

Descriptions

The DW8508 is CC/CV(Constant current & constant current) IC for stable LEDs driving in a secondary side . DW8508 built in protection circuit same as LED open, Short

It suitable for applications with operating voltage from 8V to 30V.

The DW8508 is offered in 8 SOIC

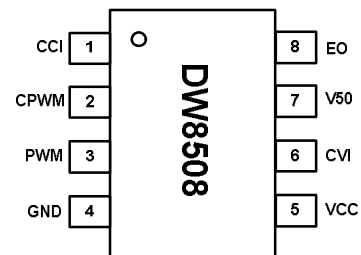
Ordering Information

Device	Marking	Package
DW8508	DW8508	8 SOIC

Features

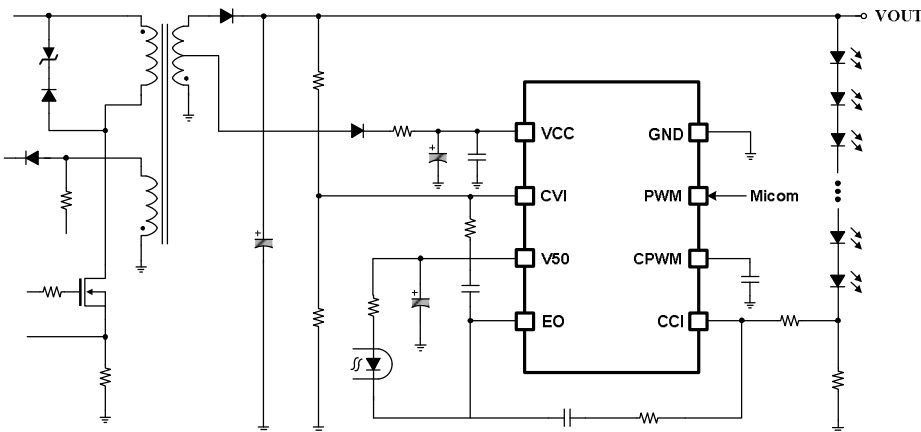
- Constant current & Constant voltage Driving
- Wide range operating voltage (8V~30V)
- Built in 5V Regulator
- PWM/Analog Dimming Control
- Thermal Derating Function
- Built in Protection circuit (LED Open/Short)
- Low feedback voltage (0.3V)

Package Information

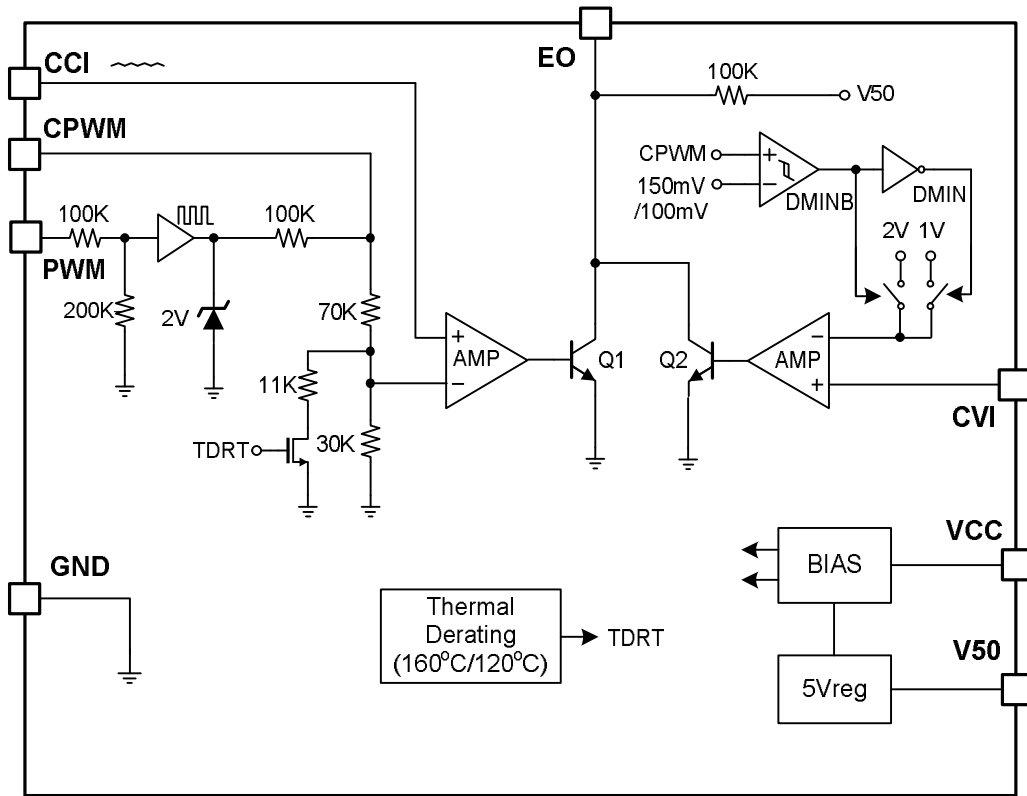


Package	Size
8 SOIC	4.9 x 6.0 x 1.4 (mm)

