Communication ICs

Surface-mount power supply unit for LCD drivers BP5317

The BP5317 is a DC / DC converter unit designed for driving liquid crystal displays (LCDs). The unit supplies a positive voltage for LCDs from a logic circuit power supply (+5V). Being in a compact and light surface-mount package, the IC can be built into an LCD panel.

Applications

LCD panels of personal computers, word processors, and copiers

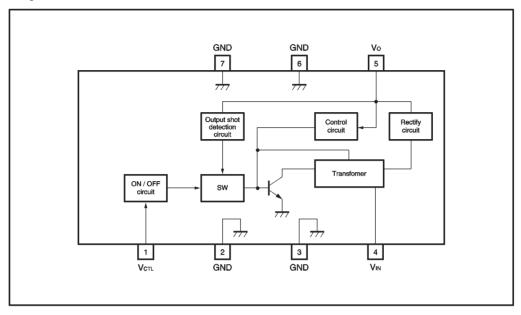
Features

- 1) Automatic mounting and reflow soldering supported.
- 2) Compact size and thin design enable internal installation in LCD panels.
- 3) Internal short-circuit protection.

•Absolute maximum ratings (Ta = 25° C)

Parameter	Symbol	Limits	Unit
Power supply voltage	Vin	7.0	V
Operating temperature	Topr	0~+60	Ĉ
Storage temperature	Tstg	-20~+85	ĉ

Block diagram



Pin descriptions

Pin No.	Pin name	Function		
1	Vctl	Outpout ON / OFF control ; output starts when the pin is HIGH level, and stops at LOW level		
2,3,6,7	GND	Ground		
4	Vin	Input ; connect a low-impedance capacitor with a recommended capacitance of 100 μF between this pin and GND		
5	Vo	Output ; connect a low-impedance capacitor with a recommended capacitance of 47 μF between this pin and GND		

\blacksquare Electrical characteristics (unless otherwise noted, $Ta = 25$ C and $vert = 50$)								
Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions		
Input voltage	VIN	4.5	5.0	5.5	V			
Output current	Ιουτ	_	—	30	mA			
Output voltage	Vout	28.0	30.0	32.0	V	VIN=4.5~5.5V, IOUT=0~30mA		
Ripple noise voltage	1 ע	_	100	200	mV _{P-P}	VIN=5V, IOUT=30mA*		
Efficiency	η	65	73	-	%	VIN=5V, IOUT=30mA		
ON / OFF CTL voltage when ON	Vст∟	2.5	-	5.5	v	VIN=5V, Vo>28V		
ON/OFF CTL voltage when OFF	Vст∟	_	_	1.0	v	VIN=5V, Vo<0.3V		

●Electrical characteristics (unless otherwise noted, Ta = 25°C and VcTL = 5V)

* Output ripple voltage does not include spike noise.

Measurement circuit

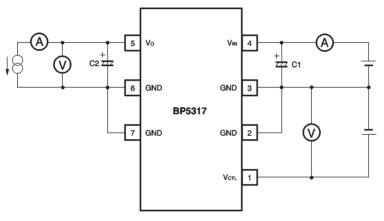


Fig.1

C1: 100 μ F / 16 V (NICHICON PL-series or equivalent) C2: 47 μ F / 35 V (NICHICON PL-series or equivalent)

•Electrical characteristic curve

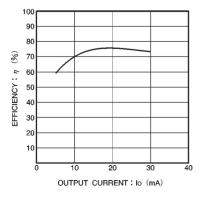
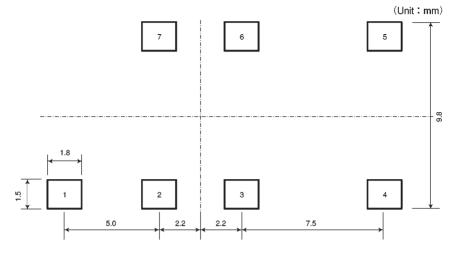


Fig. 2 Efficiency

Recommended pad dimensions





Operation notes

The soldering used inside the unit is equivalent to H63 solder, so it will remelt during reflow.

•External dimensions (Units: mm)

