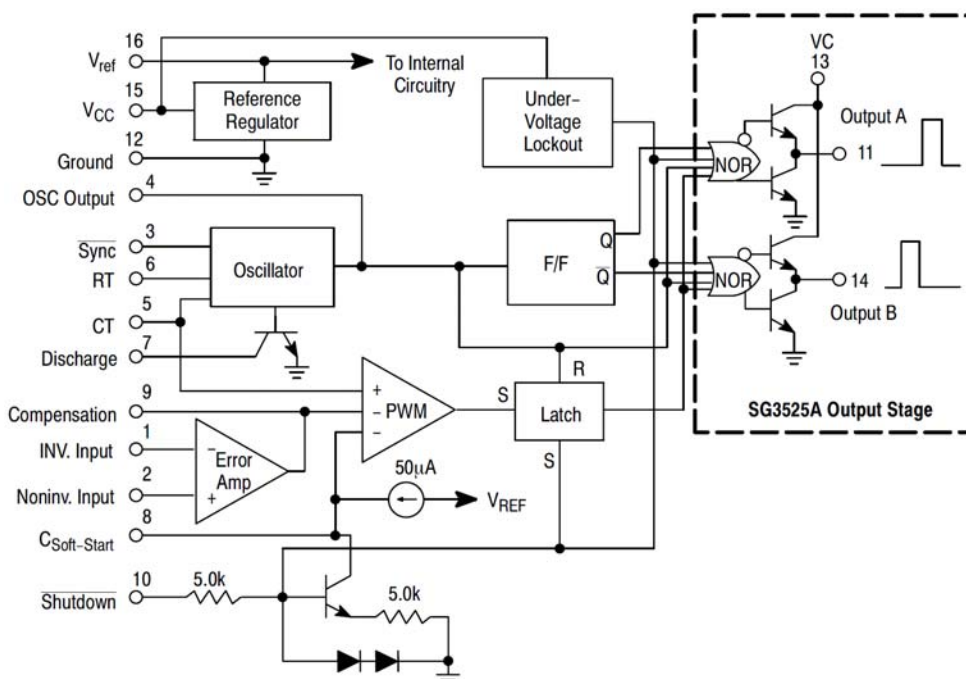## description

The accuracy of the chip +5.1V reference voltage is 1%. Because the reference voltage is within the input common-mode range of the error amplifier, there is no need for an external resistor. 3525 can work in master-slave mode and can also be synchronized with external clock. The dead time can be adjusted by the resistance between CT and discharge terminal. Other functional circuits inside the chip also include: soft start circuit, turn-off circuit and under-voltage circuit.
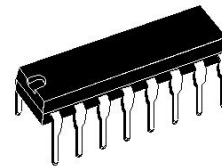
3525 The output stage of the control chip is a high-power totem-pole output, and its source current and sink current exceed 150mA, which gives a logic level of "NOR" and a low level when it is in the "off" state. trait

- The working voltage range is 8~35V;
- 5.1V reference voltage with accuracy of 1%;
- The oscillation frequency range is 100Hz~500KHz;
- The oscillator synchronization signal input end;
- Dead time is adjustable;
- Built-in soft start circuit;
- Step-by-step pulse shutdown;
- Input undervoltage locking with hysteresis voltage;
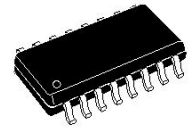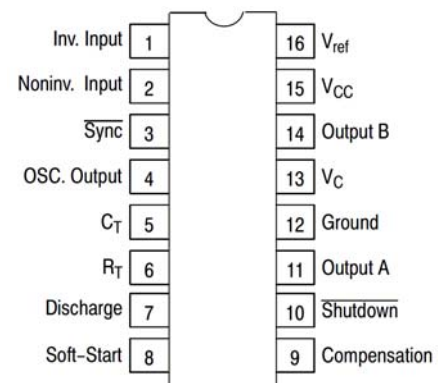- PWM locking function, prohibiting multi-pulse;

Package

DIP16   **SOP16**

Inv. Input	1	16	V_{ref}
Noninv. Input	2	15	V_{CC}
Sync	3	14	Output B
OSC. Output	4	13	V_C
C_T	5	12	Ground
R_T	6	11	Output A
Discharge	7	10	Shutdown
Soft-Start	8	9	Compensation

