

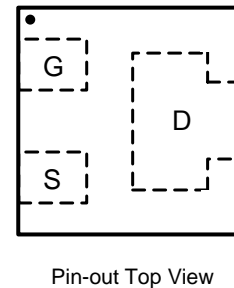
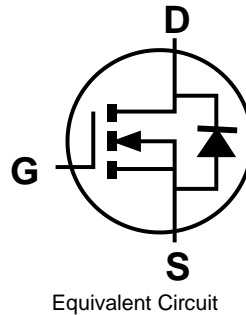
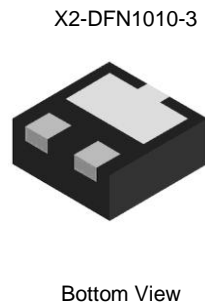
Product Summary

BV_{DSS}	$R_{DS(ON)}$	I_D $T_A = +25^\circ C$
30V	65m Ω @ $V_{GS} = 10V$	3.4A
	75m Ω @ $V_{GS} = 4.5V$	3.0A

Description and Applications

This new generation MOSFET is designed to minimize the on-state resistance ($R_{DS(ON)}$) and yet maintain superior switching performance, making it ideal for high efficiency power management applications.

- Power Management Functions
- Backlighting
- Load Switch



Features and Benefits

- Low On-Resistance
- Low Input/Output Leakage
- Fast Switching Speed
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

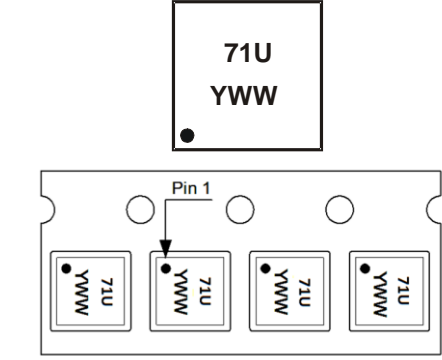
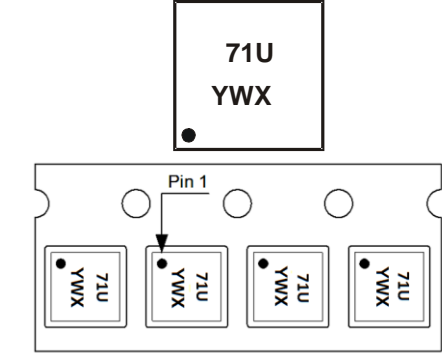
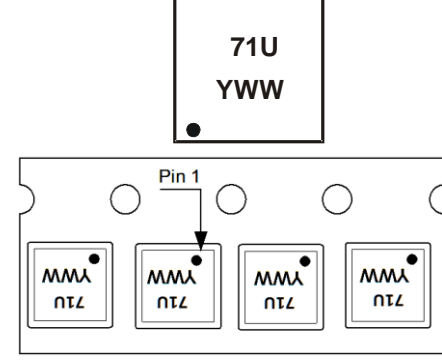
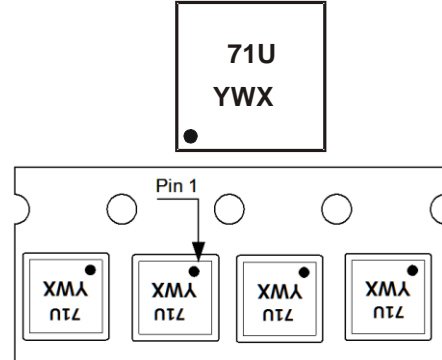
- Case: X2-DFN1010-3
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish — NiPdAu over Copper Leadframe; Solderable per MIL-STD-202, Method 208 **e4**
- Weight: 0.0015 Grams (Approximate)

Ordering Information (Note 4)

Part Number	Case	Tape Width (mm)	Tape Pitch (mm)	Packaging
DMN3071LFR4-7	X2-DFN1010-3	8	4	3000/Tape & Reel
DMN3071LFR4-7R	X2-DFN1010-3	8	4	3000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information

