

General Description

IN1M101 provides a precise comparator to detect the rectified AC voltage, which could protect the SPS when AC voltage is low.

At the same time, IN1M101 also provides the delay time to noise immunity.

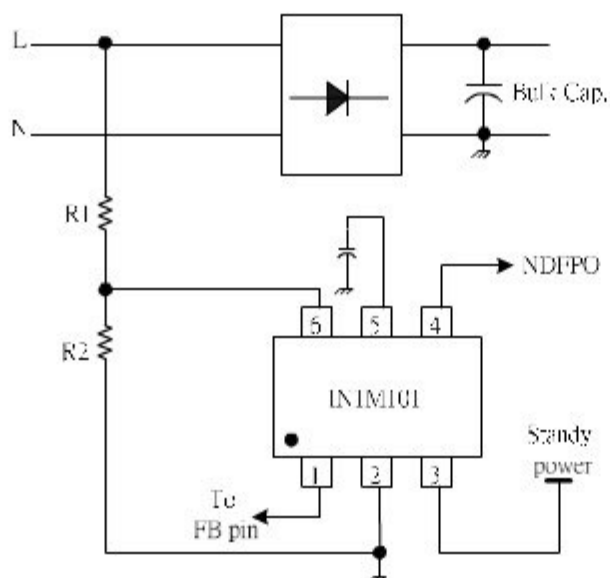
Application

- ◆ TV open frame SMPS
- ◆ Adapter DVD and CD(R)

Feature

- ◆ The Brown-out protection (BOP) setting by two resistor and auto restart.
- ◆ Wide operation voltage range.
- ◆ Two faults output
- ◆ Low standby current consumption
- ◆ High noise immunity
- ◆ RoHS compliant and Halogen free

Application Circuit



$$V_{Brown-out} = \frac{R1 + R2}{R2} * 1.18$$

Ordering Information

Part Number	Package	Packaging	Note
IN1M101-T6G	SOT-26	Tube/Carton	Green -30~85C

Note: Infineon lead-free products contain molding compounds/die attach materials and 100% matte tin plate termination finish; which are fully compliant with RoHS. Infineon lead-free products meet or exceed the lead-free requirements of IPC/JEDEC J-STD-020C for MSL classification at lead-free peak reflow temperature. Infineon defines "Green" to mean lead-free (RoHS compliant) and halogen free (Br or Cl does not exceed 900ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500ppm by weight).



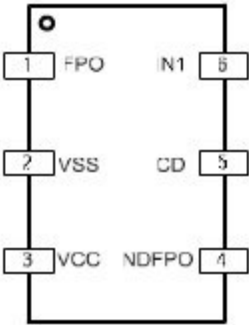
IN1M101

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IN1M101

Pin connection (Top View)



Pin Assignments and Package Type

Designation	I/O	Description
FPO	O	Fault protect pin
VSS	I	Ground
VCC	I	Power supply
NDFPO	O	Non-Delay Fault protect pin
CD	I	Delay time setting capacitor
IN1	I	Comparator passive terminal input1

Absolute Maximum Ratings

Parameter Symbol		Symbol	Limit Values		Unit	Remark
			Min.	Max		
Supply Voltage Vcc		V _{CC}	-0.3	32	V	
Input Voltage Range		V _{IN1} , V _{CD}	-0.3	7	V	
Output Voltage Range		V _{FPO} V _{FPOB}	-0.3	7	V	
Junction Temperature		T _J	-40	150	°C	
Operation Ambient Temperature		T _{opr}	-30	85	°C	
Storage Temperature		T _{stg}	-55	150	°C	
Package Thermal Resistance	SOT-26	θ _{JA}	-	250	°C/W	
Power Dissipation @T _A =85°C	SOT-26	P _D	-	0.25	W	
Lead temperature (Soldering, 10 sec)			-	260	°C	
ESD Voltage Protection	HBM	V _{ESD-HBM}	-	3.0	KV	
	MM	V _{ESD-MM}	-	300	V	
MSL level			-	3	-	