Internal block diagram

UMW® SG3525

Limit operating parameters

symbol	parameter	value	unit
Vi	Power supply voltage	40	V
VC	Collector supply voltage	40	V
IOSC	Oscillator charging current	5	mA
I$_o$	Output source current,	400	mA
IR	Reference output current	50	mA
Ptot	Power consumption Tamb= 70°C	1000	mW
Top	Working temperature	0 to 70	℃
Tj	Junction temperature range	− 55 to 150	℃
Tstg	Storage temperature range	− 65 to 150	℃

## Electrical parameters (Vcc=20V)

parameter	symbol	condition	minimum value	typical value	maximum	unit
Reference source						
Reference output voltage	VREF	TJ = 25℃	5.0	5.1	5.2	V
Line rule	Δ VREF	VCC = 8 to 35V	–	9	20	mV
Load regulation	Δ VREF	IREF = 0 to 20mA	–	20	50	mV
Short circuit output current	ISC	VREF = 0, TJ = 25℃	–	80	100	mA
Total output change	Δ VREF	Line, load and temperature	4.95	–	5.25	V
temperature stability	STT		–	20	50	mV
long term stability	ST	TJ = 125℃, 1 KHRS	–	20	50	mV
Oscillating part						
Initial accuracy	ACCUR	TJ = 25℃	–	3	6	%
Frequency varies with voltage	Δ f/Δ VCC	VCC = 8 to 35V	–	0.8	2	%
highest frequency	f(MAX)	RT = 2KΩ, CT = 470pF	400	430	–	KHz
Lowest frequency	f(MIN)	RT = 200KΩ, CT = 0.1uF	–	60	120	Hz
Clock amplitude	V(CLK)		3	4	–	V
Clock width	tW(CLK)	TJ = 25℃	0.3	0.6	1	us
Synchronization threshold	VTH(SYNC)		1.2	2	2.8	V
Synchronous input current	II(SYNC)	Sync = 3.5V	–	1.3	2.5	mA
Error amplifier section (VCM = 5.1V)						
Input offset voltage	VIO		–	1.5	10	mV
Input bias current	I BIAS		–	1	10	μA
Input offset current	I IO		–	0.1	1	μA
Open loop voltage gain	GVO	RL ≥ 10MΩ	60	80	–	dB
common mode rejection ratio	CMRR	VCM = 1.5 to 5.2V	60	90	–	dB
Power supply rejectionratio	PSRR	VCC = 8 to 3.5V	50	60	–	dB

| parameter	symbol	condition	minimum value	typical value	maximum	unit
PWM comparator part						
Minimum duty cycle	D(MIN)		-	-	0	%
Maximum duty cycle	D(MAX)		45	49	–	%
Input threshold voltage	VTH1	Zero duty cycle	0.7	0.9	–	V
Input threshold voltage	VTH2	Maximum duty cycle	–	3.2	3.6	V
Soft start part						
Soft start current	I SOFT	VSD = 0V, VSS = 0V	25	51	80	µA
Soft start low voltage	VSL	VSD = 25V	–	0.3	0.7	V
Turn off threshold voltage	V TH(SD)		0.6	0.8	1	V
Turn off the input current	I N(SD)	VSD = 2.5V	–	0.3	1	mA
Output part						
Low output voltage I	VOLI	I SINK = 20mA	–	0.1	0.4	V
Low output voltage II	VOL II	I SINK = 100mA	–	0.05	2	V
High output voltage I	VOHI	I SOURCE = 20mA	18	19	–	V
High output voltage II	VOHII	I SOURCE = 100mA	17	18	–	V
under voltage lock out	VUV	V8 and V9 = High	6	7	8	V
Collector leakage current	I LKG	VCC = 35V	–	80	200	µA
risetime	t R	CL = 1uF, TJ = 25	–	80	600	ns
Descending time	t F	CL = 1uF, TJ = 25	–	70	300	ns
Standby current						
supply current	I CC	VCC = 35V	–	12	20	mA

