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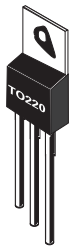
ZXM64P035L3

35V P-CHANNEL ENHANCEMENT MODE MOSFET

SUMMARY



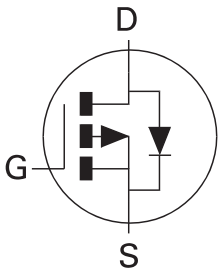
$V_{(BR)DSS}$ = -35V: $R_{DS(on)}$ = 0.075Ω: I_D = -12A

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
- TO220 package

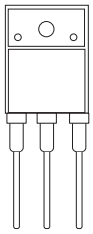


APPLICATIONS

- 100W Class D Audio Output Stage
- Motor Control

ORDERING INFORMATION

DEVICE	MULTIPLES
ZXM64P035L3	1000



G D S

Front View

DEVICE MARKING

- ZXM6
  4P035

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ZXM64P035L3

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_C=25°C)(a) (V_{GS}= -10V; T_A=25°C)(b)	I_D	-12 -3.3	A
Pulsed Drain Current (b)	I_{DM}	-19	A
Continuous Source Current (Body Diode) (b)	I_S	-2.3	A
Pulsed Source Current (Body Diode)(b)	I_{SM}	-19	A
Power Dissipation at T_A=25°C (a) Linear Derating Factor	P_D	20 160	W mW/°C
Power Dissipation at T_A=25°C (b) Linear Derating Factor	P_D	1.5 12	W mW/°C
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +150	°C

THERMAL RESISTANCE

PARAMETER	SYMBOL	VALUE	UNIT
Junction to Case (a)	$R_{\theta JC}$	6.25	°C/W
Junction to Ambient (b)	$R_{\theta JA}$	83.3	°C/W

ELECTRICAL CHARACTERISTICS (at T_A = 25°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)	$R_{DS(on)}$			0.075 0.105	Ω Ω	V_{GS}=-10V, I_D=-2.4A V_{GS}=-4.5V, I_D=-1.2A
Forward Transconductance (1)(3)	g_{fs}	2.3			S	V_{DS}=-10V,I_D=-1.2A
DYNAMIC (3)						
Input Capacitance	C_{iss}		825		pF	V_{DS}=-25V, V_{GS}=0V, f=1MHz
Output Capacitance	C_{oss}		250		pF	
Reverse Transfer Capacitance	C_{rss}		80		pF	
SWITCHING(2) (3)						
Turn-On Delay Time	$t_{d(on)}$		4.4		ns	V_{DD} =-15V, I_D=-2.4A R_G=6.0Ω, V_{GS}=-10V
Rise Time	t_r		6.2		ns	
Turn-Off Delay Time	$t_{d(off)}$		40		ns	
Fall Time	t_f		29.2		ns	
Total Gate Charge	Q_g			46	nC	V_{DS}=-24V,V_{GS}=-10V, I_D=-2.4A
Gate-Source Charge	Q_{gs}			9	nC	
Gate-Drain Charge	Q_{gd}			11.5	nC	
SOURCE-DRAIN DIODE						
Diode Forward Voltage (1)	V_{SD}			-0.95	V	T_J=25°C, I_S=-2.4A, V_{GS}=0V
Reverse Recovery Time (3)	t_{rr}		30.2		ns	T_J=25°C, I_F=-2.4A, di/dt= 100A/μs
Reverse Recovery Charge (3)	Q_{rr}		27.8		nC	

NOTES

(1) Measured under pulsed conditions. Width=300μs. Duty cycle ≤ 2% .

(2) Switching characteristics are independent of operating junction temperature.

(3) For design aid only, not subject to production testing.

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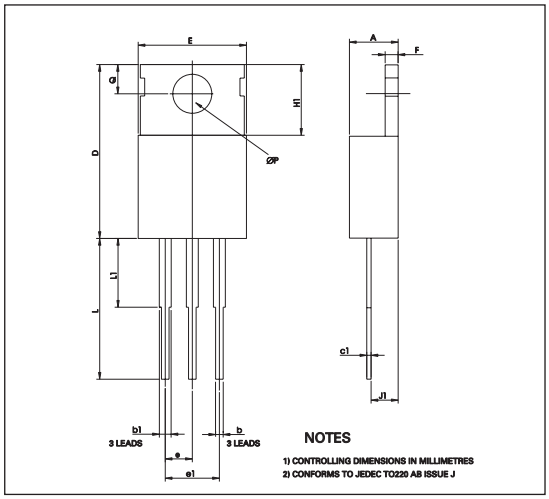
ZXM64P035L3

Package Outline



Package Dimensions

DIM	Millimetres		Inches	
	Min	Max	Min	Max
A	3.56	4.82	0.140	0.189
b	0.38	1.01	0.015	0.040
b1	1.15	1.77	0.045	0.070
c1	0.41	0.50	0.016	0.020
D	14.23	16.51	0.560	0.650
E	9.66	10.66	0.380	0.419
e	2.29	2.79	0.090	0.110
e1	4.83	5.33	0.190	0.210
F	0.51	1.39	0.20	0.055
H1	5.58	6.85	0.230	0.270
J1	2.04	2.92	0.080	0.115
L	12.70	14.73	0.500	0.580
L1	—	6.35	—	0.250
∅P	3.54	4.08	0.139	0.160
Q	2.54	3.42	0.100	0.134

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