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Stress beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

DC Electrical Characteristics ($V_{CC}=12V$, $T_a=25$)

Supply Voltage (V_{CC} Pin):



Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Supply Voltage	V_{CC}	5	12	28	V	
Supply Current	I_{CC}		25	40	μA	-30~85°C
Reset Threshold Voltage	V_{RSET}		3		V	

Brown-out Voltage function (IN1 Pin) :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Brown Voltage Threshold*1	V_{BVT}	1.13	1.18	1.23	V	NDFPO from Floating → Low
		1.12		1.24	V	-30~85°C
		1.23	1.29	1.35	V	NDFPO from Low → Floating
		1.20		1.38	V	-30~85°C

Constant current output (CD Pin) :

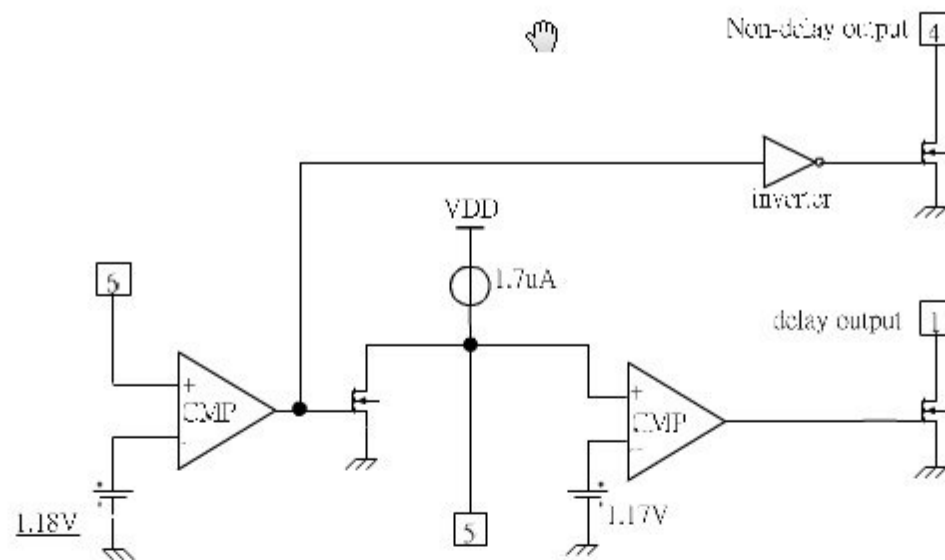
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Constant current	I_{REF}	1.5 [^]	1.7	2.0	μA	$V_{CD} < 3V$
		1.4		2.1	μA	-30~85°C
Protect Threshold Voltage	V_{TH}	0.98	1.05	1.12	V	FPO from Low → Floating
		0.95		1.15	V	-30~85°C
		1.10	1.17	1.24	V	FPO from Floating → Low
		1.09		1.26	V	-30~85°C

Open Drain Output (FPO Pin) :