<p>DMN3071LFR4-7</p>	<p>Site 1:</p>  <p>71U = Product Type Marking Code YWW = Date Code Marking Y = Year (ex: G = 2019) WW = Number of Week</p> <p>Site 2:</p>  <p>71U = Product Type Marking Code YWX = Date Code Marking Y = Year (ex: 9 = 2019) W = Week (ex: a = week 27; z represents week 52 and 53) X = Internal Code (ex: U = Monday)</p>
<p>DMN3071LFR4-7R</p>	<p>Site 1:</p>  <p>71U = Product Type Marking Code YWW = Date Code Marking Y = Year (ex: G = 2019) WW = Number of Week</p> <p>Site 2:</p>  <p>71U = Product Type Marking Code YWX = Date Code Marking Y = Year (ex: 9 = 2019) W = Week (ex: a = week 27; z represents week 52 and 53) X = Internal Code (ex: U = Monday)</p>

Marking Information (Cont.)

Site 1:

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

Site 2:

Year	2018	2019	2020	2021	2022	2023	2024	2025
Code	8	9	0	1	2	3	4	5

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

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	Unit
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	3.4	A
		T _A = +100°C		2.7	
Maximum Continuous Body Diode Forward Current (Note 6)			I _S	1.5	A
Pulsed Drain Current (10μs Pulse, Duty Cycle = 1%)			I _{DM}	15	A

Thermal Characteristics

Characteristic			Symbol	Value	Unit
Total Power Dissipation (Note 5)			P _D	0.5	W
Thermal Resistance, Junction to Ambient (Note 5)		Steady State	R _{θJA}	221	°C/W
Total Power Dissipation (Note 6)			P _D	1.1	W
Thermal Resistance, Junction to Ambient (Note 6)		Steady State	R _{θJA}	107	°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 7)						
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 7)						
Gate Threshold Voltage	V _{GS(TH)}	1.0	—	2.5	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(ON)}	—	—	65	mΩ	V _{GS} = 10V, I _D = 3.2A
				75		V _{GS} = 4.5V, I _D = 3.2A
Diode Forward Voltage	V _{SD}	—	0.8	1.2	V	V _{GS} = 0V, I _S = 1A
DYNAMIC CHARACTERISTICS (Note 8)						
Input Capacitance	C _{iSS}	—	190	—	pF	V _{DS} = 15V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	36	—		
Reverse Transfer Capacitance	C _{rSS}	—	26	—		
Gate Resistance	R _g	—	4.2	—	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz
Total Gate Charge (V _{GS} = 4.5V)	Q _g	—	2.1	—	nC	V _{DS} = 15V, I _D = 4A
Total Gate Charge (V _{GS} = 10V)	Q _g	—	4.5	—		
Gate-Source Charge	Q _{gs}	—	0.5	—		
Gate-Drain Charge	Q _{gd}	—	0.8	—		
Turn-On Delay Time	t _{D(ON)}	—	1.7	—	ns	V _{DS} = 15V, V _{GS} = 10V, R _G = 3Ω, I _D = 4A
Turn-On Rise Time	t _R	—	5.7	—		
Turn-Off Delay Time	t _{D(OFF)}	—	6.0	—		
Turn-Off Fall Time	t _F	—	1.6	—		
Reverse Recovery Time	t _{RR}	—	4.2	—	ns	I _F = 4A, di/dt = 100A/μs
Reverse Recovery Charge	Q _{RR}	—	0.5	—	nC	

- Notes:
- Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
 - Device mounted on 1" x 1" FR-4 PCB with high coverage 2oz. Copper, single sided.
 - Short duration pulse test used to minimize self-heating effect.
 - Guaranteed by design. Not subject to production testing.

