

### 1 Features:

- 4 stage operations with constant power over wide range of input voltage
- 4~700V wide operation voltage range
- Factory pre-set current from 35mA up to 75mA
- High Power Factor: PFC>0.99
- Low Total Harmonic Distortion: THD<10
- PWM Dimming up to 500KHz Frequency
- 0V to 10V Linear Dimming
- TriAC Dimmable
- Current under thermal regulation when  $T_j > 130^{\circ}\text{C}$
- Available in green packages eSOP-8 or DFN8

### 2 Applications:

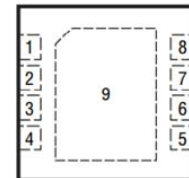
- AC LED lighting
- COB modules
- General LED lighting
- Decorative LED lighting
- Display Signage lighting

### 3 Pin Definitions

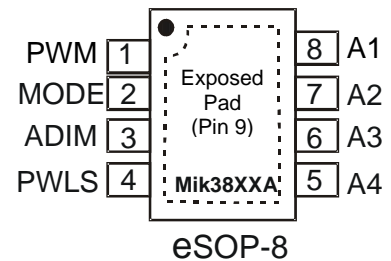
eSOP8	DFN8	Pin Name	Pin Descriptions
1	1	PWM	PWM dimming pin
2	2	MODE	MODE
3	3	ADIM	Analog dimming pin
4	4	PWLS	Power line sensing pin
5	5	A4	4 <sup>th</sup> stage current output
6	6	A3	3 <sup>th</sup> stage current output
7	7	A2	2 <sup>nd</sup> stage current output
8	8	A1	1 <sup>st</sup> stage current output
9	9	GND	GND

**DFN8**

TOP VIEW



(Top View)



### 4 General Descriptions:

The MIK38XXA series is a 4-stage High PFC, low THD and constant power linear LED driver IC that delivers higher luminous output than single stage linear LED drivers. It is capable of delivering up to 75mA peak current and up to 60mA of constant RMS current over a wide range of input voltage from 180VAC to 260VAC or 90VAC to 140VAC. PWM or Linear Analog Dimming can be achieved by applying a PWM signal to the PWM pin or a 0-10V linear voltage to the ADIM pin. Two or more MIK38XXA devices can also be used in parallel to increase the output power.

## Multi-stage, Constant Power LED Driver

MIK38XX series is designed for LED lighting applications in low to mid wattage. Its thermal regulation function rolls off the output current when  $T_j$  reaches 130 °C or above. This allows the driver IC to operate in elevated temperature environment at a reduced current level. With lower output current and lower power consumption, the driver IC reaches its equilibrium and protects LED lights from harmful temperature environment.

### 5 Part Numbers

Model	Max. Input (V)	Rated Current (mA)	Package	
			eSOP-8	DFN8
MIK3835	700	35	✓	✓
MIK3845	700	45	✓	✓
MIK3855	700	55	✓	✓
MIK3865	700	65	✓	✓
MIK3875	700	75	✓	✓