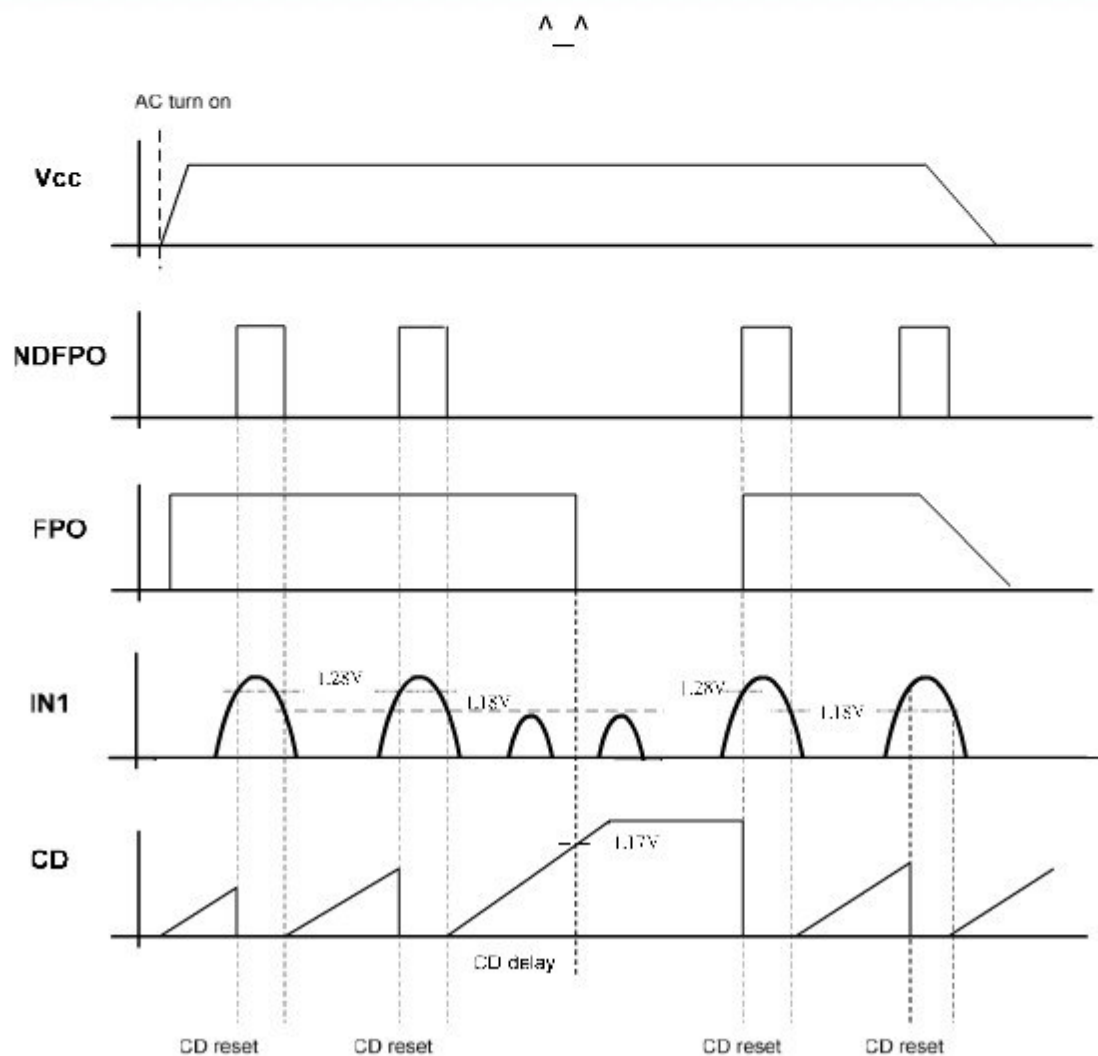
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Leakage Current	I_{LK1}			5	μA	$V_{FPO}=5V$
Low Level Output Voltage	V_{OL1}			0.3	V	$I_{SINK}=20mA$

Non Delay Open Drain Output (NDFPO Pin) :

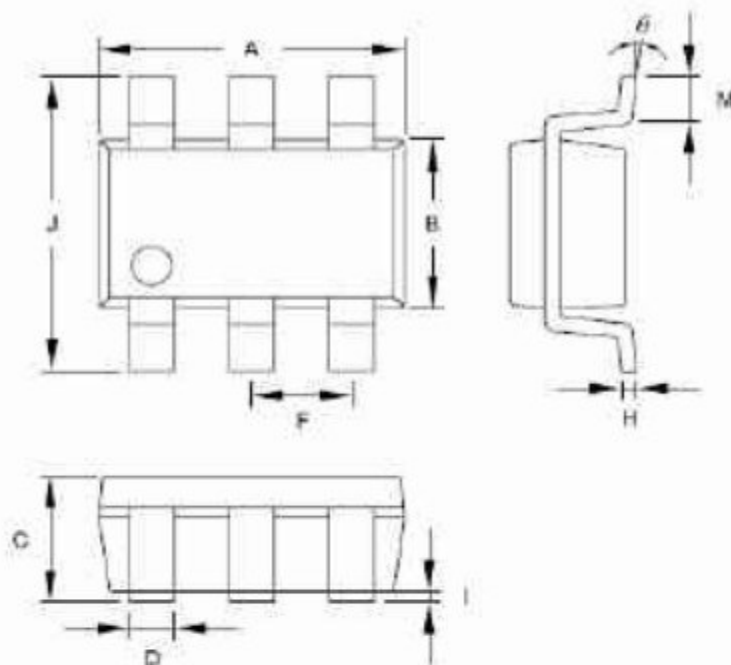
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Leakage Current	I_{LK2}			5	μA	$V_{NDFPO}=5V$
Low Level Output Voltage	V_{OL2}			0.3	V	$I_{SINK}=20mA$



