# **VN2406L**

**Preferred Device** 

# **Small Signal MOSFET** 200 mAmps, 240 Volts

N-Channel TO-92

## MA

MAXIMUM RATINGS					
Rating	Symbol	Value	Unit		
Drain – Source Voltage	V <sub>DSS</sub>	240	Vdc		
Drain-Gate Voltage	V <sub>DGR</sub>	240	Vdc		
Gate – Source Voltage – Continuous – Non–repetitive (t <sub>p</sub> ≤ 50 μs)	V <sub>GS</sub> V <sub>GSM</sub>	± 20 ± 40	Vdc Vpk		
Continuous Drain Current	Ι <sub>D</sub>	200	mAdc		
Pulsed Drain Current	I <sub>DM</sub>	500	mAdc		
Power Dissipation @ T <sub>C</sub> = 25°C Derate above 25°C	PD	350 2.8	mW mW/°C		
Operating and Storage Temperature	T <sub>J</sub> , T <sub>stg</sub>	-	°C		

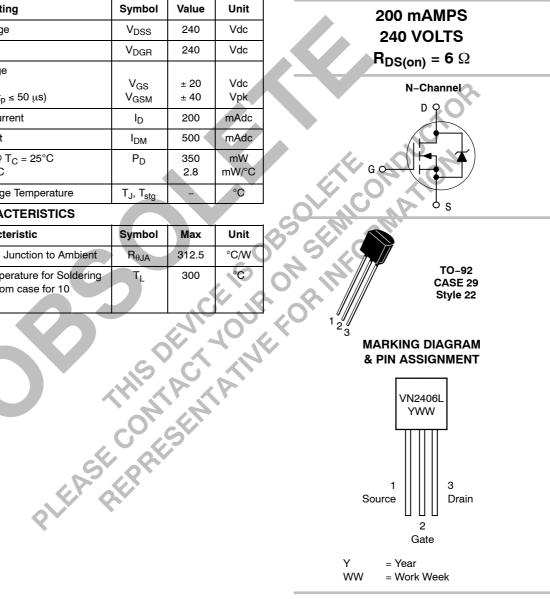
# **THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	312.5	°C/W
Maximum Lead Temperature for Soldering Purposes, 1/16" from case for 10 seconds	TL	300	ç



# **ON Semiconductor™**

http://onsemi.com



## **ORDERING INFORMATION**

Device	Package	Shipping		
VN2406L	TO-92	1000 Units/Box		
VN2406LZL1	TO-92	2000 Ammo Pack		

Preferred devices are recommended choices for future use and best overall value.

# VN2406L

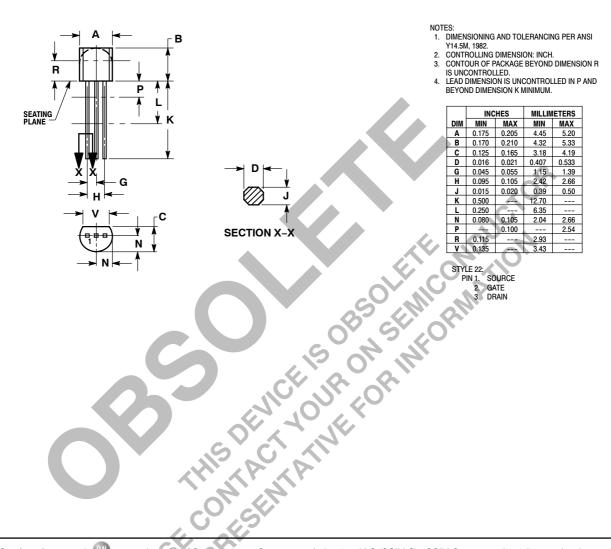
# ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

	Characteristic	Symbol	Min	Max	Unit
STATIC CHARACTERISTICS					
Drain – Source Breakdown Voltag $(V_{GS} = 0, I_D = 100 \ \mu A)$	9	V <sub>(BR)DSS</sub>	240	-	Vdc
Zero Gate Voltage Drain Current $(V_{DS} = 120 \text{ Vdc}, V_{GS} = 0)$ $(V_{DS} = 120 \text{ Vdc}, V_{GS} = 0, T_A =$	125°C)	I <sub>DSS</sub>		10 500	μAdc
Gate- Body Leakage $(V_{DS} = 0, V_{GS} = \pm 15 \text{ V})$		I <sub>GSS</sub>	-	±100	nAdc
Gate Threshold Voltage $(V_{DS} = V_{GS}, I_D = 1.0 \text{ mA})$		V <sub>GS(th)</sub>	0.8	2.0	Vdc
On–State Drain Current (Note 1) (V <sub>GS</sub> = 10 V, V <sub>DS</sub> $\ge$ 2.0 V <sub>DS(on)</sub> )		I <sub>D(on)</sub>	1.0	-	Adc
$      Drain-Source \ On \ Resistance \ (No \ (V_{GS} = 2.5 \ V, \ I_D = 0.1 \ A) \ (V_{GS} = 10 \ V, \ I_D = 0.5 \ A) $	te 1)	r <sub>DS(on)</sub>		10 6.0	Ω
Forward Transconductance (Note ( $V_{DS}$ = 10 V, $I_D$ = 0.5 A)	1)	9 <sub>fs</sub>	300	-	mS
DYNAMIC CHARACTERISTIC	s			2	
Input Capacitance		C <sub>iss</sub>	N- /	125	pF
Output Capacitance	(V <sub>DS</sub> = 25 Vdc, V <sub>GS</sub> = 0, f = 1.0 MHz)	C <sub>oss</sub>		50	pF
Reverse Transfer Capacitance	G	Crss		20	pF
SWITCHING CHARACTERIS	rics	6	C	•	
Turn–On Time	6	t <sub>(on)</sub>	-	8.0	ns
	$(V_{DD} = 60 \text{ Vdc}, I_D = 0.4 \text{ A}, R_L = 150 \Omega, R_G = 25 \Omega)$	t <sub>(r)</sub>	_	8.0	ns
Turn-Off Time	11 - 130 sz, 11G - 23 sz)	t <sub>(off)</sub>	_	23	ns
		t <sub>(f)</sub>	_	34	ns
	s, Duty Cycle ≤ 2.0%.				

### VN2406L

#### PACKAGE DIMENSIONS

TO-92 CASE 29-11 ISSUE AL



**ON Semiconductor** and **U** are trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC besone to convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILC and tis officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer.

### PUBLICATION ORDERING INFORMATION

#### Literature Fulfillment:

Literature Distribution Center for ON Semiconductor

P.O. Box 5163, Denver, Colorado 80217 USA

Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada Email: ONlit@hibbertco.com

N. American Technical Support: 800-282-9855 Toll Free USA/Canada

JAPAN: ON Semiconductor, Japan Customer Focus Center 4–32–1 Nishi–Gotanda, Shinagawa–ku, Tokyo, Japan 141–0031 Phone: 81–3–5740–2700 Email: r14525@onsemi.com

ON Semiconductor Website: http://onsemi.com

For additional information, please contact your local Sales Representative.