



ON Semiconductor

http://onsemi.com

40 VOLTS, 5.0 AMPS  
NPN LOW  $V_{CE(sat)}$  TRANSISTOR  
EQUIVALENT  $R_{DS(on)}$  38 m $\Omega$

Features

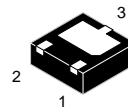
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MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ )

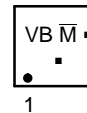
Rating	Symbol	Max	Unit
Collector-Emitter Voltage	$V_{CEO}$	40	Vdc
Collector-Base Voltage	$V_{CB}$		

BOTHERMAL CHARACTERISTICS



WDFN3  
CASE 506AU

MARKING DIAGRAM



VB = Specific Device Code

M = Date Code

■ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
NSS40501UW3T2G	WDFN3 (Pb-Free)	3000/ Tape & Reel
NSV40501UW3T2G	WDFN3 (Pb-Free)	3000/ Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

Characteristic	Symbol	Max	Unit
Total Device Dissipation, $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$ (Note 1)	875 7.0	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$ (Note 1)		
	$P_D$ (Note 2)	1.5 11.8	W mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$ (Note 2)	85	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Lead #3	$R_{\theta JL}$ (Note 2)	23	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	$T_J, T_{stg}$		

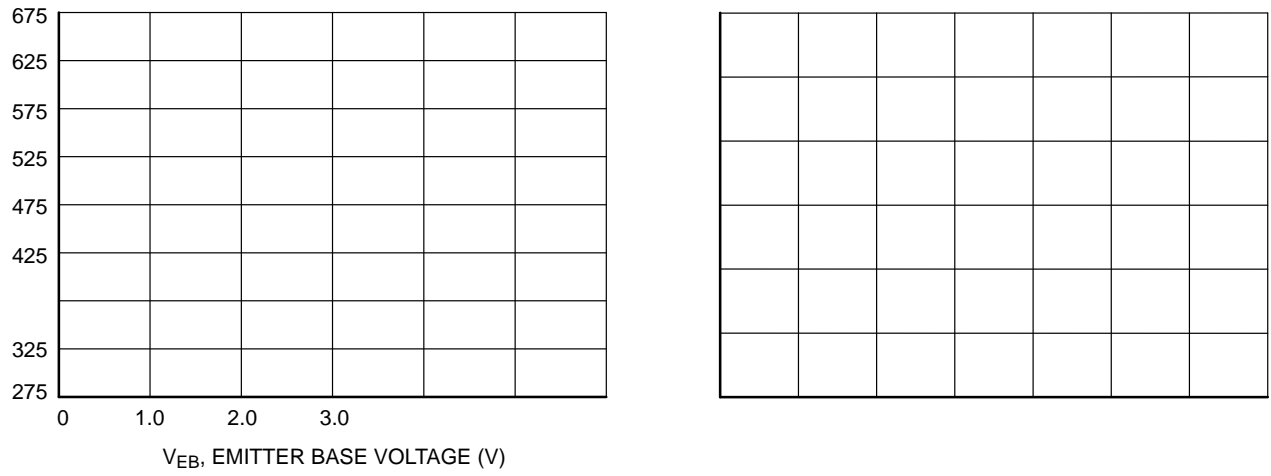
# NSS40501UW3, NSV40501UW3

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

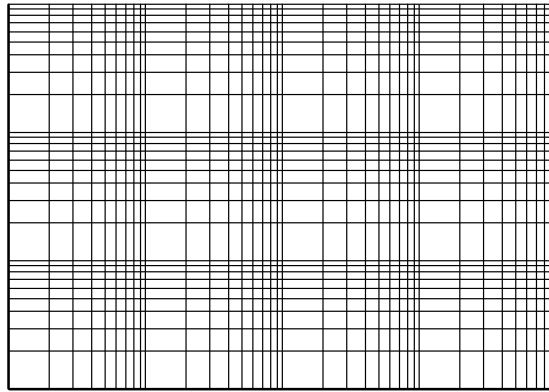
Characteristic	Symbol	Min	Typical	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Collector - Emitter Breakdown Voltage ( $I_C = 10\text{ mA}$ , $I_B = 0$ )	$V_{(BR)CEO}$	40	-	-	Vdc
Collector - Base Breakdown Voltage ( $I_C = 0.1\text{ mA}$ , $I_E = 0$ )	$V_{(BR)CBO}$	40	-	-	Vdc
Emitter - Base Breakdown Voltage ( $I_E = 0.1\text{ mA}$ , $I_C = 0$ )	$V_{(BR)EBO}$				