### 6 Typical Application

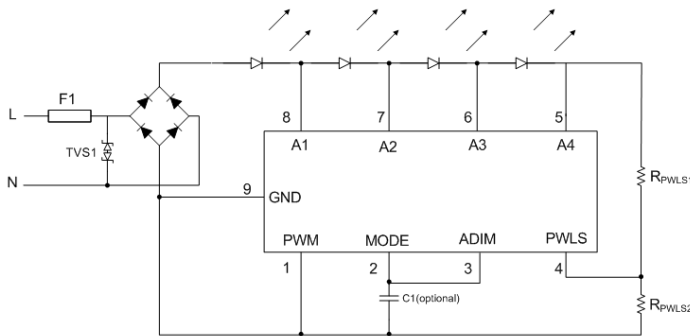


Fig1., Typical Application Circuit of Mik38XX

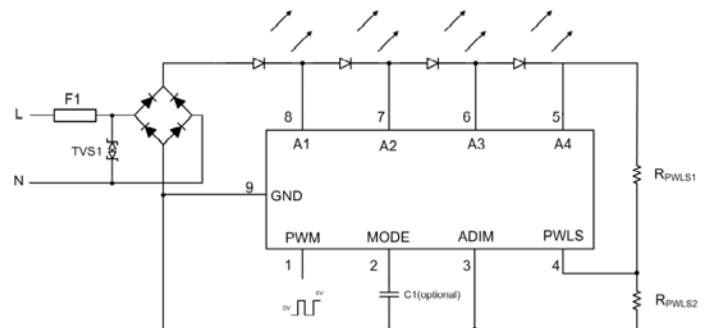


Fig2., Typical Application Circuit of Mik38XX with PWM Dimming

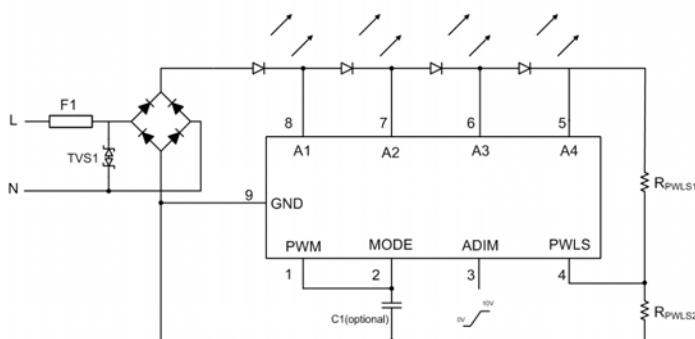


Fig3., Application Circuit of Mik38XX with Analog Dimming

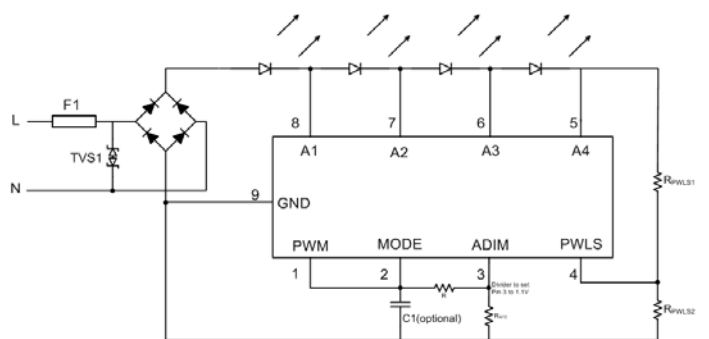


Fig4., Application Circuit of Mik38XX with  $R_{NTC}$

### 7 Absolute Maximum Ratings

Input voltage	700V
Power consumption	2W (QFN8)
Operating Ambient Temperature Range	-40 °C ~ 145°C
Junction Temperature	150 °C
Storage Temperature	-65 °C ~ 150 °C
Lead Temperature	260 °C
Theta JA	100 °C / W (eSOP8) 50 °C / W (DFN8)

### 8 Electrical Specifications

T<sub>A</sub>=25°C, unless otherwise specified.

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Operating Voltage		V <sub>IN</sub>	7		700	V
Output Current (MIK3800)	V <sub>IN</sub> = 20V	I <sub>A</sub>	10		80	mA
Output Current (MIK3835)	V <sub>IN</sub> = 20V	I <sub>A</sub>	33.25	35	36.75	mA
Output Current (MIK3845)	V <sub>IN</sub> = 20V	I <sub>A</sub>	42.25	45	47.25	mA
Output Current (MIK3855)	V <sub>IN</sub> = 20V	I <sub>A</sub>	52.25	55	57.75	mA
Output Current (MIK3865)	V <sub>IN</sub> = 20V	I <sub>A</sub>	61.75	65	68.25	mA
Output Current (MIK3875)	V <sub>IN</sub> = 20V	I <sub>A</sub>	71.25	75	78.75	mA
Output Current Tolerance	0°C < T <sub>J</sub> < 130°C	I <sub>TOL</sub>	-5		+5	%
Thermal Regulation Onset Temperature	V <sub>IC</sub> =20V, I <sub>OUT</sub> =rated	T <sub>O</sub>		130		°C