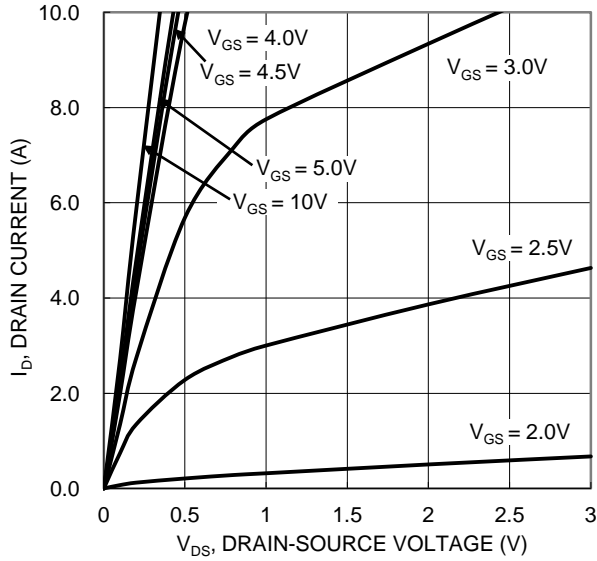


Figure 1. Typical Output Characteristic

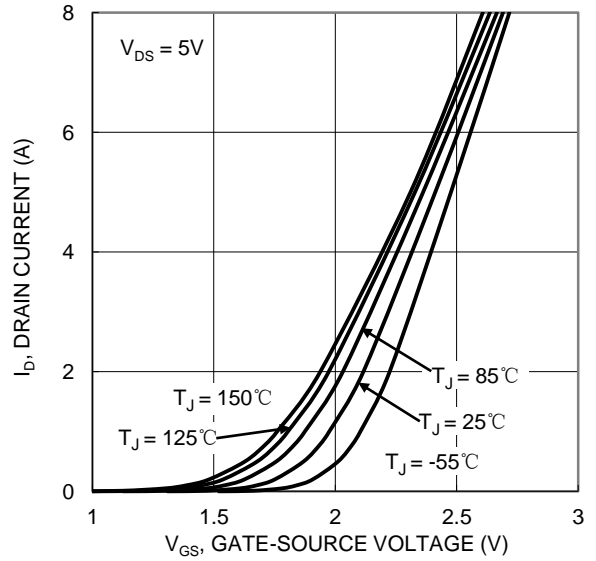


Figure 2. Typical Transfer Characteristic

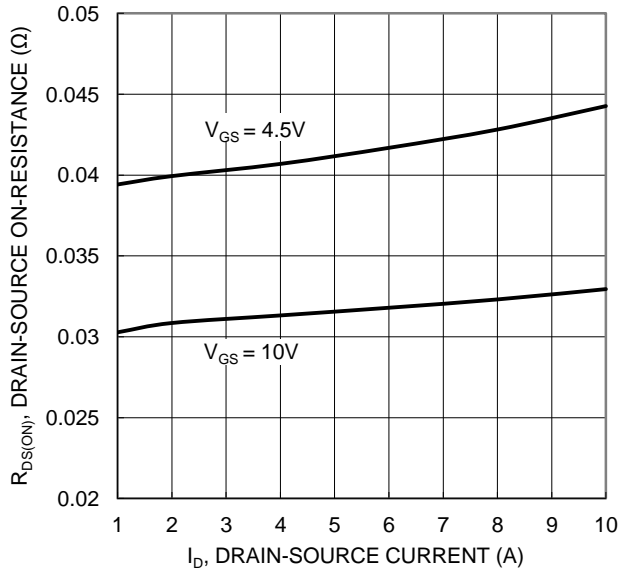


