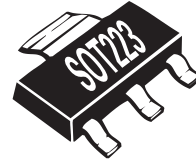


ZXM64N035G

35V N-CHANNEL ENHANCEMENT MODE MOSFET

SUMMARY

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

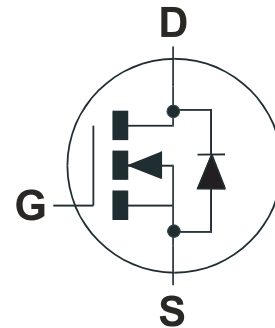


DESCRIPTION

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

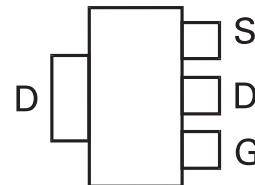


APPLICATIONS

- 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



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 ($V_{GS}=10V$; $T_A=25^\circ C$) ^(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.

ZXM64N035G

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

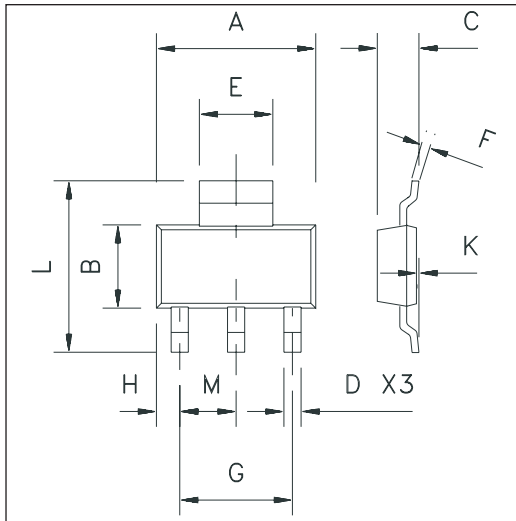
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	35			V	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$
Zero Gate Voltage Drain Current	I_{DSS}			1	μA	$V_{DS}=35\text{V}, V_{GS}=0\text{V}$
Gate-Body Leakage	I_{GSS}			100	nA	$V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$
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	$V_{GS}=10\text{V}, I_D=3.7\text{A}$ $V_{GS}=4.5\text{V}, I_D=1.9\text{A}$
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

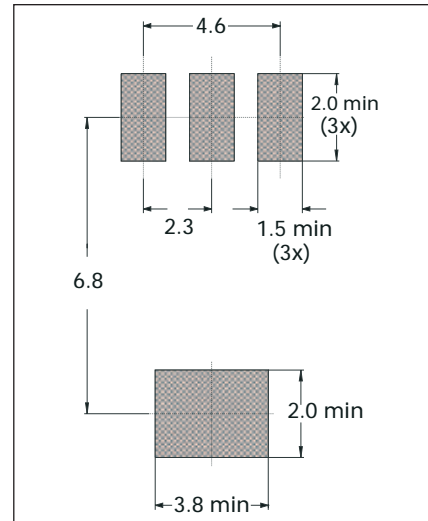
- (1) Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$.
 (2) Switching characteristics are independent of operating junction temperature.
 (3) For design aid only, not subject to production testing.

ZXM64N035G

PACKAGE DIMENSIONS



PAD LAYOUT DETAILS



DIM	Millimeters		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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