### 9 Typical Characteristics

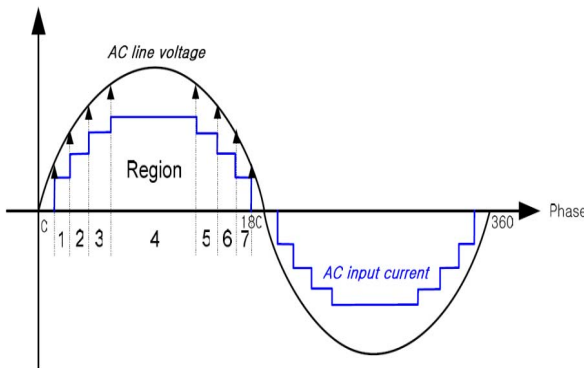


FIG. 5: Input Characteristics

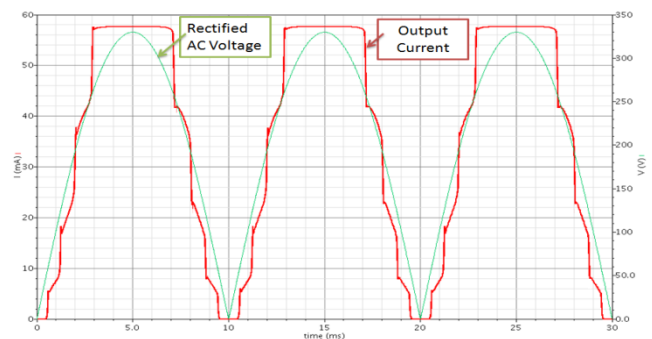


FIG. 6: Output Characteristics

