A B 3136 6 A

NCP3136 is a fully integrated synchronous buck converter for 3.3 V and 5 V step down applications. It can provide up to 6.5 A instantaneous current. NCP3136 supports high efficiency, fast transient response and provides power good indicator. The control scheme includes two operation modes: FCCM and automatic CCM/DCM. In automatic CCM/DCM mode, the controller can smoothly switch between CCM and DCM, where converter runs at reduced switching frequency with much higher efficiency. NCP3136 is available in 3 mm x 3 mm QFN16 pin package.

Features

High Efficiency in Both CCM and DCM Operation Frequency: 1.1 MHz Support MLCC Output Capacitor Small Footprint, 3 mm x 3 mm, 16 pin QFN Package 2.9 V to 5.5 V Wide Conversion Voltage Range Output Voltage Range from 0.6 V to 0.84 X V_{IN} Automatic Power Saving Mode Voltage Mode Control Support Pre bias Start up Functionality Output Discharge Operation Over Temperature Protection Built in Over Voltage, Under Voltage and Over Current Protection Power Good Indicator

This Device is Pb

MARKING DIAGRAM



= Pb-Free Package



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

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ABSOLUTE MAXIMUM RATINGS

		Value		
Parameter	Condition	Min	Max	Unit
Input Voltage Range	VIN, PS	-0.3	6.5	V
	VBST	-0.3	17	
	VBST (with respect to SW)	•		

ELECTRICAL CHARACTERISTICS ($V_{DD} = V_{IN} = 3.3 \text{ V}, T_A = T_J = -40 \text{ C to } +125 \text{ C}.$ Typical values are at $T_A = 25 \text{ C}, PGND = GND$ unless otherwise noted)

SYMBOL	Test Conditions	Min	Тур	Max	Unit				
LOGIC PINS:I/O VOLTAGE AND CURRENT									
PS _{THS}	Level 1 to Level 2		0.05		V				
	Level 2 to Level 3		1.3						
I									
	SYMBOL RRENT PS _{THS}	SYMBOL Test Conditions RRENT PS _{THS} Level 1 to Level 2 Level 2 to Level 3 Level 3	SYMBOL Test Conditions Min RRENT PS _{THS} Level 1 to Level 2 Level 2 to Level 3 I	SYMBOL Test Conditions Min Typ RRENT PS _{THS} Level 1 to Level 2 0.05 Level 2 to Level 3 1.3	SYMBOL Test Conditions Min Typ Max RRENT PS _{THS} Level 1 to Level 2 0.05 Level 2 to Level 3 1.3				

PROTECTIONS

Under Voltage Lockout (UVLO)

There is under-voltage lock out protection (UVLO) for VIN in NCP3136, which has a typical trip threshold voltage 2.8 V and trip hysteresis 130 mV for VIN. If UVLO is triggered, the device resets and waits for the voltage to rise up over the threshold voltage and restart the part. Please note this protection function DOES NOT trigger the fault counter to latch off the part.

QFN16 3x3, 0.5P CASE 485DA **ISSUE A**

DATE 22 SEP 2015



- NOTES:
 DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
 CONTROLLING DIMENSION: MILLIMETERS.
 DIMENSION & APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.15 AND 0.30 MM FROM THE TERMINAL TIP.
 COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.









SCALE 2:1

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