Panasonic

Product News

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

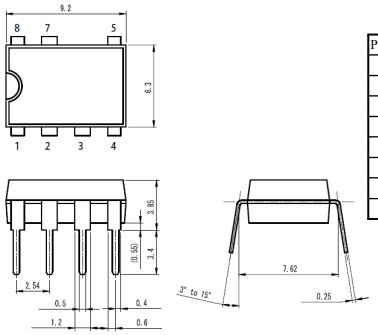
* Peak current can be adjusted in two-stage corresponding to the input voltage.

- 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

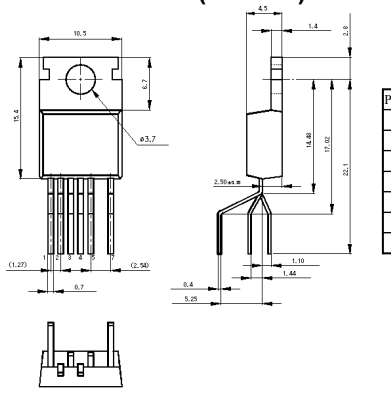
LED-lighting
HB-LED drive circuit

•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



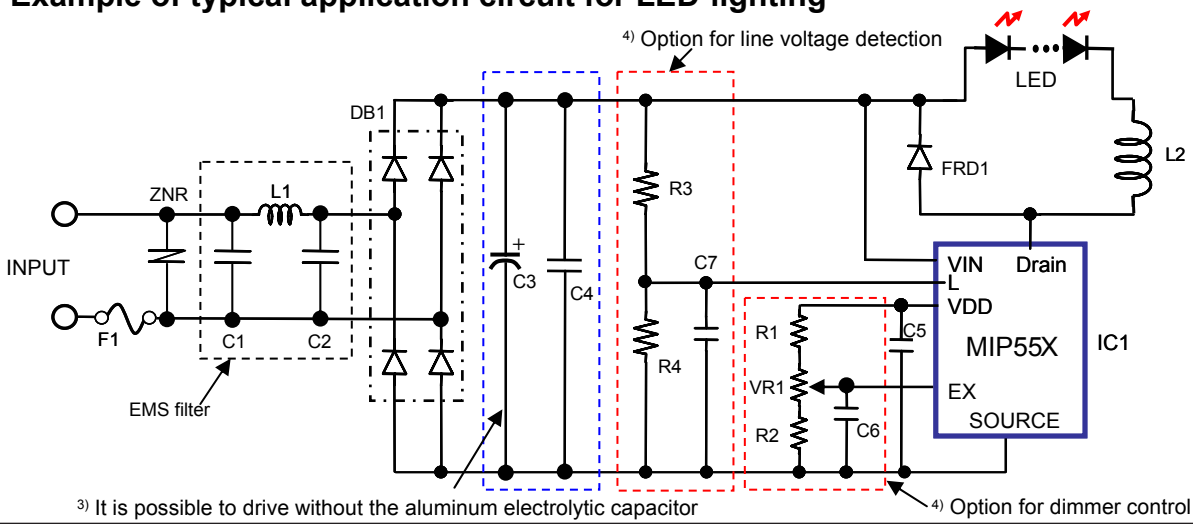
Pin No.	Pin Name
1	EX
2	L
3	VDD
4	SOURCE
5	VIN
6	NC
7	DRAIN

■ 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)

1) The maximum output power is different depending on parts and ambient conditions, so the following value is a reference value.
2) When the input power is more than 25W, it is necessary to connect PFC circuit in input side.
3) It is possible to drive without the smoothing aluminum electrolytic capacitor when the input voltage detecting function is used.
4) 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



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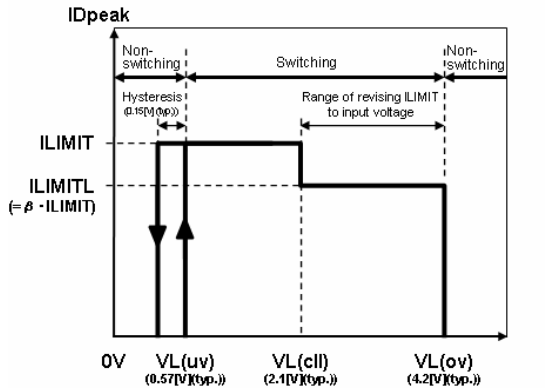
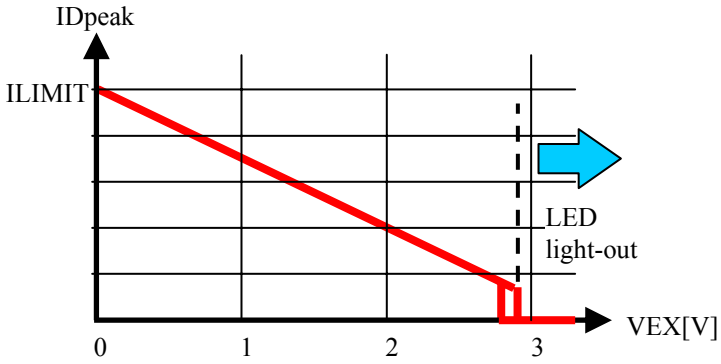
■ Explanation of function terminal