Typical Application Circuit



Block Diagram



Pin Description

No	NAME	I/O	DESCRIPTION
1	CCI	I	Constant Current Control Input
2	CPWM	I	PWM Dimming Capacitor
3	PWM	I	PWM Input Voltage
4	GND	-	Ground
5	VCC	I	Power Supply Input Voltage
6	CVI	I	Constant Voltage Control Input
7	V50	O	5.0V Reference Output
8	EO	O	Error Amplifier Output

Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
VCC	Power Supply Input Voltage	36	V
VIN	Input Voltage	-0.3 ~ 7	V
V50	5.0V Reference Output Voltage	7	V
VEO	Error Amplifier Output Voltage	7	V
Topr	Operating Free-air Temperature Range	-40 ~ +125	°C
Tj	Maximum Junction Temperature Range	150	°C

Recommend Operation Conditions

CHARACTERISTICS	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	8	15	30	V

Electrical Characteristics

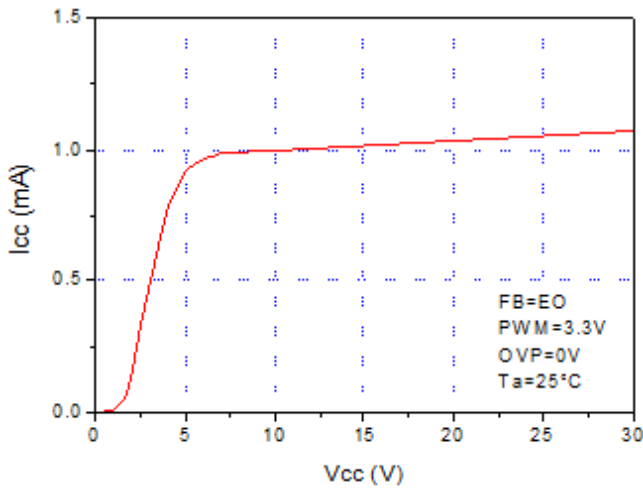
* Vcc=15V, Ta=25°C, unless otherwise specified.

Symbol	Parameter	Min.	Typ.	Max.	Unit
Vcc	Power Supply Input Voltage Range	8	15	30	V
Icc	VCC Operating Current(Veo=High)	0.5	1	1.5	mA
Iq	Quiescent Current	0.5	1	1.5	mA
V50	V50 Reference Output Voltage (Iout=2mA)	4.5	5	5.5	V
I50	V50 Maximum Current (V50=4V)	-15	-10	-5	mA
Isc	V50 Short Current (V50=0V)	-15	-8	-3	mA
VHpwm	PWM High Input Level	2	-	-	V
VLpwm	PWM Low Input Level	-	-	0.8	V
fpwm	PWM Dimming Frequency Range	100	-	1000	Hz
Dpwm	PWM Duty Range	10	-	100	%
Vdmin1	Dmin Threshold Voltage	100	150	200	mV
Vdmin2		70	100	130	mV
Ipwm	PWM Input Bias Current	6	12	18	nA
Rcpwm	PWM Input Resistance	70	100	130	Kohm
Vcci	CCI Maximum Input Voltage	294	300	306	mV
Icci	CCI Input Bias Current	-500	-100	500	nA
Veoh	Erramp Output High Voltage (Isource=10uA)	4.5	-	-	V
Veol	Erramp Output Low Voltage (Isink=3mA)	-	0.3	0.6	V
Isink	Erramp Output Sink Current (Veo=1V)	2	5	15	mA
Vcvi	CV Reference Voltage	1.8	2	2.2	V
Icvi	CV Input Bias Current	-500	-100	500	nA
TDRT	Thermal Derating	-	160	-	°C
Thys	TDRT Hysteresis	-	40	-	°C

