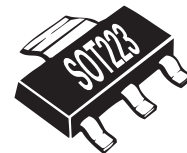


ZXM64N035G

35V N-CHANNEL ENHANCEMENT MODE MOSFET

SUMMARY

$V_{(BR)DSS} = 35V$; $R_{DS(on)} = 0.050\Omega$; $I_D = 6.7A$



DESCRIPTION

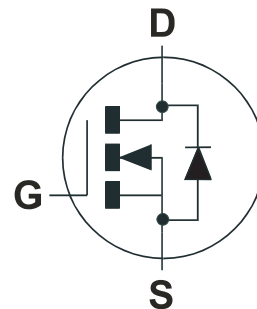
This new generation of high cell density planar MOSFETs from Zetex utilizes a unique structure that combines the benefits of low on-resistance with fast switching speed. This makes them ideal for high efficiency, low voltage, power management applications.

FEATURES

- Low on-resistance
- Fast switching speed
- Low threshold
- Low gate drive
- SOT223 package

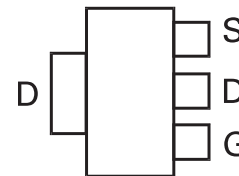
APPLICATIONS

- 50W Class D Audio Output Stage
- Motor Control



ORDERING INFORMATION

DEVICE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
ZXM64N035GTA	7"	12mm	1000 units
ZXM64N035GTC	13"	12mm	4000 units



Top View

DEVICE MARKING

- ZXM6
4N035

ZXM64N035G

ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V _{DSS}	35	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current (V _{GS} =10V; T _A =25°C)(b) (V _{GS} =10V; T _A =70°C)(b) (V _{GS} =10V; T _A =25°C)(a)	I _D	6.7 5.4 4.8	A
Pulsed Drain Current (c)	I _{DM}	30	A
Continuous Source Current (Body Diode) (b)	I _S	2.4	A
Pulsed Source Current (Body Diode)(c)	I _{SM}	30	A
Power Dissipation at T _A =25°C (a) Linear Derating Factor	P _D	2.0 16	W mW/°C
Power Dissipation at T _A =25°C (b) Linear Derating Factor	P _D	3.9 31	W mW/°C
Operating and Storage Temperature Range	T _j :T _{stg}	-55 to +150	°C

THERMAL RESISTANCE

PARAMETER	SYMBOL	VALUE	UNIT
Junction to Ambient (a)	R _{θJA}	62.5	°C/W
Junction to Ambient (b)	R _{θJA}	32	°C/W

NOTES

- (a) For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions
- (b) For a device surface mounted on FR4 PCB measured at t ≤ 10 secs.
- (c) Repetitive rating 25mm x 25mm FR4 PCB, D=0.05 pulse width limited by maximum junction temperature.



PROVISIONAL ISSUE A - JANUARY 2002

ZXM64N035G

ELECTRICAL CHARACTERISTICS (at $T_A = 25^\circ\text{C}$ unless otherwise stated).