Figure 3. Typical On-Resistance vs. Drain Current and Gate Voltage

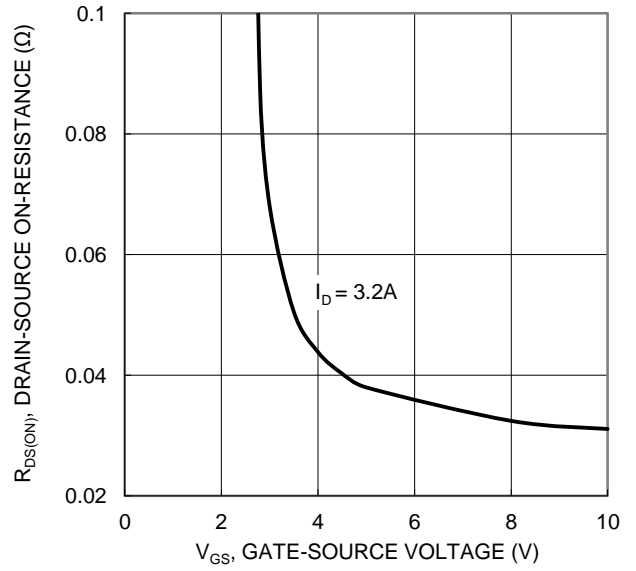


Figure 4. Typical Transfer Characteristic

