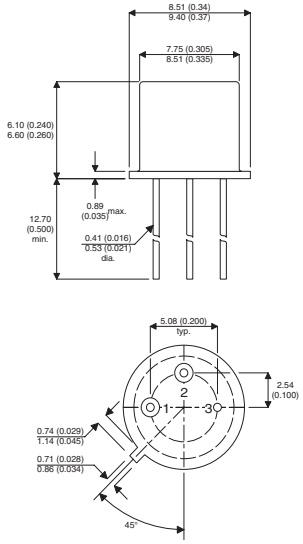
ZVN2106B

MECHANICAL DATA

Dimensions in mm (inches)



TO-39 PACKAGE (TO-205AD)

(Underside View)

PIN 1 – SOURCE PIN 3 – DRAIN

PIN 2 – GATE CASE – DRAIN

N–CHANNEL ENHANCEMENT MODE MOSFET

V_{DSS} 60V

I_D 1.2A

$R_{DS(on)}$ 2.0Ω

FEATURES

- Faster switching
- Low Ciss
- Integral Source-Drain Diode
- High Input Impedance and High Gain

DESCRIPTION

This enhancement-mode (normally-off) vertical DMOS FET is ideally suited to a wide range of switching and amplifying applications where high breakdown voltage, high input impedance, low input capacitance, and fast switching speeds are desired.

High Reliability Screening options are available.

ABSOLUTE MAXIMUM RATINGS T_{CASE} = 25°C unless otherwise stated

V_{DS}	Drain - Source Voltage		60V
I_D	Drain Current	- Continuous (T_C = 25°C)	1.2A
		- Continuous (T_A = 25°C)	0.45A
I_{DM}	Drain Current	- Pulsed (Note 1)	8A
V_{GS}	Gate - Source Voltage		±20V
$P_{tot(1)}$	Total Power Dissipation at T_{mb} ≤ 25°C		5W
	De-rate Linearly above 25°C		0.040W/°C
$P_{tot(2)}$	Total Power Dissipation at T_{amb} ≤ 25°C		700mW
T_j,T_{stg}	Operating and Storage Junction Temperature Range		-55 to +150°C

THERMAL DATA

R_{thj-c}	Thermal Resistance Junction – Case	Max	20	°C/W
$R_{thj-amb}$	Thermal Resistance Junction - Ambient	Max	179	°C/W

NOTES: 1) Repetitive Rating: Pulse Width limited by maximum junction temperature.

2) Pulse Test: Pulse Width ≤ 380μS, Duty Cycle , δ 2%

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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STATIC ELECTRICAL RATINGS (T_{case}=25°C unless otherwise stated)

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)DSS}$	Drain – Source Breakdown Voltage	V_{GS} = 0V	I_D = 10µA	60	-	-	V
$V_{GS(th)}$	Gate – Source threshold Voltage	V_{DS} = V_{GS}	I_D = 1.0mA	0.8	-	2.4	
I_{GSS}	Gate – Source Leakage Current	V_{GS} = ±20V	V_{DS} = 0V	-	-	±20	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 60V	V_{GS} = 0V	-	-	0.5	µA
		V_{DS} = 48V	T_C = 125°C	-	-	100	
$I_{D(on)}$	On – State Drain Current (note 2)	V_{DS} = 18V	V_{GS} = 10V	2	-	-	A
$R_{DS(on)}$	Drain – Source On Resistance (note 2)	V_{GS} = 10V	I_D = 1.0A	-	-	2	Ω
g_{FS}	Forward Transconductance (note 2)	V_{DS} = 18V	I_D = 1.0A	300	-	-	ms
V_{SD}	Diode Forward Voltage (note 2)	V_{GS} = 0V	I_s = 0.45A	-	0.8	-	V

DYNAMIC CHARACTERISTICS

C_{iss}	Input Capacitance	V_{DS} = 18V f = 1.0MHz	V_{GS} = 0V	-	-	75	pF
C_{oss}	Output Capacitance			-	-	45	
C_{rss}	Reverse Transfer Capacitance			-	-	20	
$t_{d(on)}$	Turn-On Delay	V_{DD} = 18V	I_D = 1A (note 2)	-	-	7	ns
t_r	Rise Time			-	-	8	
$t_{d(off)}$	Turn-Off Delay Time			-	-	12	
t_f	Fall Time			-	-	15	
t_{rr}	Reverse Recovery Time	V_{GS} = 0V, I_F = 0.45A, I_R = 0.1A		-	50	-	ns

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