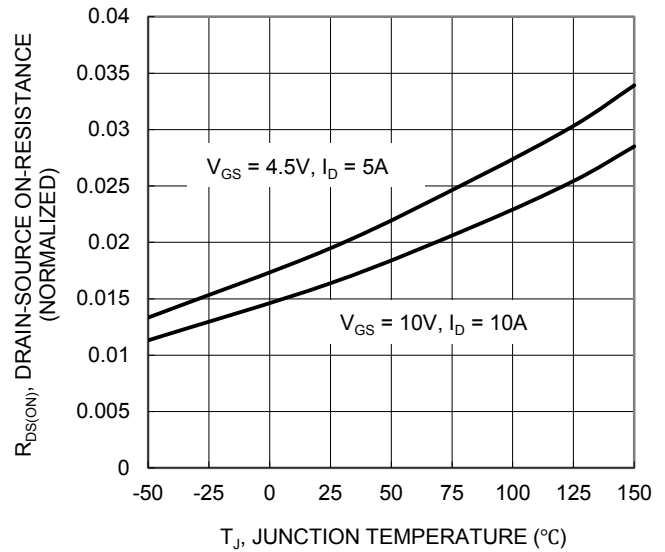


Figure 6. On-Resistance Variation with Temperature

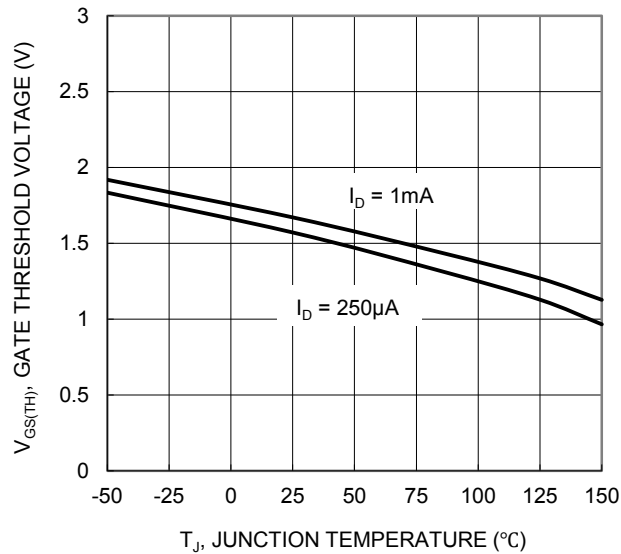


Figure 7. Gate Threshold Variation vs Junction Temperature

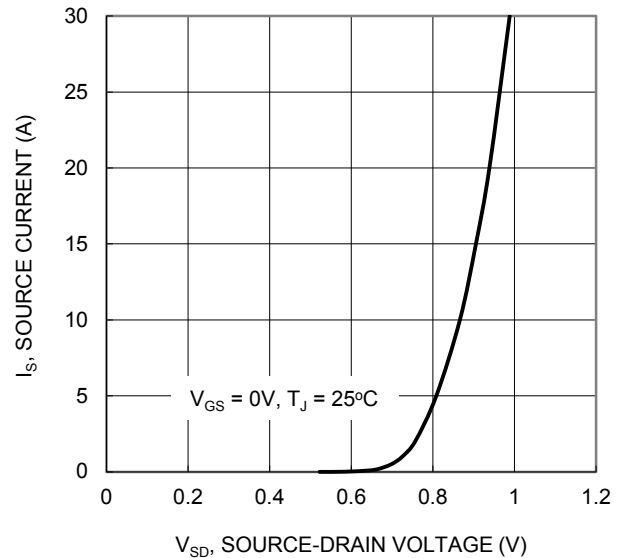


Figure 8. Diode Forward Voltage vs. Current

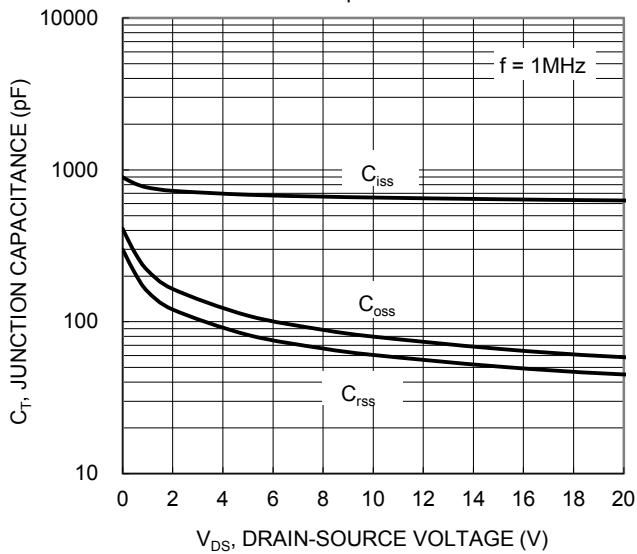


Figure 9. Typical Junction Capacitance

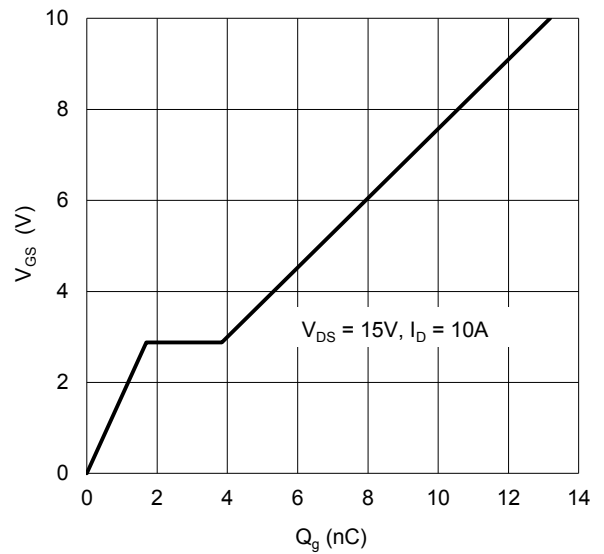


Figure 10. Gate Charge

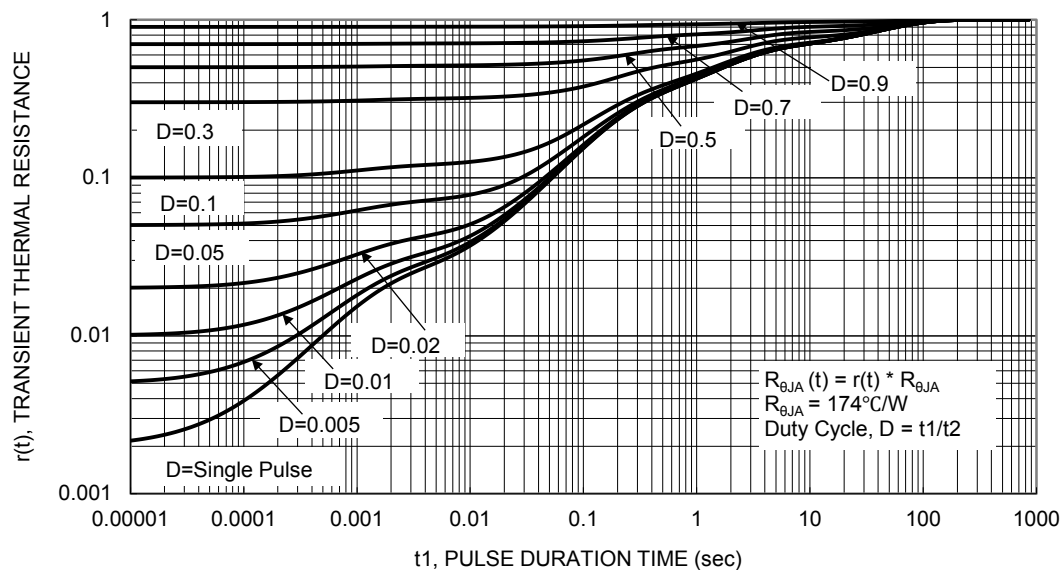
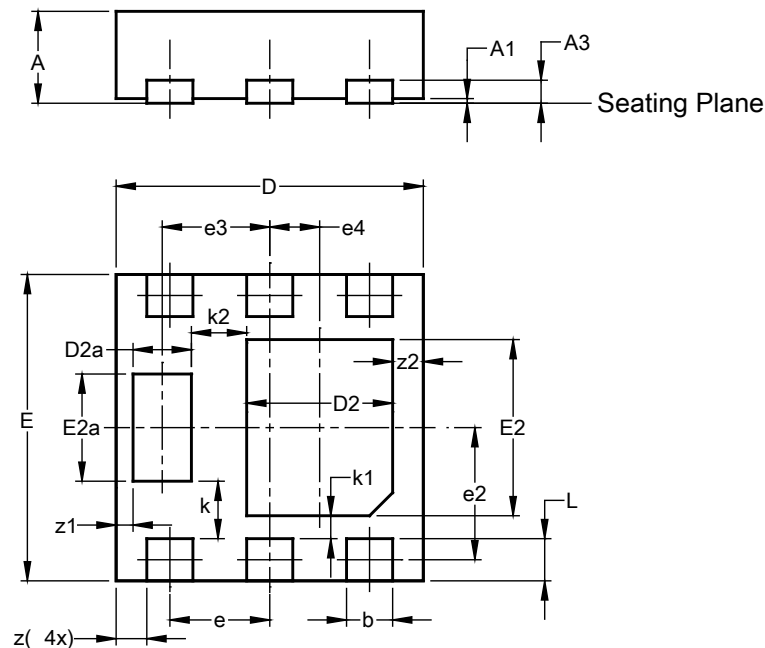


