ON Semiconductor

http://onsemi.com

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

Features

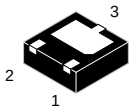
-
  –
- –

MAXIMUM RATINGS (T_A = 25°C)

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

THERMAL CHARACTERISTICS

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



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.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typical	Max	Unit
OFF CHARACTERISTICS					
Collector – Emitter Breakdown Voltage (I_C = 10 mAdc, I_B = 0)	$V_{(BR)CEO}$	40	–	–	Vdc
Collector – Base Breakdown Voltage (I_C = 0.1 mAdc, I_E = 0)	$V_{(BR)CBO}$	40	–	–	Vdc
Emitter – Base Breakdown Voltage (I_E = 0.1 mAdc, I_C = 0)	$V_{(BR)EBO}$				

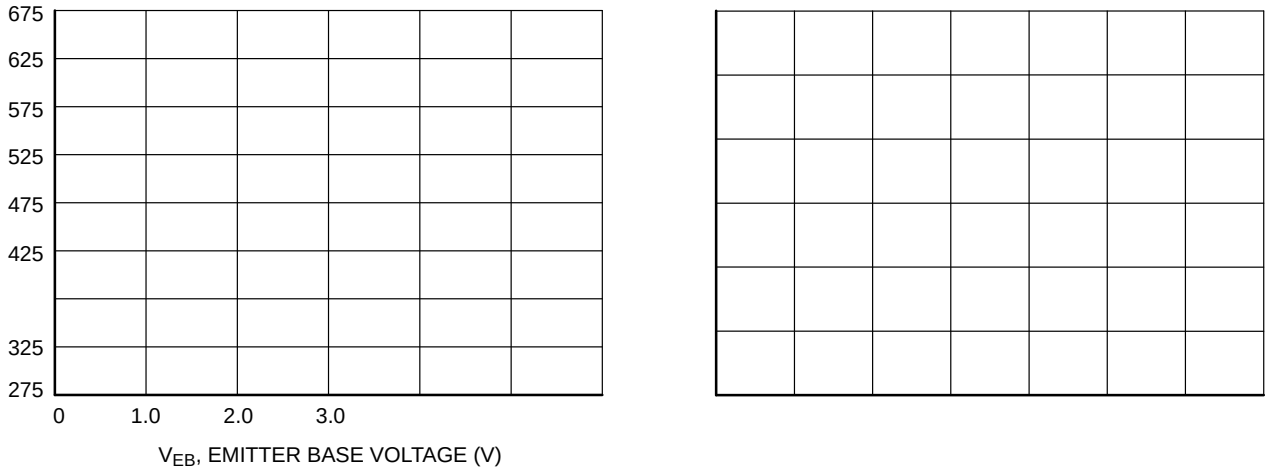
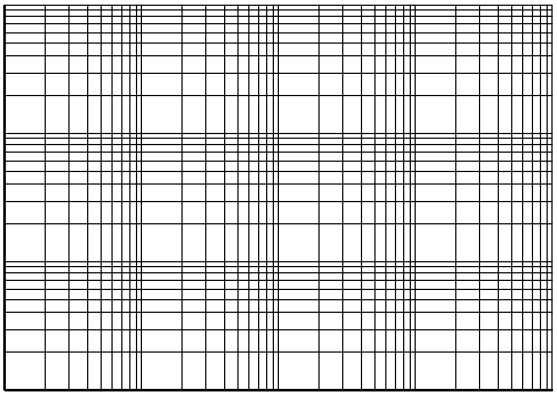
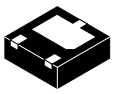


Figure 7. Input Capacitance

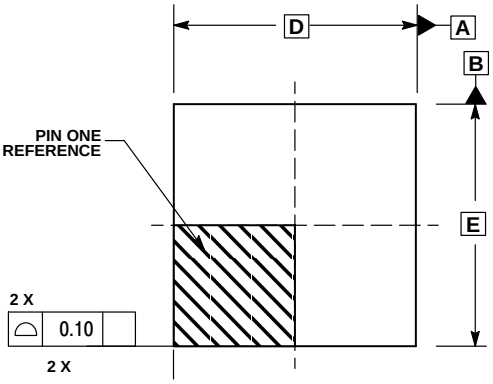




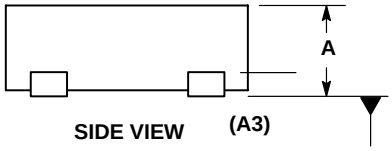
WDFN3 2x2, 1.3P
CASE 506AU
ISSUE A

DATE 18 AUG 2016

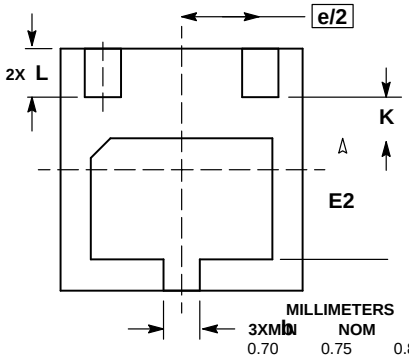
SCALE 4:1



TOP VIEW



SIDE VIEW



BOTTOM VIEW

	MILLIMETERS				INCHES	
	3XMIN	NOM	MAX	NOTE 3	MIN	NOM
A	0.70	0.75	0.80		0.028	0.030
A1	0.00		0.05		0.000	
A3		0.20 REF				0.008 REF
b	0.25	0.30	0.35		0.010	0.012
D		2.00 BSC				0.079 BSC
D2	1.40	1.50	1.60		0.055	0.059
E		2.00 BSC				0.079 BSC
E2	0.90	1.00	1.10		0.035	0.039
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

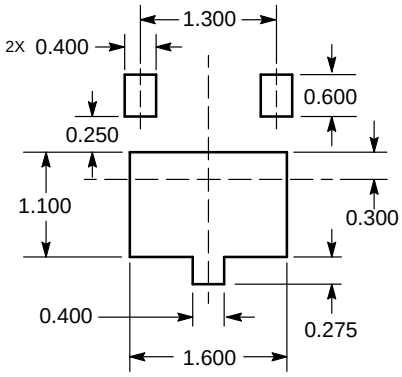
NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994 .
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.25 AND 0.30 MM FROM TERMINAL.
4. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

	MAX
0.030	0.031
	0.002
0.008 REF	
0.012	0.014
0.079 BSC	
0.059	0.063
0.079 BSC	
0.039	0.043
0.051 BSC	
0.014 REF	
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.