**NSS40501UW3, NSV40501UW3**

# NSS40501UW3, NSV40501UW3



**Figure 7. Input Capacitance**



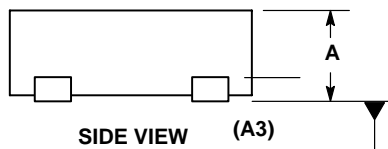
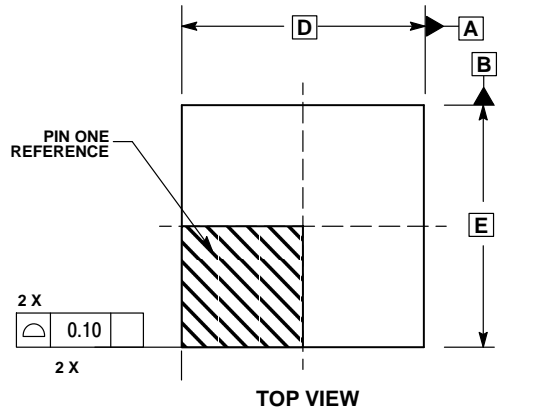
$V_{CE}$  ( $V_{dc}$ )



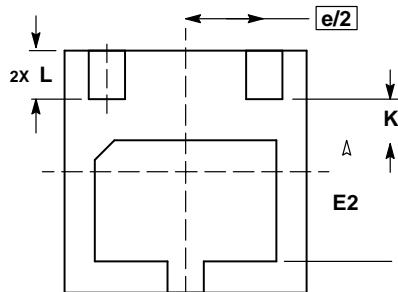
**WDFN3 2x2, 1.3P**  
**CASE 506AU**  
**ISSUE A**

DATE 18 AUG 2016

SCALE 4:1



D2



	MILLIMETERS			INCHES
	3X MIN	NOM	MAX	MIN
A1	0.70	0.75	0.80	0.028
A	0.00	0.20 REF	0.05	0.000
b	0.25	0.30	0.35	0.010
D	1.40	2.00 BSC	1.60	0.055
E	1.50	2.00 BSC	1.10	0.035
E2	0.90	1.00	1.10	0.035

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994 .
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.25 AND 0.30 MM FROM TERMINAL.
4. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

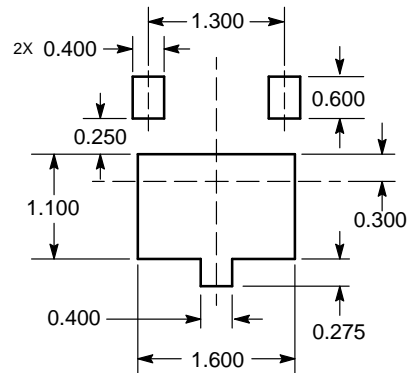
	NOM	MAX
	0.030	0.031
	0.008 REF	0.002
	0.012	0.014
	0.079 BSC	
	0.059	0.063
	0.079 BSC	
	0.039	0.043
e	1.30 BSC	0.051 BSC
K	0.35 REF	0.014 REF
L	0.35	0.40
	0.45	0.014
	0.016	0.018

**GENERIC MARKING DIAGRAM\***



XX = Specific Device Code  
M = Date Code

**SOLDERING FOOTPRINT\***



DIMENSIONS: MILLIMETERS

\*For additional information on our Pb-Free strategy and soldering details, please download the onsemi Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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