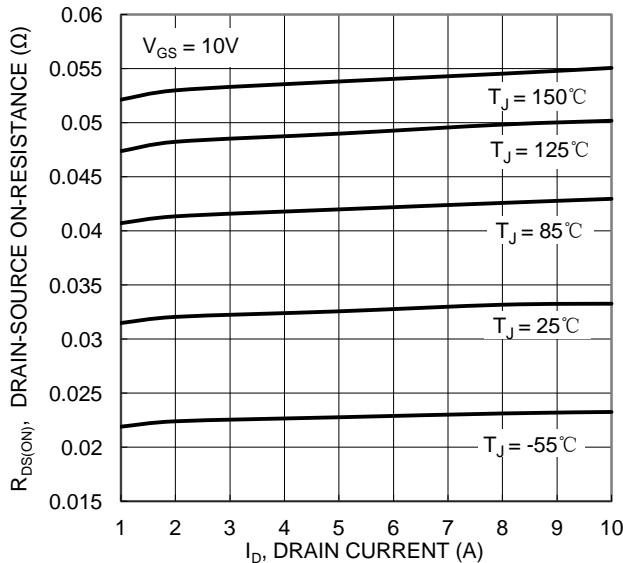


Figure 5. Typical On-Resistance vs. Drain Current and Junction Temperature

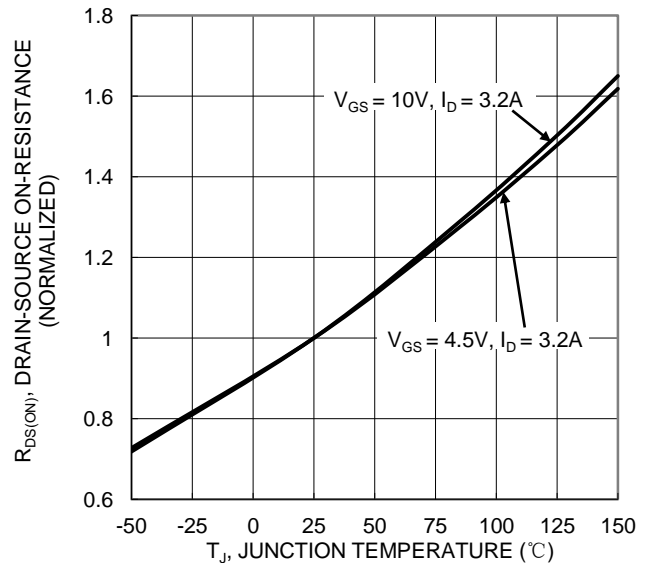
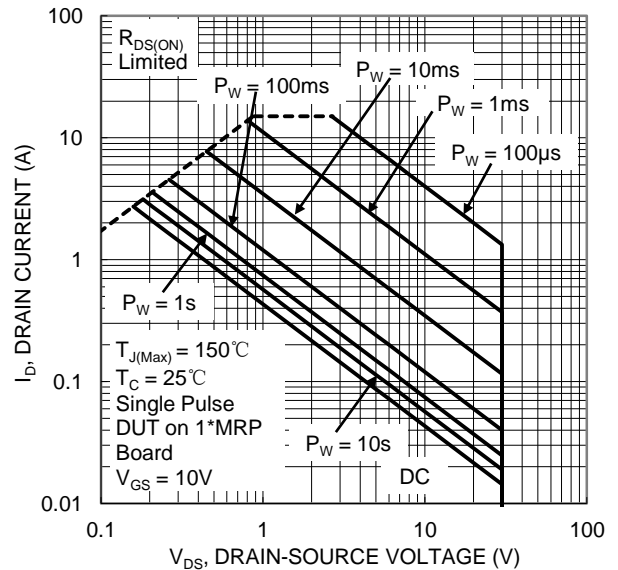
