



**THE DATASHEET OF
ZXM66P02N8TC**



NOT RECOMMENDED FOR NEW DESIGN
USE [DMP2022LSS](#)



ZXM66P02N8

20V P-CHANNEL ENHANCEMENT MODE MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)}$	I_D
-20V	0.025Ω	-8.0A

Features and Benefits

- High pulse current handling in linear mode
- Low on-resistance
- Fast switching speed
- Low gate drive
- Low profile SOIC package

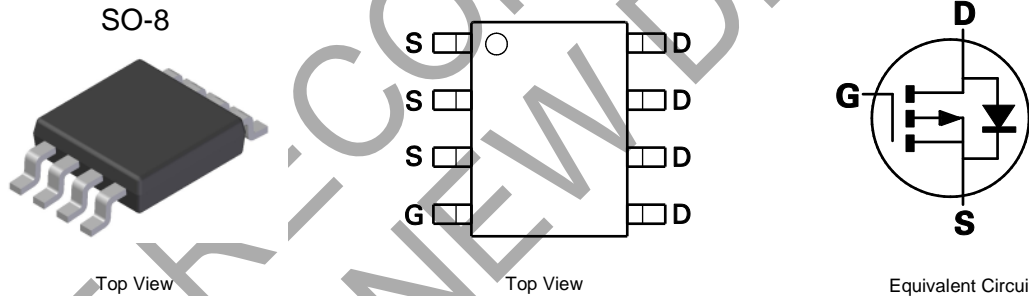
Description and Applications

This high density MOSFET utilizes a unique structure that combines the benefits of a low on-resistance with fast switching speed. This makes it ideal for high efficiency, low voltage power management applications. Compared to trenchFET technology, this MOSFET structure has an intrinsically higher pulse current handling capability in linear mode.

- Inrush protection circuits
- DC-DC Converters
- Power management functions
- Disconnect switches
- Motor control

Mechanical Data

- Case: SO-8
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals Connections: See diagram below
- Terminals: Finish - Matte Tin annealed over Copper lead frame. Solderable per MIL-STD-202, Method 208
- Weight: 0.074 grams (approximate)

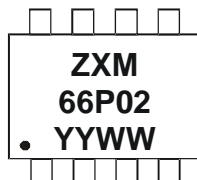


Ordering Information (Note 1)

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXM66P02N8TA	See below	7	12	500

Notes: 1. For packaging details, go to our website.

Marking Information



ZXM = Product Type Marking Code, Line 1
 66P02 = Product Type Marking Code, Line 2
 YYWW = Date Code Marking
 YY = Year (ex: 09 = 2009)
 WW = Week (01-52)

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic			Symbol	Value	Unit	
Drain-Source voltage			V _{DSS}	-20	V	
Gate-Source voltage			V _{GS}	±12	V	
Continuous Drain current	V _{GS} = 4.5V	(Note 3)	I _D	-8.0	A	
		T _A = 70°C (Note 3)		-6.5		
		(Note 2)		-6.4		
Pulsed Drain current			(Note 4)	I _{DM}	-28	A
Continuous Source current (Body diode)			(Note 3)	I _S	-4.15	A
Pulsed Source current (Body diode)			(Note 4)	I _{SM}	-28	A

Thermal Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Power dissipation Linear derating factor	(Note 2)	P _D	1.56	W
			12.5	
	(Note 3)		2.5	
Thermal Resistance, Junction to Ambient	(Note 2)	R _{θJA}	20	°C/W
	(Note 3)		80	
Operating and storage temperature range		T _J , T _{STG}	-55 to 150	°C

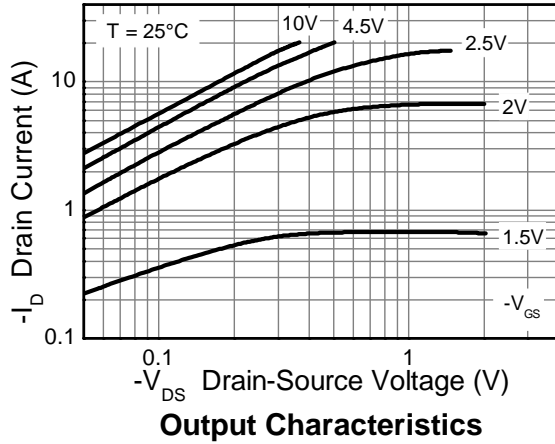
- Notes:
- For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.
 - Same as note (3), except the device is measured at t ≤ 10 sec.
 - Repetitive rating 25mm x 25mm FR4 PCB, D = 0.05, pulse width 10μs – pulse width limited by maximum junction temperature.