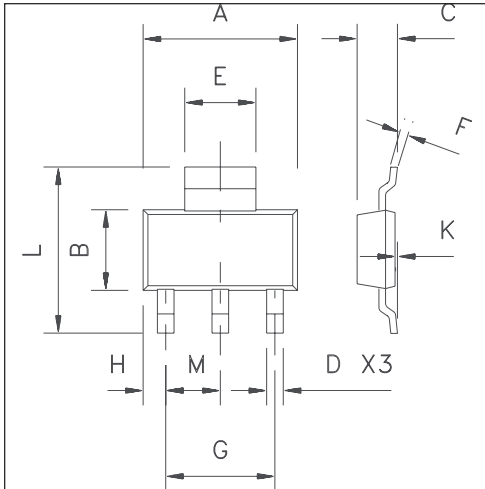
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	35			V	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$
Zero Gate Voltage Drain Current	I_{DSS}			1	μA	$V_{DS}=35\text{V}, V_{GS}=0\text{V}$
Gate-Body Leakage	I_{GSS}			100	nA	$V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$
Gate-Source Threshold Voltage	$V_{GS(th)}$	1.0			V	$I_D=250\mu\text{A}, V_{DS}=V_{GS}$
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$			0.050 0.062	Ω Ω	$V_{GS}=10\text{V}, I_D=3.7\text{A}$ $V_{GS}=4.5\text{V}, I_D=1.9\text{A}$
Forward Transconductance (1)(3)	g_{fs}	4.3			S	$V_{DS}=10\text{V}, I_D=1.9\text{A}$
DYNAMIC (3)						
Input Capacitance	C_{iss}		950		pF	$V_{DS}=25\text{V}, V_{GS}=0\text{V},$ $f=1\text{MHz}$
Output Capacitance	C_{oss}		200		pF	
Reverse Transfer Capacitance	C_{rss}		50		pF	
SWITCHING(2) (3)						
Turn-On Delay Time	$t_{d(on)}$		4.2		ns	$V_{DD} = 15\text{V}, I_D=3.7\text{A}$ $R_G=6.0\Omega, V_{GS}=10\text{V}$
Rise Time	t_r		4.6		ns	
Turn-Off Delay Time	$t_{d(off)}$		20.5		ns	
Fall Time	t_f		8		ns	
Total Gate Charge	Q_g			27	nC	$V_{DS}=24\text{V}, V_{GS}=10\text{V},$ $I_D=3.7\text{A}$
Gate-Source Charge	Q_{gs}			5	nC	
Gate-Drain Charge	Q_{gd}			4.5	nC	
SOURCE-DRAIN DIODE						
Diode Forward Voltage (1)	V_{SD}			0.95	V	$T_J=25^\circ\text{C}, I_S=3.7\text{A},$ $V_{GS}=0\text{V}$
Reverse Recovery Time (3)	t_{rr}		24.5		ns	$T_J=25^\circ\text{C}, I_F=3.7\text{A},$ $di/dt= 100\text{A}/\mu\text{s}$
Reverse Recovery Charge (3)	Q_{rr}		19.1		nC	

NOTES

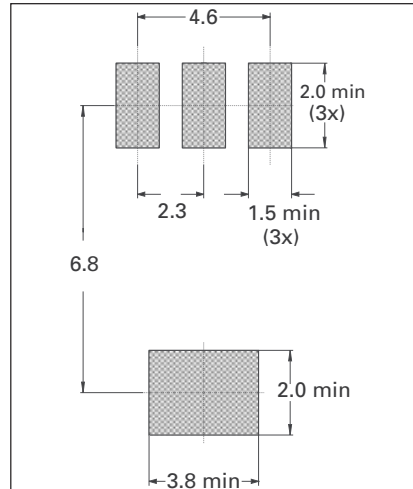
- (1) Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$.
 (2) Switching characteristics are independent of operating junction temperature.
 (3) For design aid only, not subject to production testing.

ZXM64N035G

PACKAGE DIMENSIONS



PAD LAYOUT DETAILS



DIM	Millimetres		Inches	
	Min	Max	Min	Max
A	6.3	6.7	0.248	0.264
B	3.3	3.7	0.130	0.146
C	-	1.7	-	0.067
D	0.6	0.8	0.024	0.031
E	2.9	3.1	0.114	0.122
F	0.24	0.32	0.009	0.13
G	NOM 4.6		NOM 0.181	
H	0.85	1.05	0.033	0.041
K	0.02	0.10	0.0008	0.004
L	6.7	7.3	0.264	0.287
M	NOM 2.3		NOM 0.0905	

© Zetex plc 2001

Zetex plc
Fields New Road
Chadderton
Oldham, OL9 8NP
United Kingdom
Telephone (44) 161 622 4422
Fax: (44) 161 622 4420

Zetex GmbH
Streitfeldstraße 19
D-81673 München
Germany
Telefon: (49) 89 45 49 49 0
Fax: (49) 89 45 49 49 49

Zetex Inc
700 Veterans Memorial Hwy
Hauppauge, NY11788
USA
Telephone: (631) 360 2222
Fax: (631) 360 8222

Zetex (Asia) Ltd
3701-04 Metroplaza, Tower 1
Hing Fong Road
Kwai Fong
Hong Kong
Telephone: (852) 26100 611
Fax: (852) 24250 494

These offices are supported by agents and distributors in major countries world-wide.

This publication is issued to provide outline information only which (unless agreed by the Company in writing) may not be used, applied or reproduced for any purpose or form part of any order or contract or be regarded as a representation relating to the products or services concerned. The Company reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service.

For the latest product information, log on to www.zetex.com

PROVISIONAL ISSUE A - JANUARY 2002