

Small size & high efficiency, worldwide input (80 VAC to 280 VAC),
and constant current control with simple LED drive circuit !

IPD for LED-lighting MIP551/MIP552

Overview

MIP551/MIP552 is the best device for LED-lighting.
LED-lighting using MIP551/MIP552 has small size & high efficiency by simple design in worldwide input voltage (80 VAC to 280 VAC), and has dimmer control function by external signal.

Feature

- Worldwide input voltage, 80 VAC to 280 VAC
- Typical LED peak current
MIP551 : 0.5 A
MIP552 : 1.0 A
- * Peak current can be adjusted in two-stage corresponding to the input voltage.
- Dimmer control function : EX-pin voltage range, 0 V to 3 V
- Function to set input voltage that can be driven : L-pin voltage range
- Over temperature protection for IPD (Auto-restart)

Applications

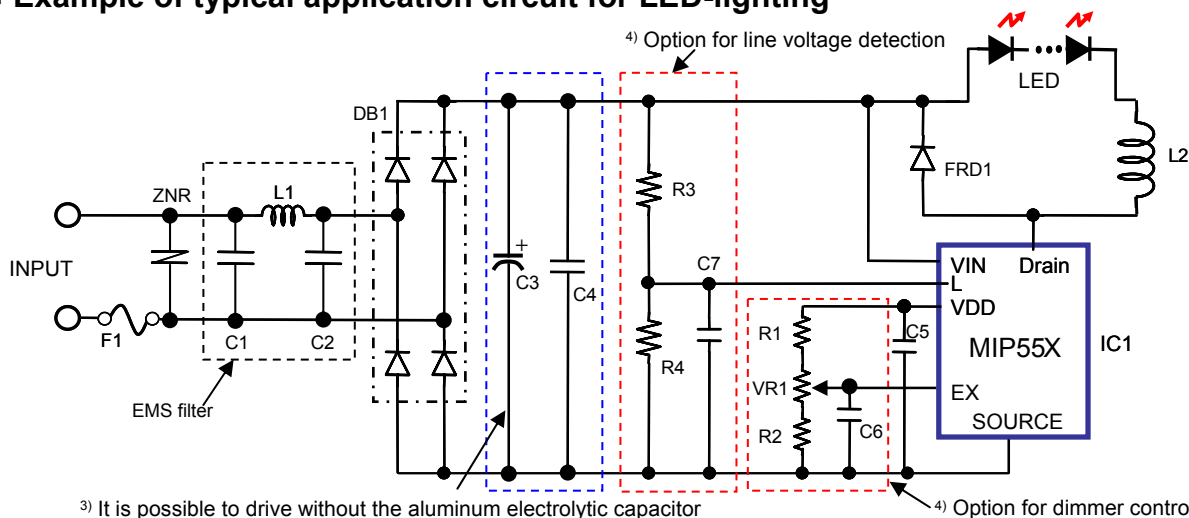
LED-lighting
HB-LED drive circuit

Specifications

Item	Package	VDSS	fosc	IDpeak	RON	Maximum ¹⁾ output power (Ta=25°C)
MIP5510MSSCF	DIP7-A1	≥700V	44 kHz (typ.)	0.5A (typ.)	12Ω(typ.)	10W (Io=0.35A, C3=47μF)
MIP5520MDSLJ	TO-220IPD7-A2			1.0A (typ.)	6Ω(typ.)	30W ²⁾ with heat sink (Io=0.70A, C3=220μF)

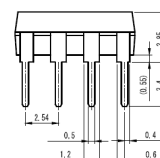
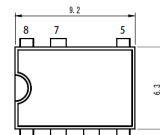
- The maximum output power is different depending on parts and ambient conditions, so the following value is a reference value.
- When the input power is more than 25W, it is necessary to connect PFC circuit in input side.
- It is possible to drive without the smoothing aluminum electrolytic capacitor when the input voltage detecting function is used.
- When the line voltage detecting function or LED dimmer control function is not used, the circuit can be simplified.

Example of typical application circuit for LED-lighting



•DIP7-A1 (MIP551)

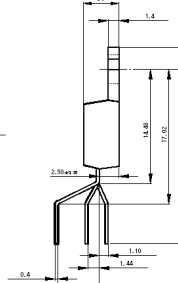
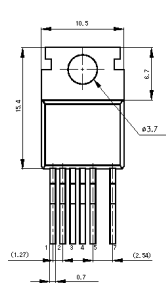
Unit: mm



Pin No.	Pin Name
1	VDD
2	EX
3	L
4	VIN
5	DRAIN
6	NC
7	SOURCE
8	SOURCE

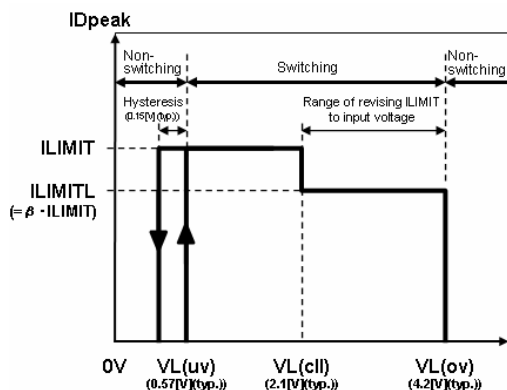
•TO-220IPD7-A2 (MIP552)