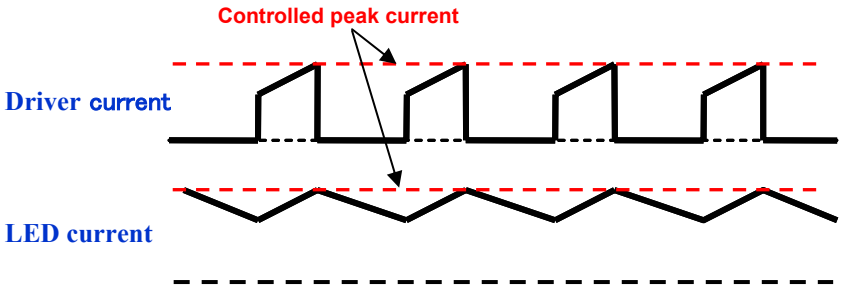


L pin voltage vs IDpeak

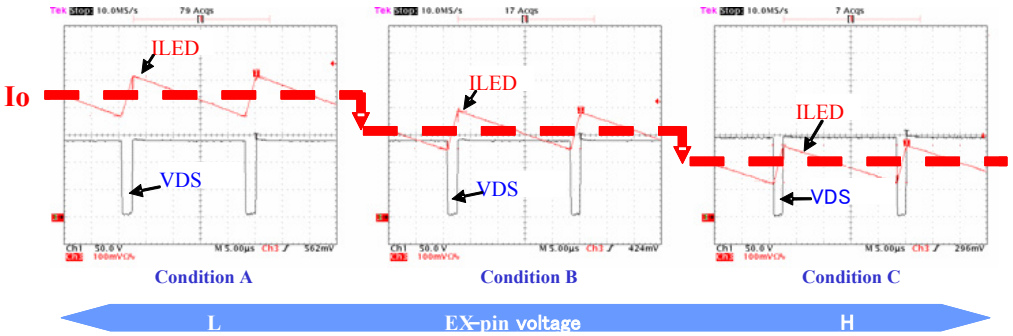


EX pin voltage vs IDpeak

■ Waveform image

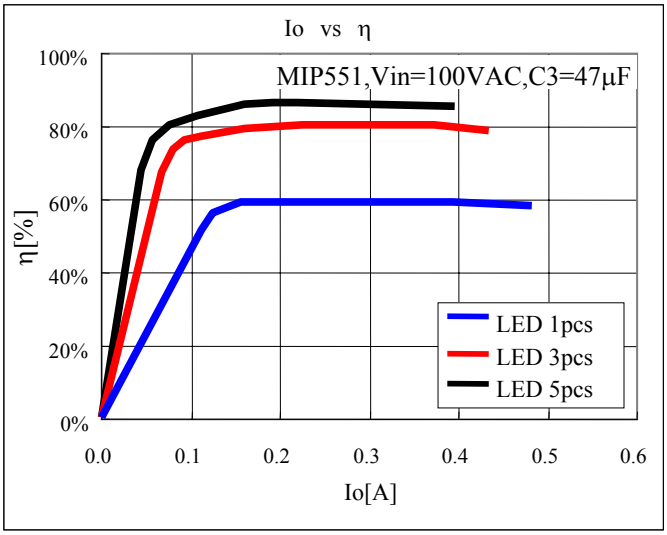


DRAIN current waveform and LED current waveform

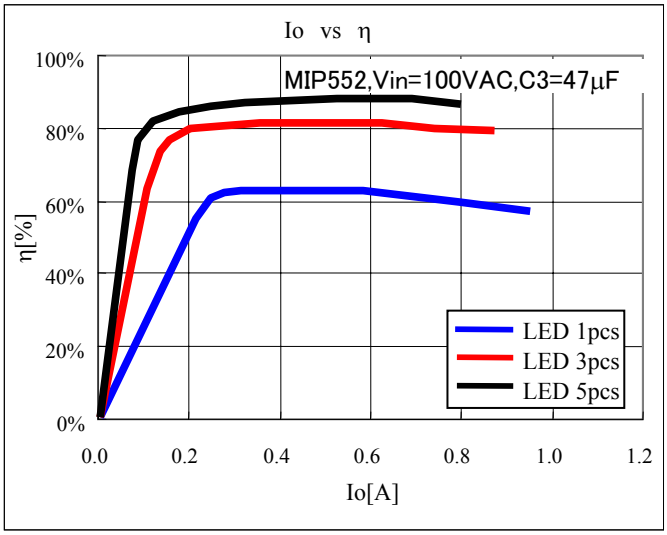


DRAIN peak current and LED average current vs EX pin voltage

■ Reference data



MIP5510MSSCF Output characteristic



MIP5520MDSLJ Output characteristic