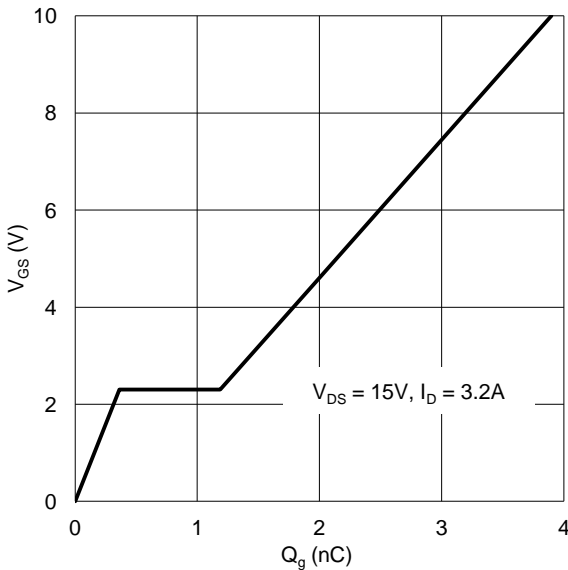
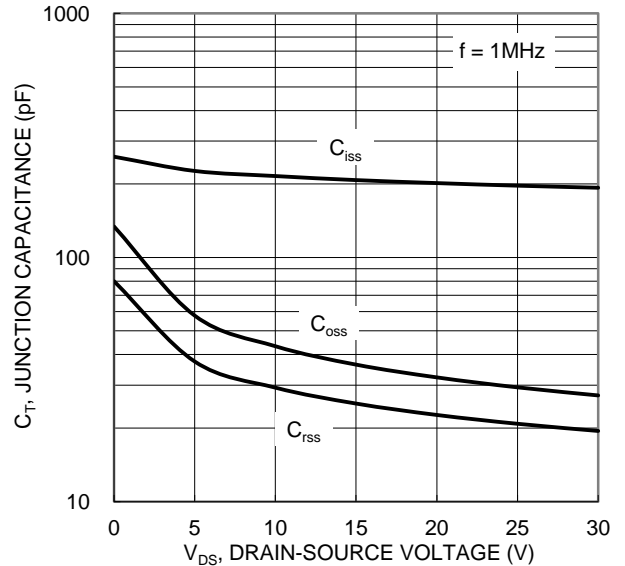
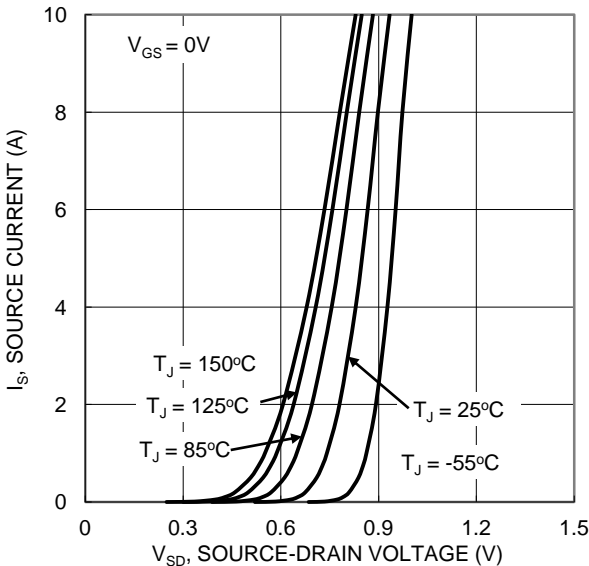
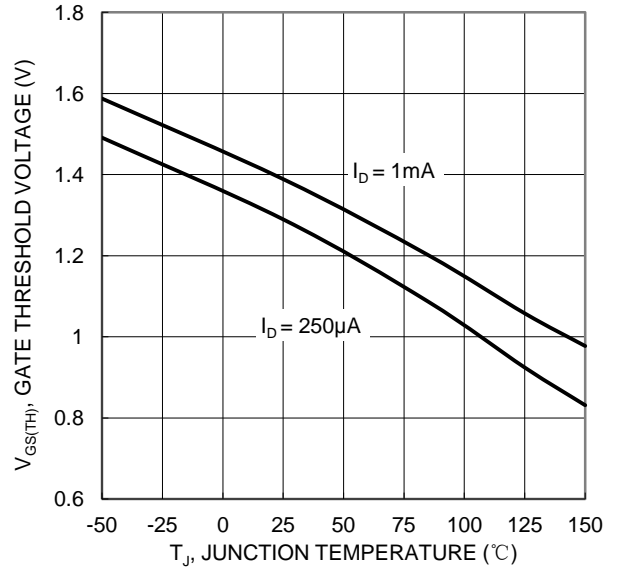
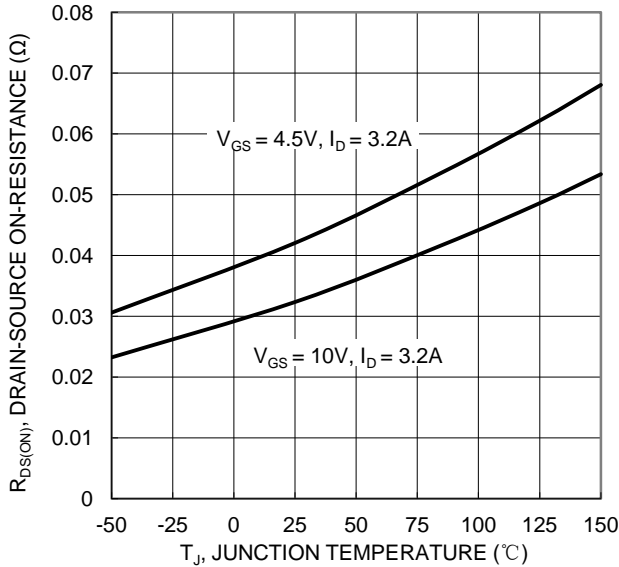