Timing Chart

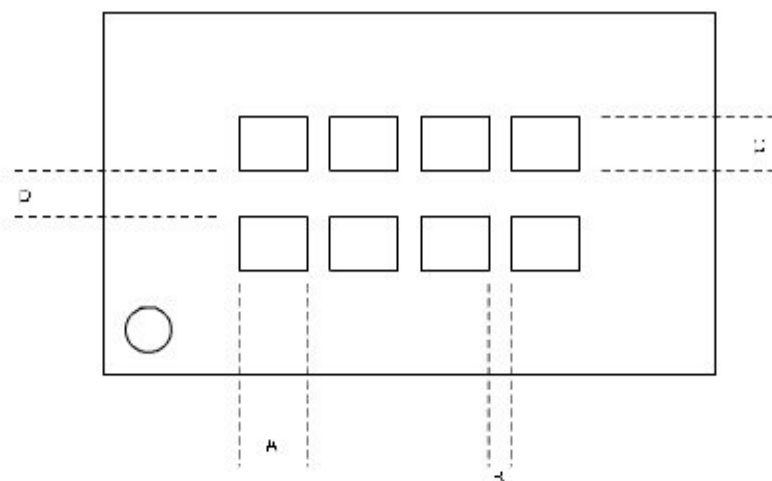


SOT-26



Symbol	Dimension in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	2.692	3.099	0.106	0.122
B	1.397	1.903	0.055	0.071
C	-----	1.450	-----	0.058
D	0.300	0.650	0.012	0.022
F	0.838	1.041	0.033	0.041
H	0.080	0.254	0.003	0.010
I	0.050	0.150	0.002	0.008
J	2.600	3.000	0.102	0.118
M	0.300	0.600	0.012	0.024
θ	0	10°	0	10°