Test line
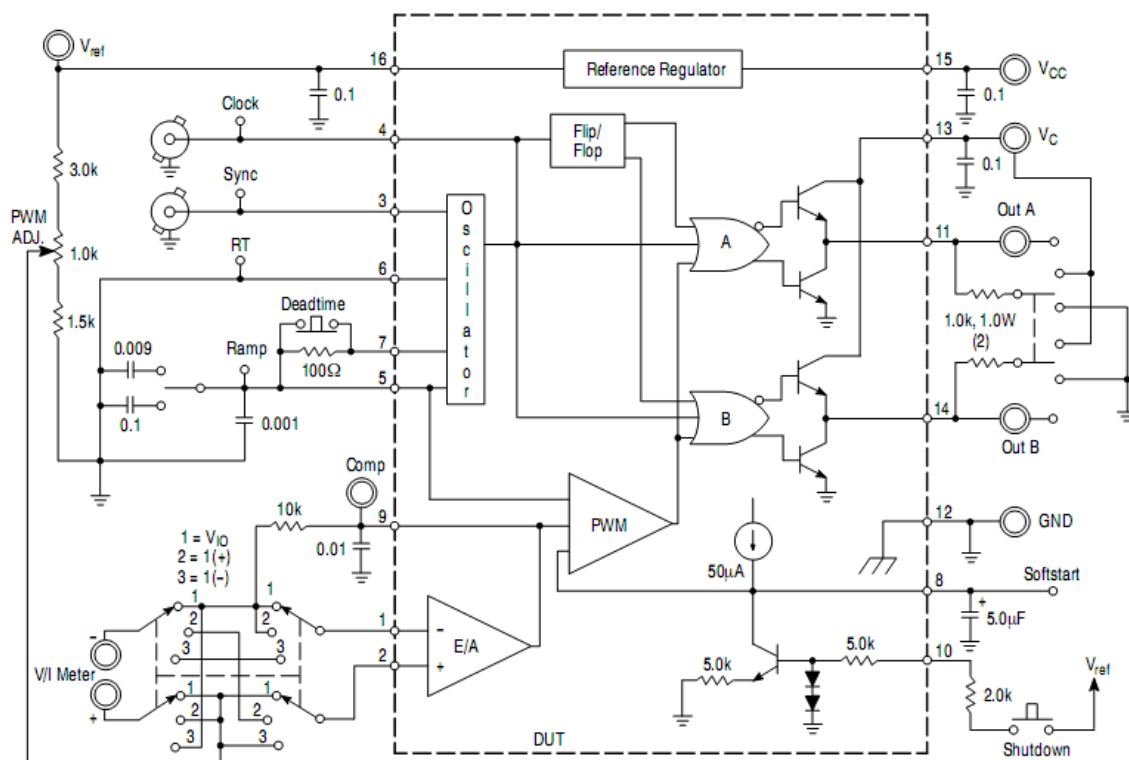
DIP16
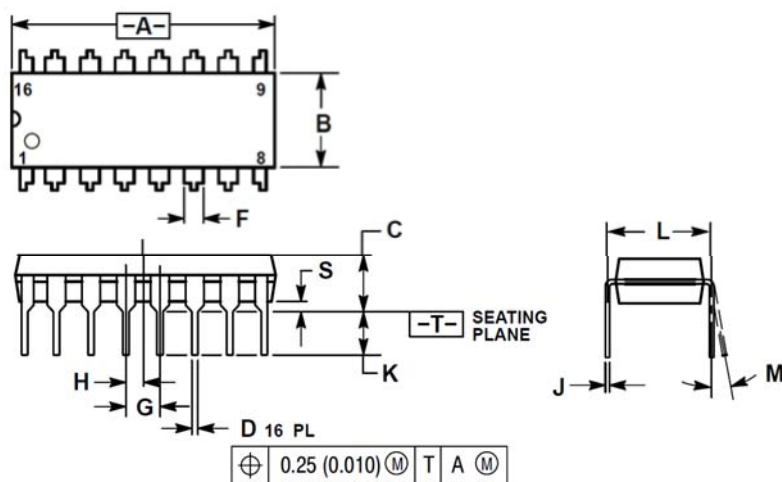
DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.740	0.770	18.80	19.55
B	0.250	0.270	6.35	6.85
C	0.145	0.175	3.69	4.44
D	0.015	0.021	0.39	0.53
F	0.040	0.70	1.02	1.77
G	0.100 BSC		2.54 BSC	
H	0.050 BSC		1.27 BSC	
J	0.008	0.015	0.21	0.38
K	0.110	0.130	2.80	3.30
L	0.295	0.305	7.50	7.74
M	0 °	10 °	0 °	10 °
S	0.020	0.040	0.51	1.01

