

ZXM64N035G

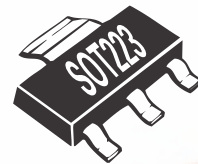
35V N-CHANNEL ENHANCEMENT MODE MOSFET

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 utilises 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.

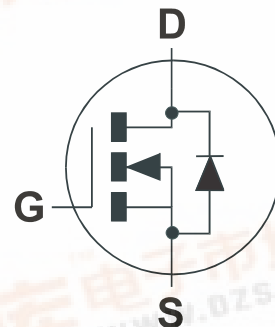


FEATURES

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

APPLICATIONS

- 50W Class D Audio Output Stage
- Motor Control

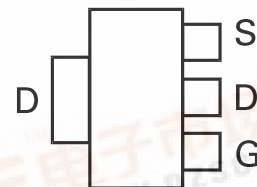


ORDERING INFORMATION

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

DEVICE MARKING

- ZXM6
4N035



Top View

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 ($V_{GS}=10V$; $T_A=25^\circ C$)(b) ($V_{GS}=10V$; $T_A=70^\circ C$)(b) ($V_{GS}=10V$; $T_A=25^\circ C$)(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 $T_A=25^\circ C$ (a) Linear Derating Factor	P_D	2.0 16	W mW/ $^\circ C$
Power Dissipation at $T_A=25^\circ C$ (b) Linear Derating Factor	P_D	3.9 31	W mW/ $^\circ C$
Operating and Storage Temperature Range	$T_j:T_{stg}$	-55 to +150	$^\circ C$

THERMAL RESISTANCE

PARAMETER	SYMBOL	VALUE	UNIT
Junction to Ambient (a)	$R_{\theta JA}$	62.5	$^\circ C/W$
Junction to Ambient (b)	$R_{\theta JA}$	32	$^\circ C/W$

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 $t \leq 10$ secs.

(c) Repetitive rating 25mm x 25mm FR4 PCB, $D=0.05$ pulse width limited by maximum junction temperature.

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

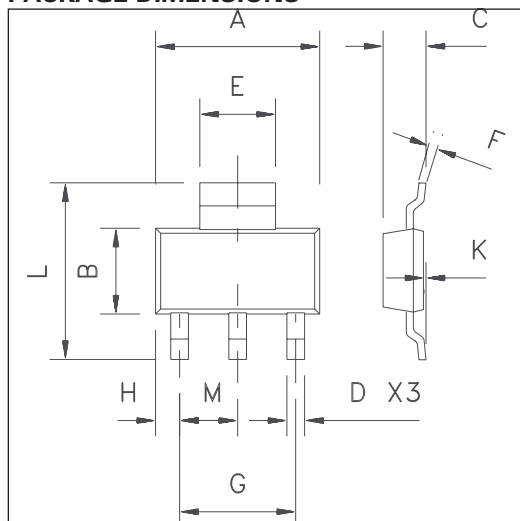
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	35			V	I _D =250μA, V _{GS} =0V
Zero Gate Voltage Drain Current	I _{DSS}			1	μA	V _{DS} =35V, V _{GS} =0V
Gate-Body Leakage	I _{GSS}			100	nA	V _{GS} =±20V, V _{DS} =0V
Gate-Source Threshold Voltage	V _{GS(th)}	1.0			V	I _D =250μA, V _{DS} = V _{GS}
Static Drain-Source On-State Resistance (1)	R _{DS(on)}			0.050 0.062	Ω Ω	V _{GS} =10V, I _D =3.7A V _{GS} =4.5V, I _D =1.9A
Forward Transconductance (1)(3)	g _{fs}	4.3			S	V _{DS} =10V, I _D =1.9A
DYNAMIC (3)						
Input Capacitance	C _{iss}		950		pF	V _{DS} =25V, V _{GS} =0V, f=1MHz
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} =15V, I _D =3.7A R _G =6.0Ω, V _{GS} =10V
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} =24V, V _{GS} =10V, I _D =3.7A
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°C, I _S =3.7A, V _{GS} =0V
Reverse Recovery Time (3)	t _{rr}		24.5		ns	T _J =25°C, I _F =3.7A, di/dt= 100A/μs
Reverse Recovery Charge (3)	Q _{rr}		19.1		nC	

NOTES

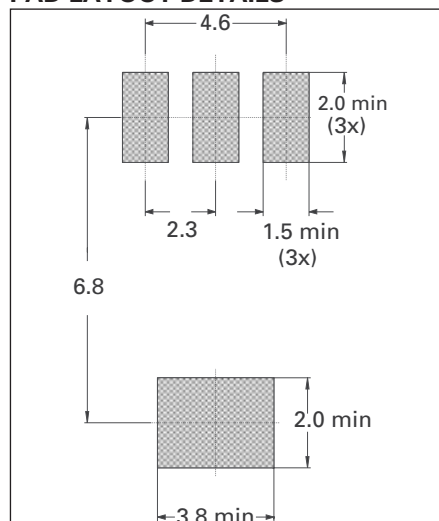
- (1) Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$.
- (2) Switching characteristics are independent of operating junction temperature.
- (3) For design aid only, not subject to production testing.

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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	

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