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[VN0300L](#)

For any questions, you can email us directly:

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VN0300L

Preferred Device

Small Signal MOSFET 200 mAmps, 60 Volts N-Channel TO-92

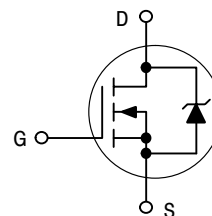


ON Semiconductor

<http://onsemi.com>

200 mAmps
60 Volts
RDS(on) = 1.2 Ω

N-Channel

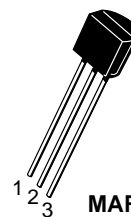


MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V _{DSS}	60	V
Drain-Gate Voltage	V _{DGR}	60	V
Gate-Source Voltage	V _{GS}	± 20	Vdc
– Continuous	V _{GSM}	± 40	Vpk
– Non-repetitive (t _p ≤ 50 μs)			
Continuous Drain Current	I _D	200	mA
Pulsed Drain Current	I _{DM}	500	mA
Power Dissipation @ T _C = 25°C	P _D	350	mW
Derate above 25°C		2.8	mW/°C
Operating and Storage Temperature	T _J , T _{stg}	–	°C

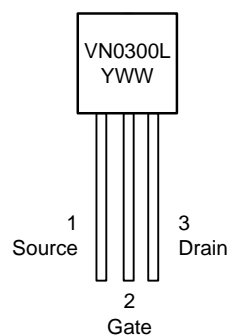
THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	R _{θJA}	312.5	°C/W
Maximum Lead Temperature for Soldering Purposes, 1/16" from case for 10 seconds	T _L	300	°C



TO-92
CASE 29
Style 22

MARKING DIAGRAM & PIN ASSIGNMENT



Y = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping
VN0300L	TO-92	1000 Units/Box
VN0300LRLRA	TO-92	2000 Tape & Reel
VN0300LRLRE	TO-92	2000 Tape & Reel

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

VN0300L

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

Characteristic	Symbol	Min	Max	Unit
STATIC CHARACTERISTICS				
Drain–Source Breakdown Voltage ($V_{DS} = 0, I_D = 10 \mu\text{A}$)	$V_{(BR)DSS}$	30	–	V
Zero Gate Voltage Drain Current ($V_{DS} = 48 \text{ Vdc}, V_{GS} = 0$) ($V_{DS} = 48 \text{ Vdc}, V_{GS} = 0, T_A = 125^\circ\text{C}$)	I_{DSS}	–	10 500	μA
Gate–Body Leakage ($V_{DS} = 0, V_{GS} = \pm 30 \text{ V}$)	I_{GSS}	–	± 100	nA
Gate Threshold Voltage ($V_{DS} = V_{GS}, I_D = 1.0 \text{ mA}$)	$V_{GS(th)}$	0.8	2.5	V
On–State Drain Current (Note 1.) ($V_{DS} = V_{GS}, I_D = 1.0 \text{ mA}$)	$I_{D(on)}$	1.0	–	A
Drain–Source On Resistance (Note 1.) ($V_{GS} = 5.0 \text{ V}, I_D = 0.3 \text{ A}$) ($V_{GS} = 10 \text{ V}, I_D = 1.0 \text{ A}$)	$r_{DS(on)}$	–	3.3 1.2	Ω
Forward Transconductance (Note 1.) ($V_{DS} = 10 \text{ V}, I_D = 0.5 \text{ A}$)	g_{fs}	200	–	mS

DYNAMIC CHARACTERISTICS

Input Capacitance	$(V_{DS} = 15 \text{ Vdc}, V_{GS} = 0,$ $f = 1.0 \text{ MHz})$	C_{iss}	–	100	pF
Output Capacitance		C_{oss}	–	95	pF
Reverse Transfer Capacitance		C_{rss}	–	25	pF

SWITCHING CHARACTERISTICS

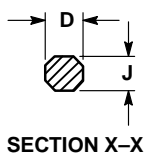
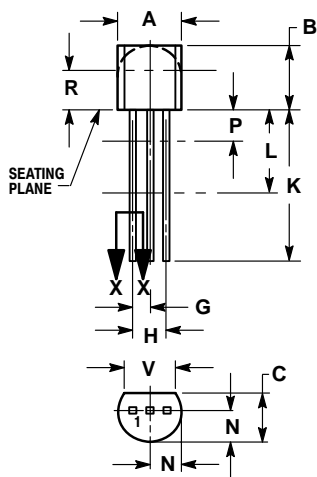
Turn–On Time	$(V_{DD} = 25 \text{ Vdc}, I_D = 1.0 \text{ A},$ $R_L = 24 \Omega, R_G = 25 \Omega)$	t_{on}	–	30	ns
Turn–Off Time		t_{off}	–	30	ns

 1. Pulse Test; Pulse Width < 300 μs , Duty Cycle $\leq 2.0\%$.

VN0300L

PACKAGE DIMENSIONS

TO-92
CASE 29-11
ISSUE AL



NOTES:


1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---

STYLE 22:

1. SOURCE
2. GATE
3. DRAIN

VN0300L

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