SOP16
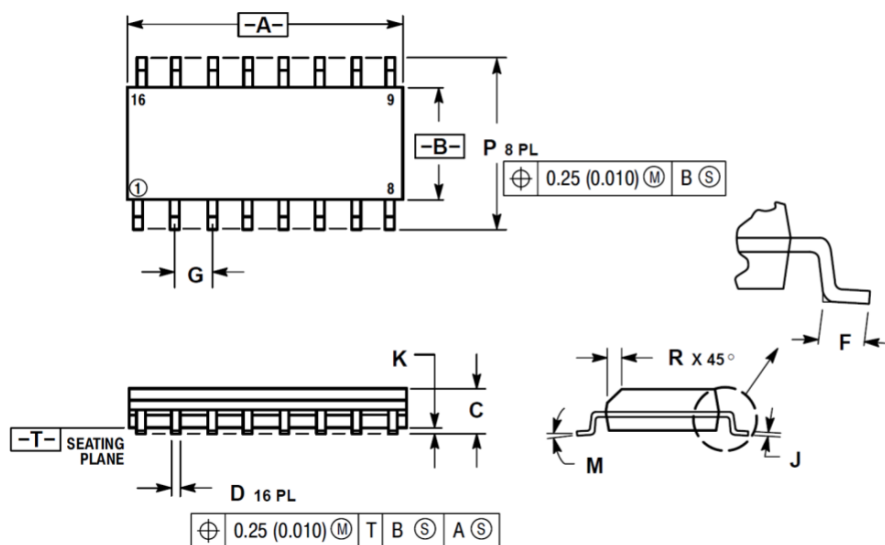
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.80	10.00	0.386	0.393
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC		0.050 BSC	
J	0.19	0.25	0.008	0.009
K	0.10	0.25	0.004	0.009
M	0 °	7 °	0 °	7 °
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

Marking

```
SG3525
UMW xxxx
○
```
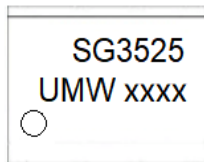
Ordering information

Order code	Package	Baseqty	Deliverymode
UMW SG3525AP	SOP-16	2500	Tape and reel
UMW SG3525AN	DIP -16	2500	Tape and reel

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Switching Controllers *category:*

Click to view products by Youtai *manufacturer:*

Other Similar products are found below :

NCP1218AD65R2G NCP1244BD065R2G NCP6153MNTWG NCP81101BMNTXG NCP81205MNTXG SJE6600 SG3845DM NCP4204MNTXG NCP6132AMNR2G NCP81102MNTXG NCP81206MNTXG MAX1653ESET NCP1240FD065R2G NCP1361BABAYSNT1G NCP1230P100G NX2124CSTR NCP1366BABAYDR2G NCP81174NMNTXG NCP4308DMTTWG NCP4308AMTTWG NCP1366AABAYDR2G NCP1251FSN65T1G NCP1246BLD065R2G NTE7233 ISL69122IRAZ MB39A136PFT-G-BND-ERE1 NCP1256BSN100T1G LV5768V-A-TLM-E NCP1365BABCYDR2G NCP1365AABCYDR2G NCP1246ALD065R2G AZ494AP-E1 CR1510-10 NCP4205MNTXG XC9221C093MR-G XRP6141ELTR-F RY8017 LP6260SQVF LP6298QVF ISL6121LIB ISL6225CA ISL6244HRZ ISL6268CAZ ISL6315IRZ ISL6420AIAZ-TK ISL6420AIRZ ISL6420IAZ ISL6421ERZ ISL6440IA ISL6441IRZ-TK