Figure 11. Transient Thermal Resistance

Package Outline Dimensions

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

U-DFN2020-6 (Type F)

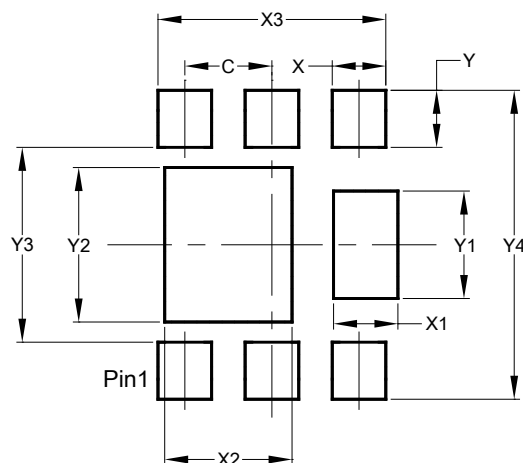


U-DFN2020-6 (Type F)			
Dim	Min	Max	Typ
A	0.57	0.63	0.60
A1	0.00	0.05	0.03
A3	-	-	0.15
b	0.25	0.35	0.30
D	1.95	2.05	2.00
D2	0.85	1.05	0.95
D2a	0.33	0.43	0.38
E	1.95	2.05	2.00
E2	1.05	1.25	1.15
E2a	0.65	0.75	0.70
e	0.65 BSC		
e2	0.863 BSC		
e3	0.70 BSC		
e4	0.325 BSC		
k	0.37 BSC		
k1	0.15 BSC		
k2	0.36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