Unit: mm

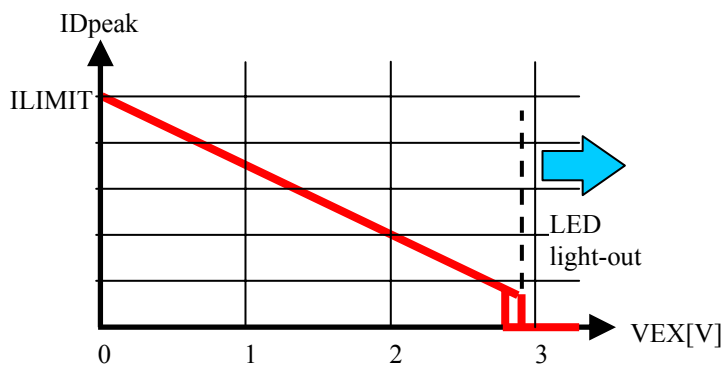


Pin No.	Pin Name
1	EX
2	L
3	VDD
4	SOURCE
5	VIN
6	NC
7	DRAIN

■ Explanation of function terminal

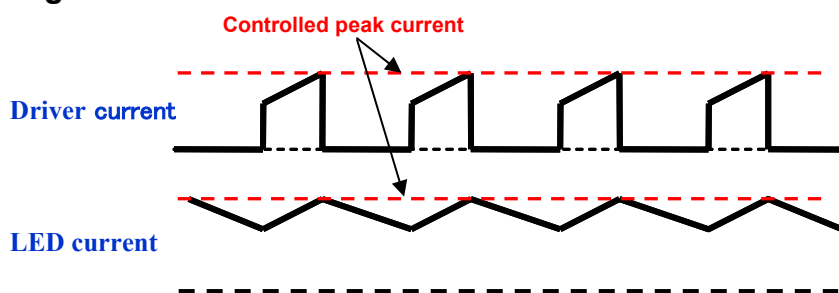


L pin voltage vs ID_{peak}

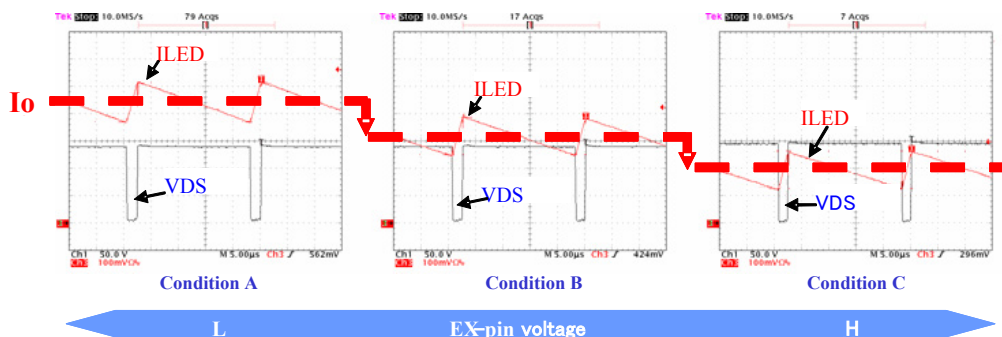


EX pin voltage vs ID_{peak}

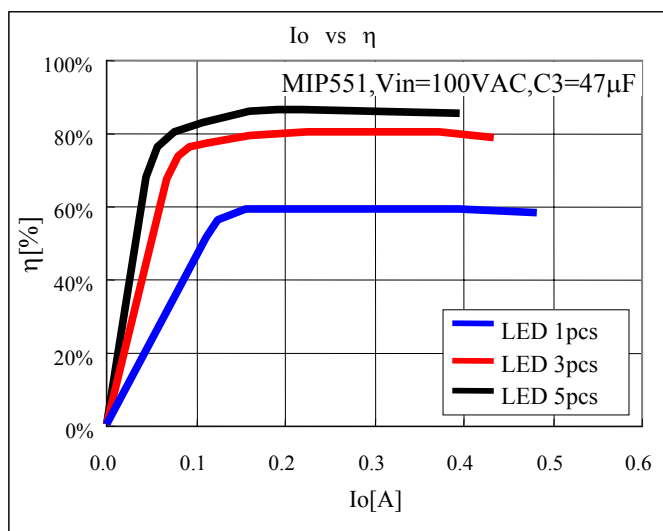
■ Waveform image



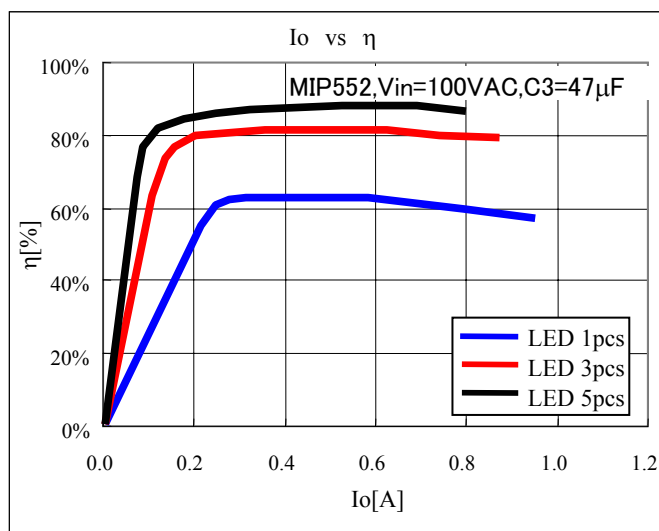
DRAIN current waveform and LED current waveform



■ Reference data DRAIN peak current and LED average current vs EX pin voltage



MIP5510MSSCF Output characteristic



MIP5520MDSLJ Output characteristic