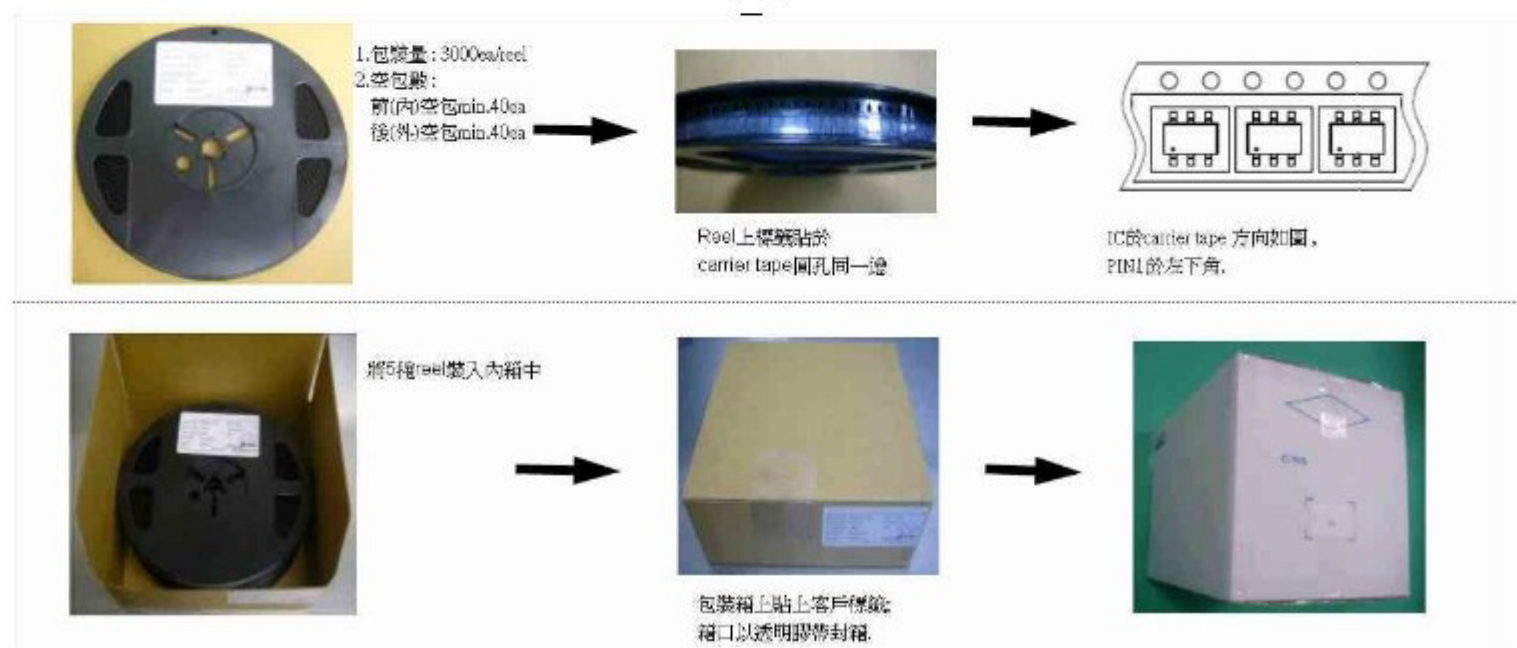
Body Marking



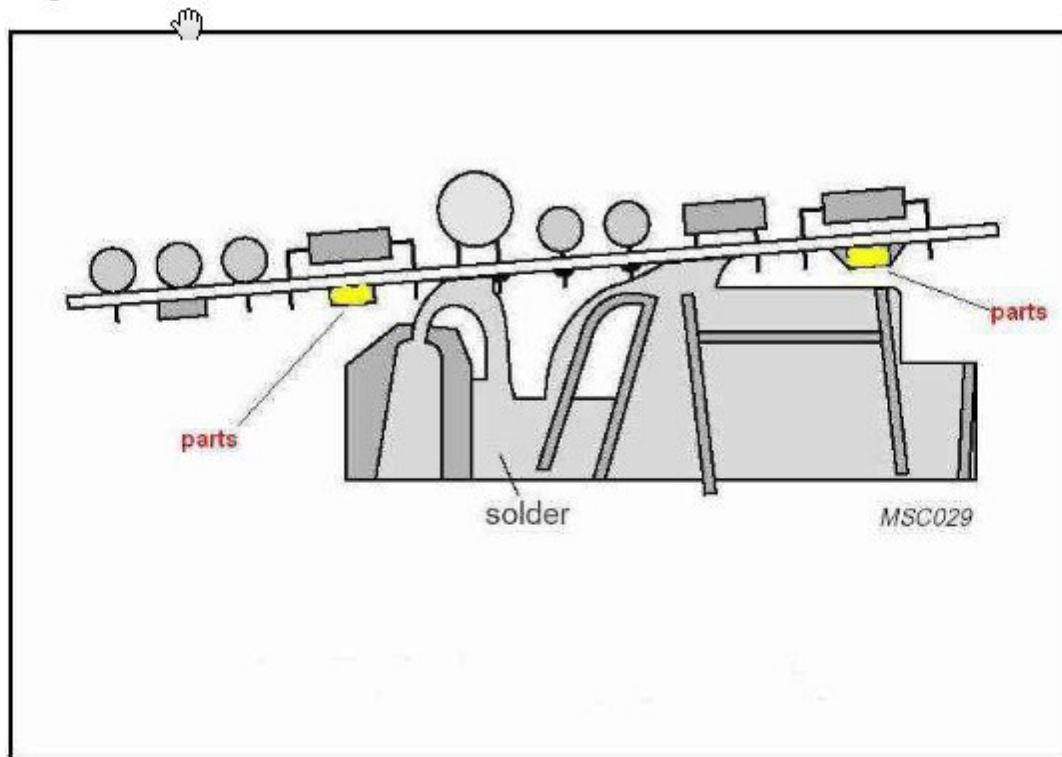
Package Type	A	B	C	D
SOT-26	0.3 mm	0.1 mm	0.35 mm	0.2 mm