Electrical Characteristics @T_A = 25°C unless otherwise specified

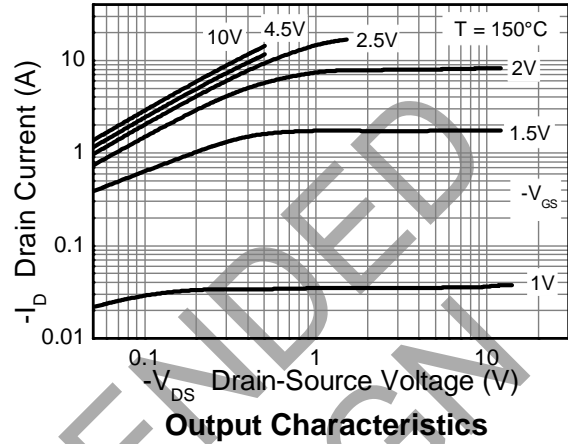
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	-20	—	—	V	I _D = -250μA, V _{GS} = 0V
Zero Gate Voltage Drain Current	I _{DSS}	—	—	-1	μA	V _{DS} = -16V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	-100	nA	V _{GS} = ±12V, V _{DS} = 0V
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(th)}	-0.7	—	—	V	I _D = -250μA, V _{DS} = V _{GS}
Static Drain-Source On-Resistance (Note 5)	R _{DS(on)}	—	—	0.025	Ω	V _{GS} = -4.5V, I _D = -3.2A
				0.045		V _{GS} = -2.5V, I _D = -2.7A
Forward Transconductance (Notes 5 & 6)	g _{fs}	—	13.3	—	S	V _{DS} = -10V, I _D = -3.2A
Diode Forward Voltage (Note 5)	V _{SD}	—	—	0.95	V	I _S = -3.2A, V _{GS} = 0V
Reverse recovery time (Note 6)	t _{rr}	—	23.1	—	ns	I _F = -3.2A, di/dt = 100A/μs
Reverse recovery charge (Note 6)	Q _{rr}	—	12.2	—	nC	
DYNAMIC CHARACTERISTICS (Note 6)						
Input Capacitance	C _{iss}	—	2068	—	pF	V _{DS} = -15V, V _{GS} = 0V F = 1MHz
Output Capacitance	C _{oss}	—	1038	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	506	—	pF	
Total Gate Charge (Note 7)	Q _g	—	43.3	—	nC	V _{GS} = -4.5V, V _{DS} = -10V, I _D = -3.2A
Gate-Source Charge (Note 7)	Q _{gs}	—	3.5	—	nC	
Gate-Drain Charge (Note 7)	Q _{gd}	—	21.3	—	nC	
Turn-On Delay Time (Note 7)	t _{D(on)}	—	14.0	—	ns	V _{DD} = -10V, V _{GS} = -5V I _D = -3.2A, R _G = 6.0Ω
Turn-On Rise Time (Note 7)	t _r	—	44.3	—	ns	
Turn-Off Delay Time (Note 7)	t _{D(off)}	—	118.4	—	ns	
Turn-Off Fall Time (Note 7)	t _f	—	98.4	—	ns	

- Notes:
- Measured under pulsed conditions. Pulse width ≤ 300μs; duty cycle ≤ 2%
 - For design aid only, not subject to production testing.
 - Switching characteristics are independent of operating junction temperatures.