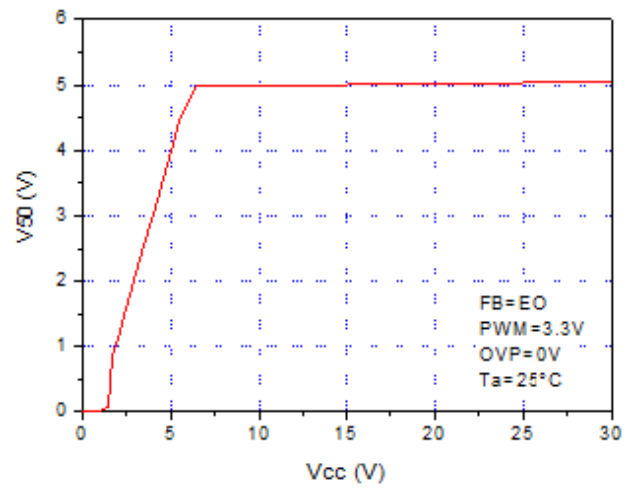
Electrical Characteristics Curves

Vcc = 15V, Ta = -35°C~+85°C, unless otherwise specified. Typical values are at Ta=+25°C

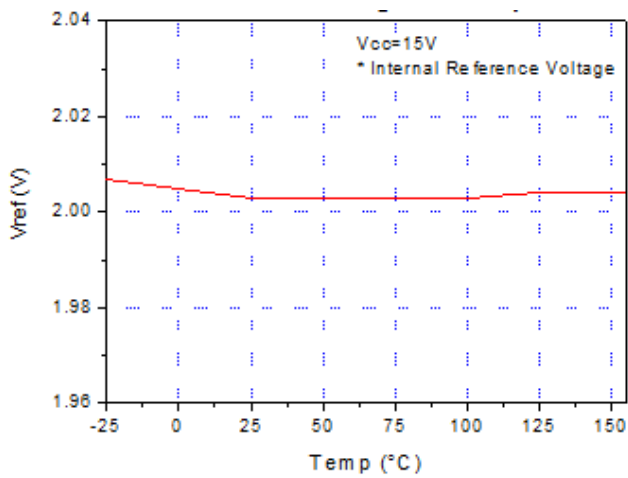
VCC Operating Current



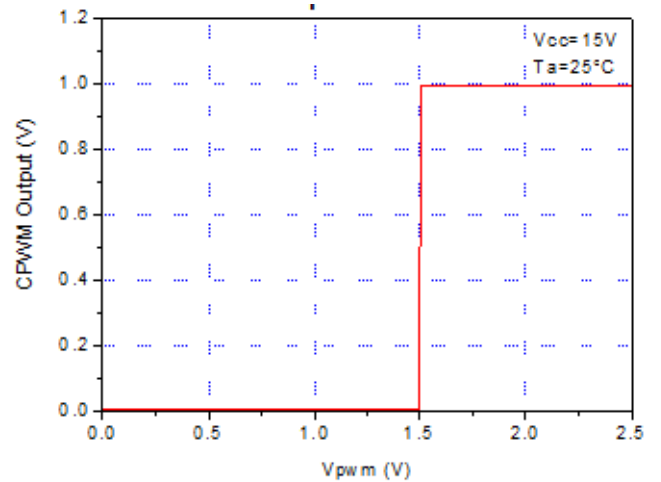
V50 Reference Voltage



Reference Voltage vs. Temp



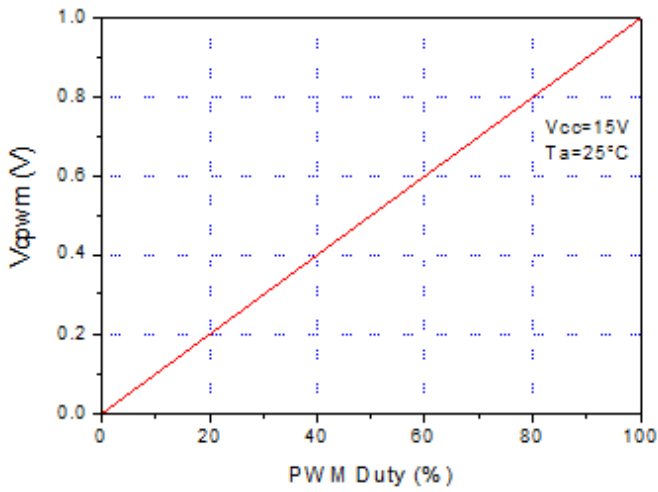
PWM Input Threshold



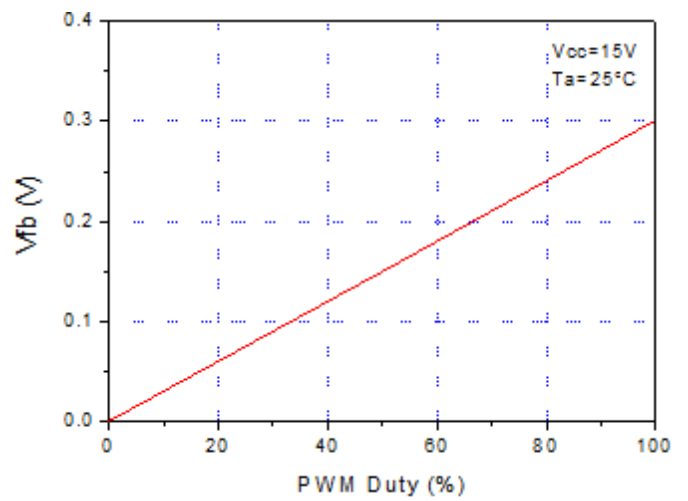
Electrical Characteristics Curves

$V_{cc} = 15V$, $T_a = -35^{\circ}C \sim +85^{\circ}C$, unless otherwise specified. Typical values are at $T_a = +25^{\circ}C$