Line #	Mark Number	Contents
Line 1 :	1 thru 4	Name : M101
Line 2 :	1 thru 4	Date code : 1020

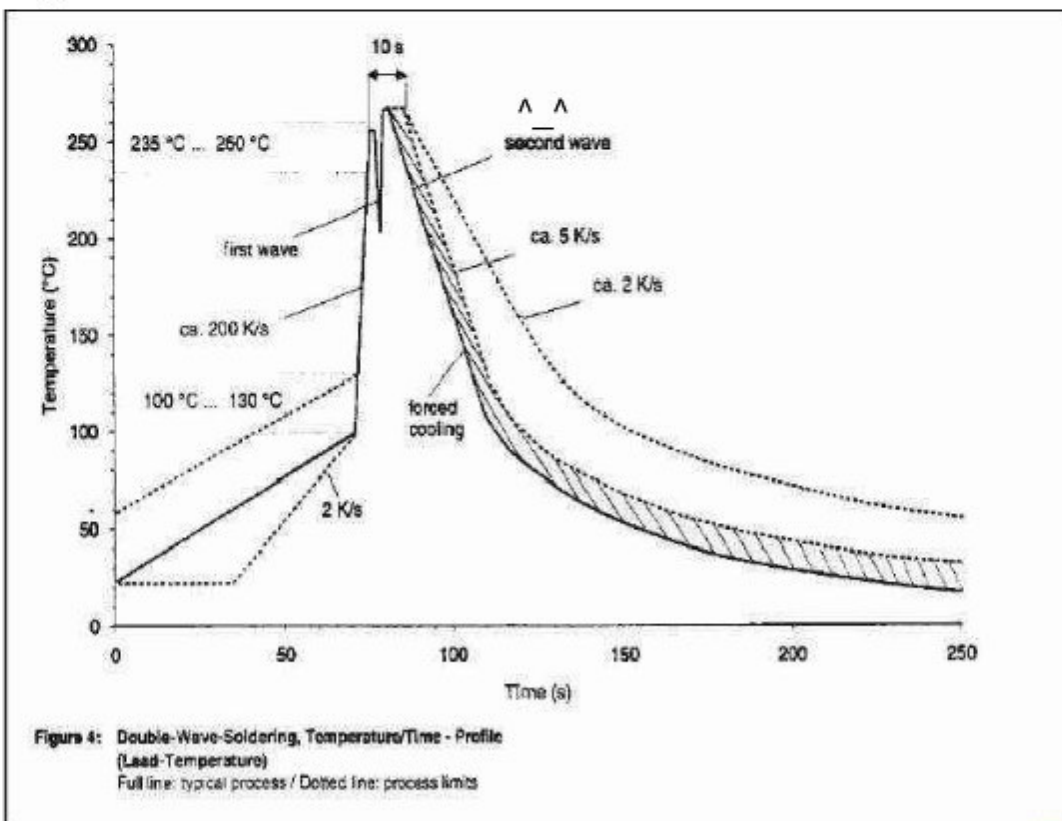
Shipping Packing



Wave Soldering Process



Wave Soldering Profile



Revision History

REVISION	DESCRIPTION	PAGE	DATE
1.0	Final SPEC	10	2010/12/08
1.1	Update logo information and time chart	-	2011/03/30

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Product data sheet

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10 of 10