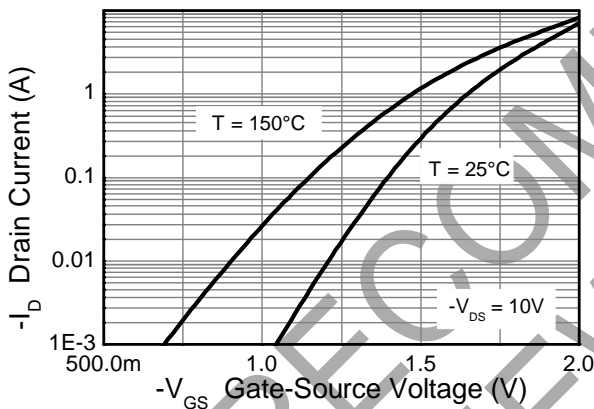
Typical Characteristics



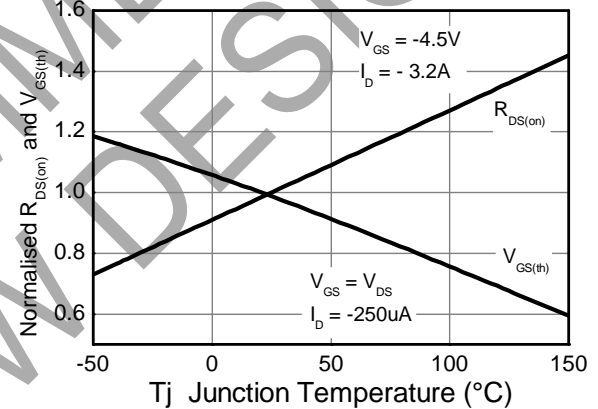
Output Characteristics



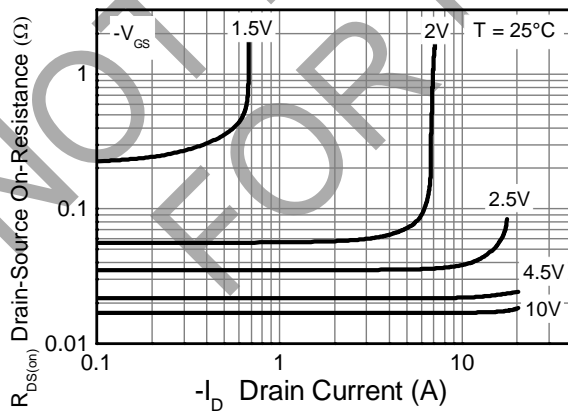
Output Characteristics



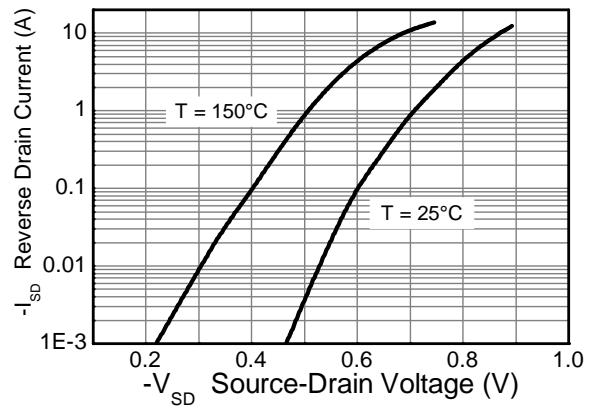
Typical Transfer Characteristics



Normalised Curves v Temperature

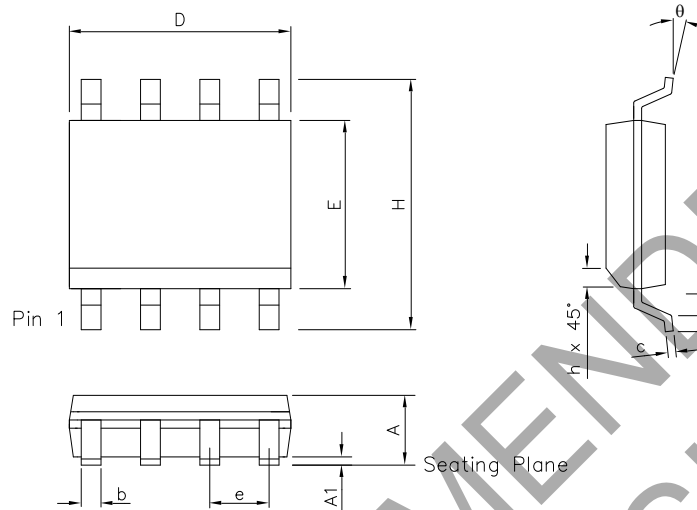


On-Resistance v Drain Current



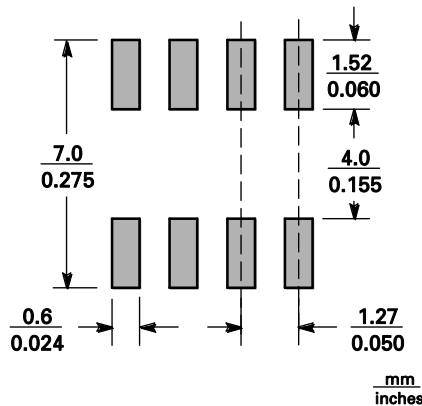
Source-Drain Diode Forward Voltage

Package Outline Dimensions



DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.053	0.069	1.35	1.75	e	0.050 BSC		1.27 BSC	
A1	0.004	0.010	0.10	0.25	b	0.013	0.020	0.33	0.51
D	0.189	0.197	4.80	5.00	c	0.008	0.010	0.19	0.25
H	0.228	0.244	5.80	6.20	theta	0°	8°	0°	8°
E	0.150	0.157	3.80	4.00	h	0.010	0.020	0.25	0.50
L	0.016	0.050	0.40	1.27	-	-	-	-	-

Suggested Pad Layout



IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

- A. Life support devices or systems are devices or systems which:
 - 1. are intended to implant into the body, or
 - 2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.
- B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2009, Diodes Incorporated

www.diodes.com

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View ZXM66P02N8TC on WIN SOURCE](#)

 [Diodes Incorporated Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management