Figure 6. On-Resistance Variation with Junction Temperature



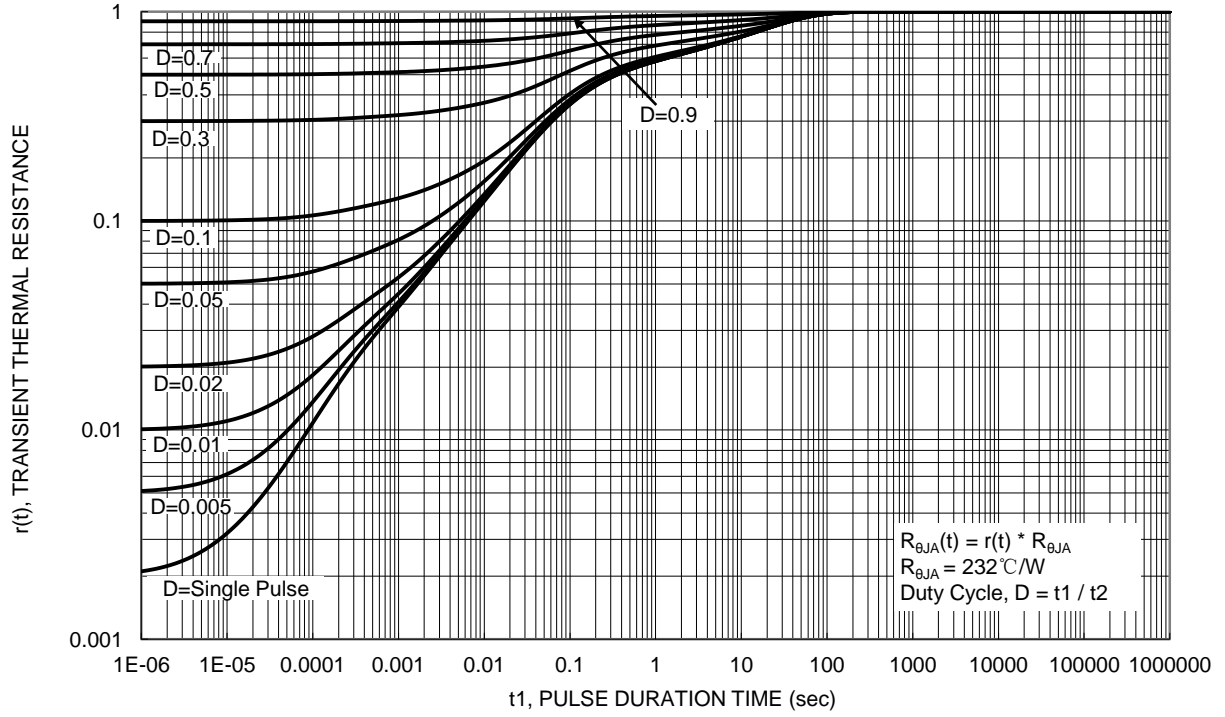
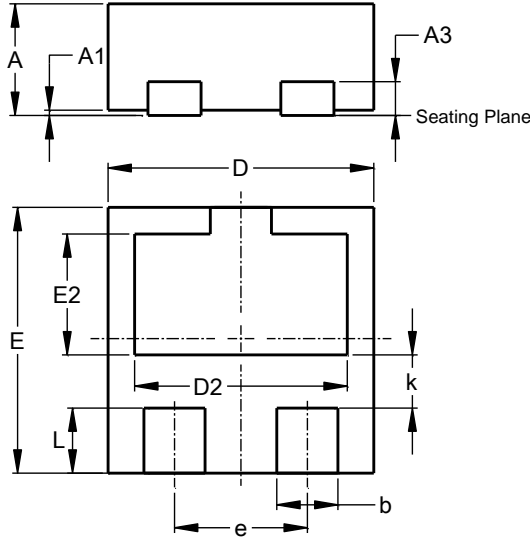


Figure 13. Transient Thermal Resistance

Package Outline Dimensions

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

X2-DFN1010-3

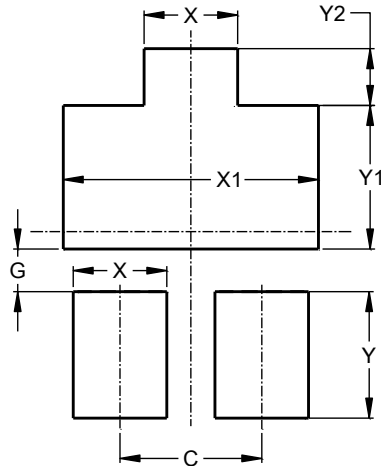


X2-DFN1010-3			
Dim	Min	Max	Typ
A	-	0.40	0.39
A1	0.00	0.05	0.02
A3	-	-	0.13
b	0.18	0.28	0.23
D	0.95	1.05	1.00
D2	0.70	0.90	0.80
E	0.95	1.05	1.00
E2	0.36	0.56	0.46
e	-	-	0.50
k	-	-	0.20
L	0.195	0.295	0.245
All Dimensions in mm			

Suggested Pad Layout

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

X2-DFN1010-3



Dimensions	Value (in mm)
C	0.500
G	0.150
X	0.330
X1	0.900
Y	0.445
Y1	0.505
Y2	0.200

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