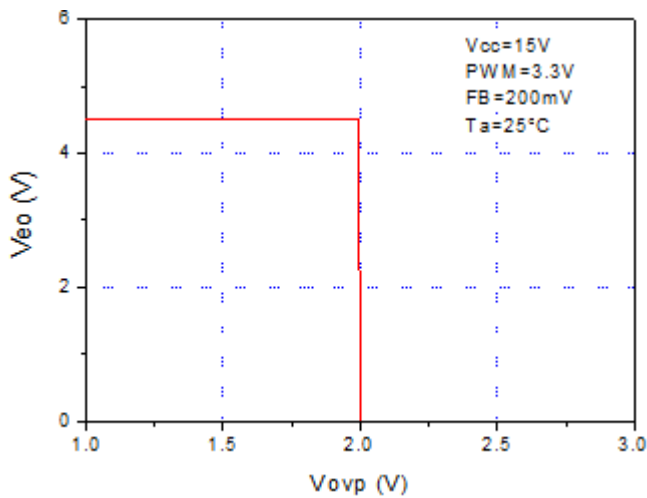
PWM Duty vs. CPWM Voltage



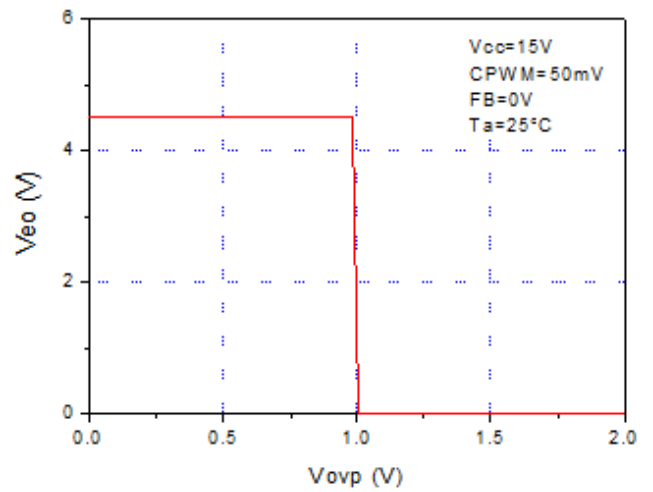
PWM Duty vs. FB Voltage



OVP Threshold Voltage



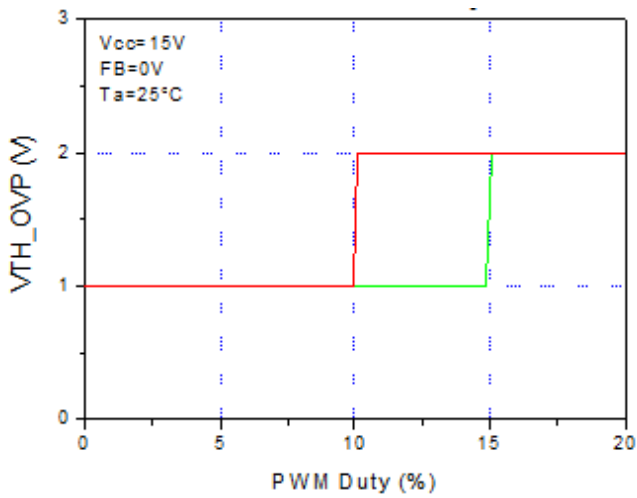
OVP Threshold Voltage at DMIN



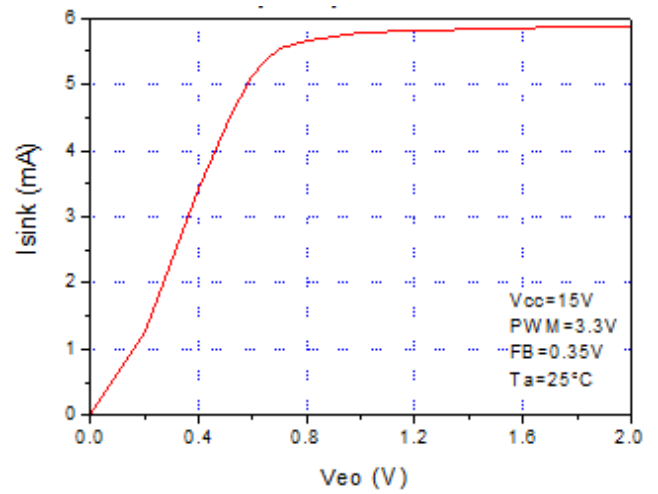
Electrical Characteristics Curves