### LED Power vs. Input Voltage

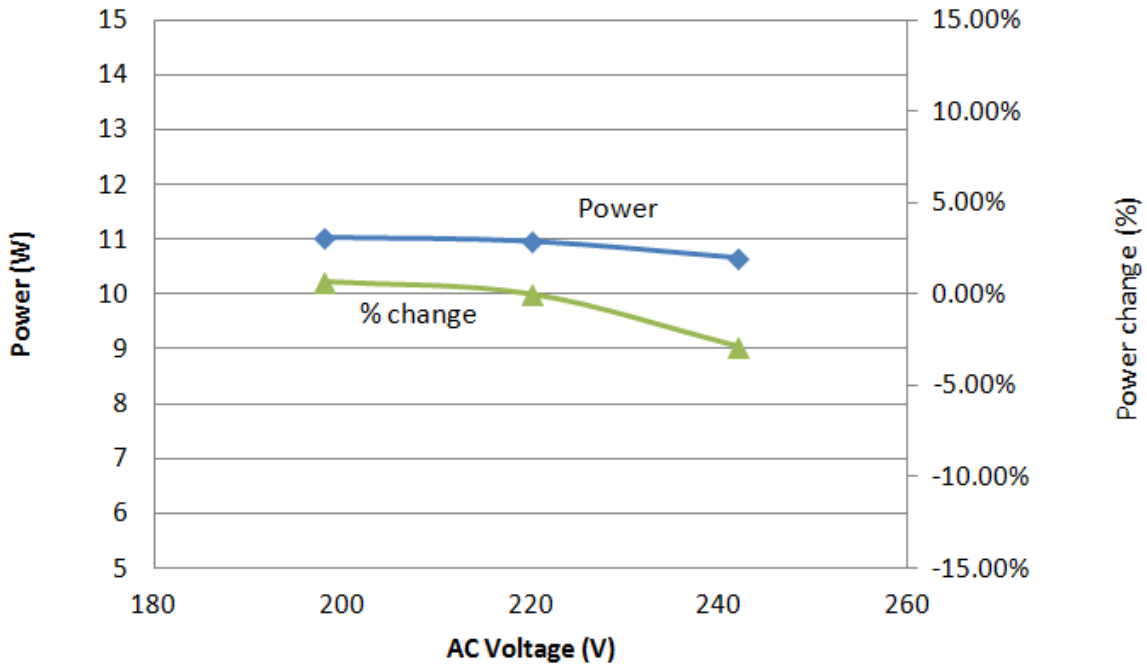


FIG. 7: LED Power vs. Input AC Voltage

### 10. Package Information

#### 10.1 eSOP-8 Package Outline Drawing

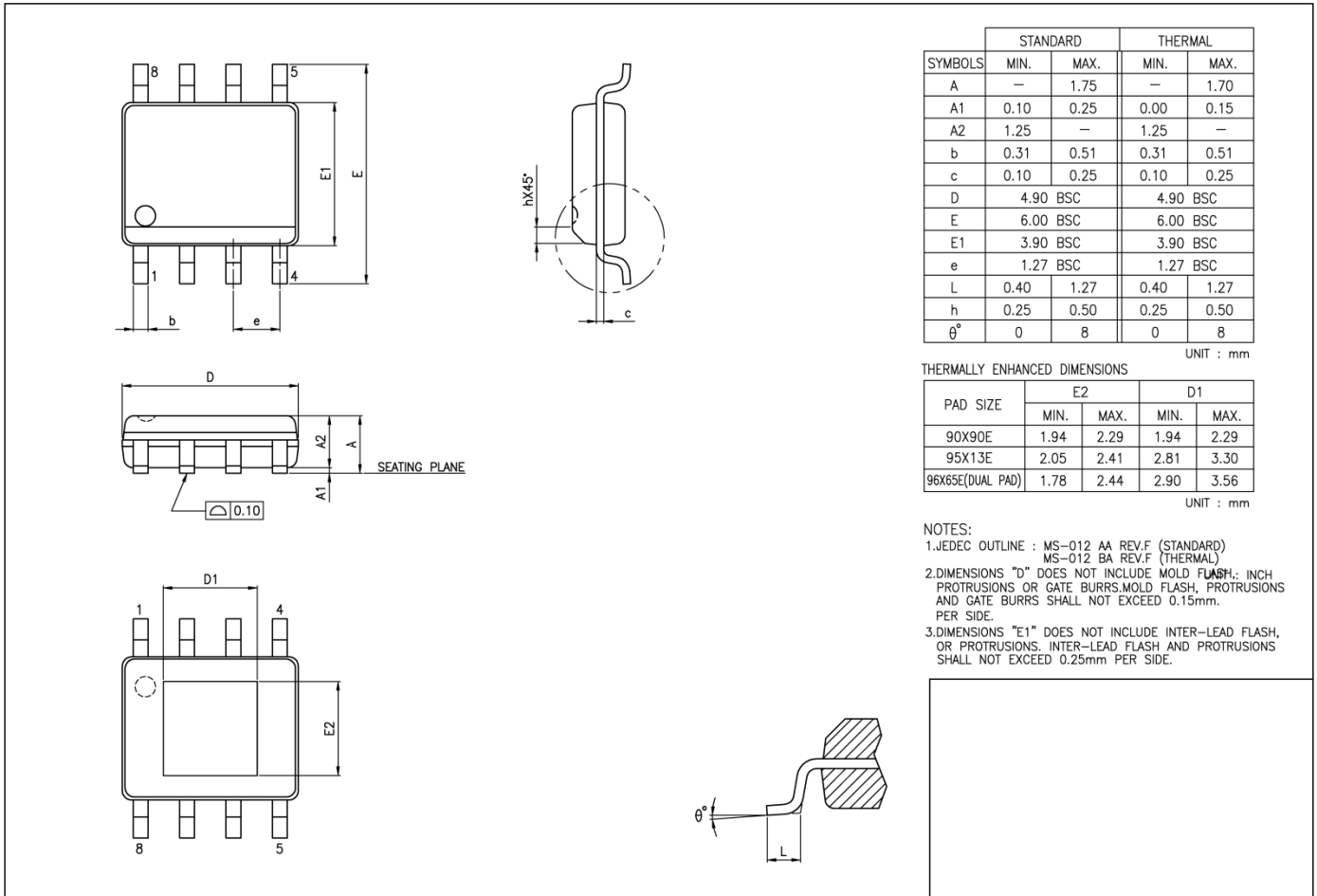


