

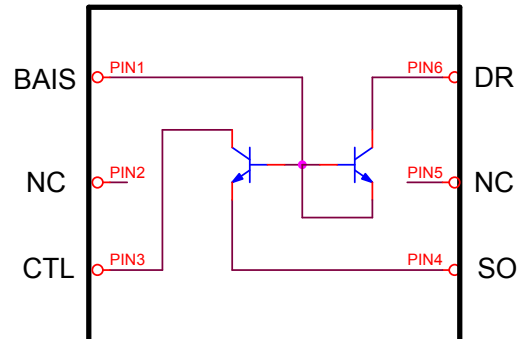
GENERAL DESCRIPTION

The N3869M is a current detector specifically designed for the synchronous rectification applications of the Flyback PWM mode switching power supply.

The N3869M composes of two symmetrical bipolar transistors by a special connection (patented). It detects the current variation of power MOSFET by voltage form and controls the output to be proportional to the detective voltage between source and drain. The N3869M provides a BAIS pin to adjust the sink current capability for generating a slope control at the CTL pin.

The N3869M in the Flyback synchronous rectification applications, it should be used with the synchronous rectification controller N3868V to control the synchronous rectification MOSFET off earlier, to avoid happening a large reverse current via the synchronous rectification MOSFET to damage the device.

BLOCK DIAGRAM



APPLICATION

- Flyback mode power supply

CONFIDENTIAL

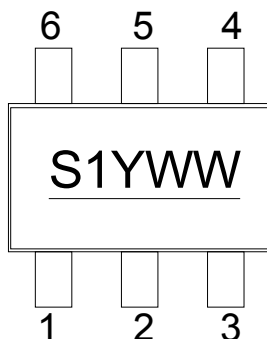
ABSOLUTE MAXIMUM RATING

PARAMETERS	SYMBOL	LIMITS	UNITS
Vcc to GND	VCC	-0.3 to 30	V
Vcc to GND	VCC(surge)	45	Vp-p
DR to Other Pin		160	V
Power Dissipation at Ta = 25°C	PD	200	mW
Operating Junction Temperature Range	Tj	-40 to +150	°C
Storage Temperature Range	TSTG	-65 to +150	°C

ELECTRICAL CHARACTERISTICS ($T_c = 25\text{ }^\circ\text{C}$, Unless Otherwise Noted)

PARAMETERS	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_c = 100\text{ }\mu\text{A}$, $I_E = 0$	180			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_c = 1\text{ mA}$, $I_B = 0$	160			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\text{ }\mu\text{A}$, $I_c = 0$	6			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 120\text{ V}$, $I_E = 0$			50	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 4\text{ V}$, $I_c = 0$			50	nA
DC Current Gain	$H_{FE(1)}$	$V_{CE} = 5\text{ V}$, $I_c = 1\text{ mA}$	80			
	$H_{FE(2)}$	$V_{CE} = 5\text{ V}$, $I_c = 10\text{ mA}$	80		250	
	$H_{FE(3)}$	$V_{CE} = 5\text{ V}$, $I_c = 50\text{ mA}$	30			
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_c = 10\text{ mA}$, $I_B = 1\text{ mA}$			0.15	V
	$V_{CE(sat)2}$	$I_c = 50\text{ mA}$, $I_B = 5\text{ mA}$			0.2	V
Base- Emitter Saturation Voltage	$V_{BE(sat)1}$	$I_c = 10\text{ mA}$, $I_B = 1\text{ mA}$			1	V
	$V_{BE(sat)2}$	$I_c = 50\text{ mA}$, $I_B = 5\text{ mA}$			1	V
Transition Frequency	f_T	$V_{CE} = 10\text{ V}$, $I_c = 10\text{ mA}$, $f = 100\text{ MHz}$	100		300	MHz
Collector Output Capacitive	C_{ob}	$V_{CB} = 10\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$			6	pF
Noise Figure	NF	$V_{CE} = 5\text{ V}$, $I_c = 200\text{ }\mu\text{A}$, $f = 1\text{ KHz}$, $R_g = 1\text{ K}\Omega$			8	dB

MARKING



Marking Description:

S1 – N3869
 Y – Year (2008-8,2009-9,2010-A...)
 WW - Week

SOT-26 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	1.0	1.1	1.3	G	0.37		
A1	0.0		0.1	H	2.6	2.8	3.0
B	0.35	0.4	0.5				
C	0.10	0.15	0.25				
D	2.7	2.9	3.1				
E	1.6	1.8	2.0				
F		1.9					