Vcc = 15V, Ta = -35°C~+85°C, unless otherwise specified. Typical values are at Ta=+25°C

PWM Minimum Duty

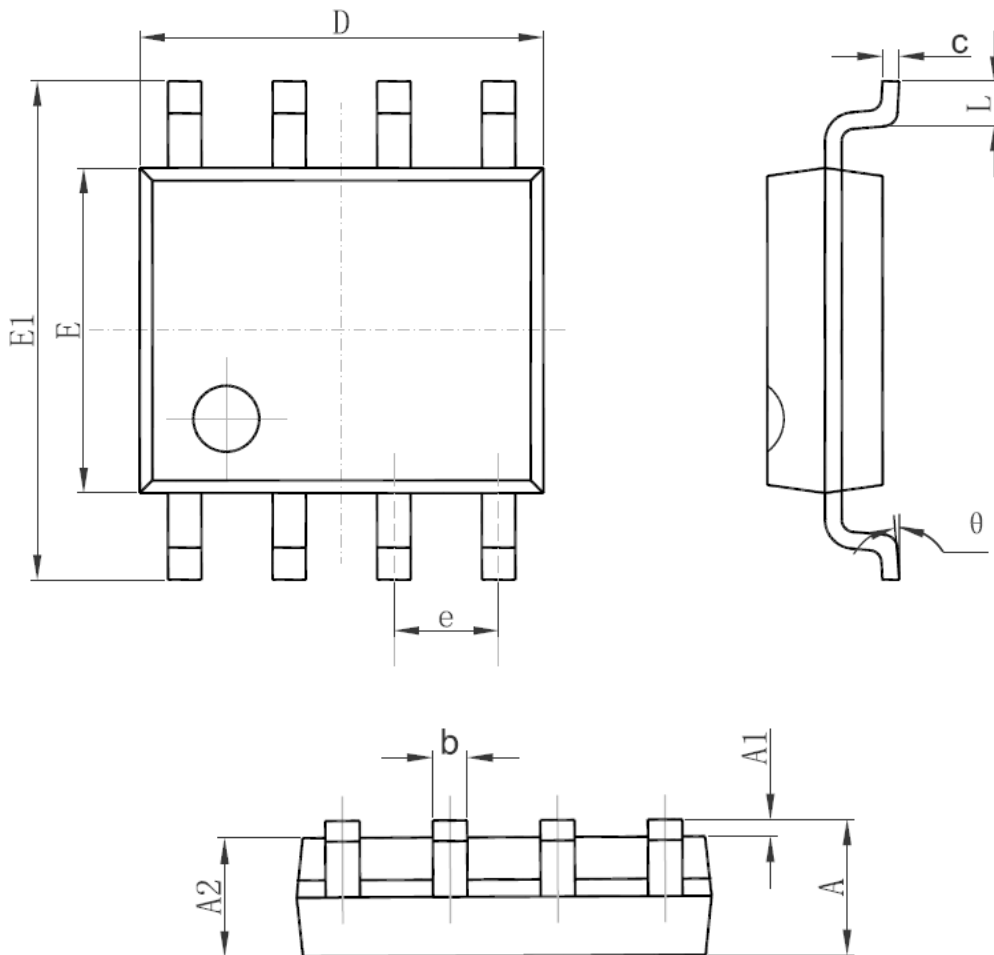


Erramp Output Sink Current



Package Dimension (8SOIC 4.9 X 6.0 X 1.4 (mm))

SOP8 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°