Fig. 8

### 10.2 DFN8 Packaging Outline Drawing

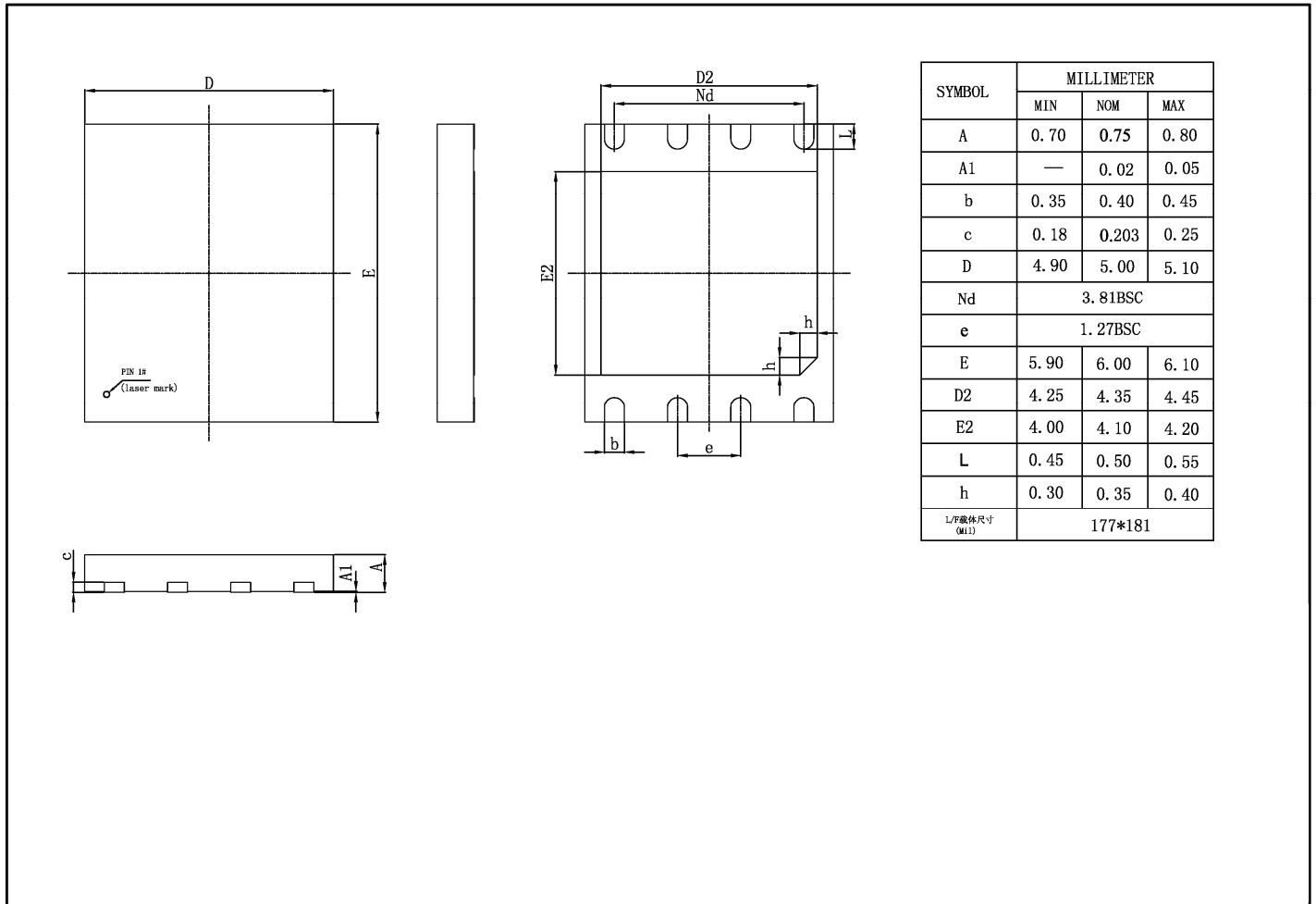
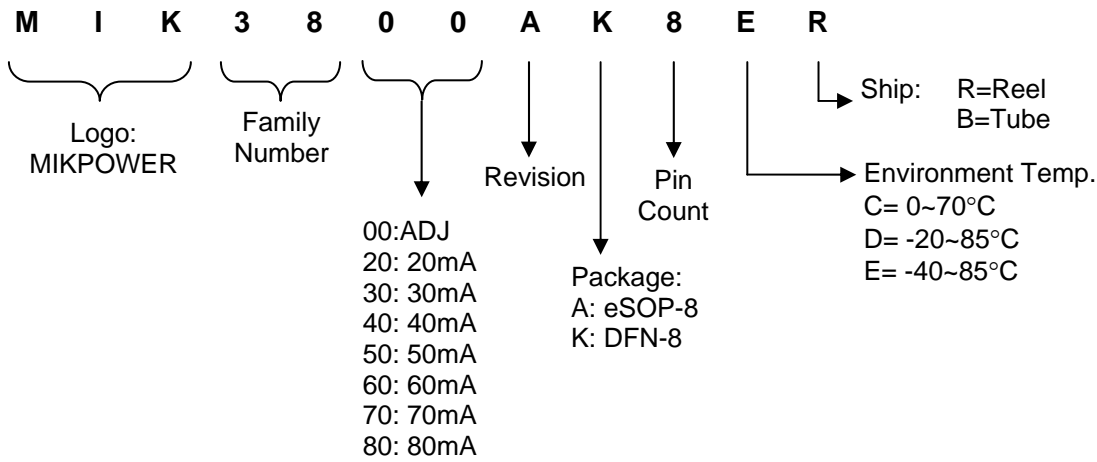


FIG. 9

### APPENDIX A: PART NUMBER



### APPENDIX B: IC MARKING

