Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

ON Semiconductor
VN0300L

For any questions, you can email us directly:
sales@integrated-circuit.com

VN0300L

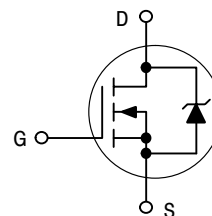**Preferred Device**

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

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain–Source Voltage	V_{DSS}	60	V
Drain–Gate Voltage	V_{DGR}	60	V
Gate–Source Voltage – Continuous – Non–repetitive ($t_p \leq 50$ μs)	V_{GS} V_{GSM}	± 20 ± 40	Vdc Vpk
Continuous Drain Current	I_D	200	mA
Pulsed Drain Current	I_{DM}	500	mA
Power Dissipation @ $T_C = 25°C$ Derate above 25°C	P_D	350 2.8	mW mW/°C
Operating and Storage Temperature	T_J, T_{stg}	–	°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	312.5	°C/W
Maximum Lead Temperature for Soldering Purposes, 1/16" from case for 10 seconds	T_L	300	°C

ON Semiconductor

http://onsemi.com

**200 mAMPS
60 VOLTS
$R_{DS(on)} = 1.2$ Ω**

N–Channel

D

G

S
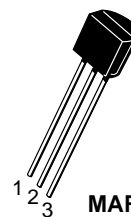
**TO–92
CASE 29
Style 22**

1
2
3

**MARKING DIAGRAM
& PIN ASSIGNMENT**

VN0300L
YWW

1
Source

3
Drain

2
Gate
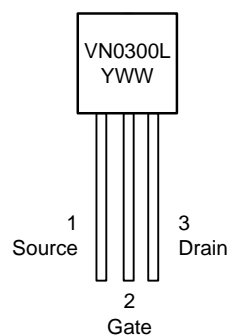
Y = Year
WW = Work Week

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°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
STATIC CHARACTERISTICS				
Drain–Source Breakdown Voltage (V_{DS} = 0, I_D = 10 μA)	$V_{(BR)DSS}$	30	–	V
Zero Gate Voltage Drain Current (V_{DS} = 48 Vdc, V_{GS} = 0) (V_{DS} = 48 Vdc, V_{GS} = 0, T_A = 125°C)	I_{DSS}	– –	10 500	μA
Gate–Body Leakage (V_{DS} = 0, V_{GS} = ±30 V)	I_{GSS}	–	±100	nA
Gate Threshold Voltage (V_{DS} = V_{GS}, I_D = 1.0 mA)	$V_{GS(th)}$	0.8	2.5	V
On–State Drain Current (Note 1.) (V_{DS} = V_{GS}, I_D = 1.0 mA)	$I_{D(on)}$	1.0	–	A
Drain–Source On Resistance (Note 1.) (V_{GS} = 5.0 V, I_D = 0.3 A) (V_{GS} = 10 V, I_D = 1.0 A)	$r_{DS(on)}$	– –	3.3 1.2	Ω
Forward Transconductance (Note 1.) (V_{DS} = 10 V, I_D = 0.5 A)	g_{fs}	200	–	mS
DYNAMIC CHARACTERISTICS				
Input Capacitance	C_{iss}	–	100	pF
Output Capacitance	C_{oss}	–	95	pF
Reverse Transfer Capacitance	C_{rss}	–	25	pF
SWITCHING CHARACTERISTICS				
Turn–On Time	t_{on}	–	30	ns
Turn–Off Time	t_{off}	–	30	ns

The Dynamic Characteristics are measured at (V_{DS} = 15 Vdc, V_{GS} = 0, f = 1.0 MHz).

The Switching Characteristics are measured at (V_{DD} = 25 Vdc, I_D = 1.0 A, R_L = 24 Ω, RG = 25 Ω).

1. Pulse Test; Pulse Width < 300 μs, Duty Cycle ≤ 2.0%.

VN0300L

PACKAGE DIMENSIONS

TO–92
CASE 29–11
ISSUE AL
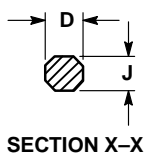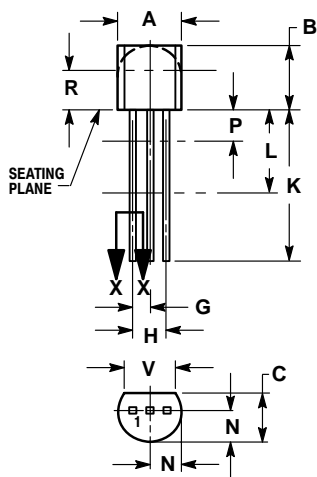
NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

SECTION X–X

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:
PIN 1. SOURCE
2. GATE
3. DRAIN

VN0300L

PUBLICATION ORDERING INFORMATION