GAPTEC GREEN TECHNOLOGY

LCN78_0.5 Cost effective Series

Wide Input Non-Isolated & Regulated, Single Output

Switching Regulator

- **High performance switching regulator**
- **Low profile (L*W*H=11.6*6.0*10.2)**
- **Wide 4.5V to 42V operating input range**
- **Efficiency up to 96%**
- **Compatible with LM78 pin-out**
- **Short circuit protection (SCP)**
- **Low output ripple & noise**

The LCN78_0.5 series cost effective high efficiency switching regulators are ideally suited to replace LM78xx linear regulators and are pin compatible.

Model selection:
LC78_yy-pp
LC=Series**; ##=**Vout**; pp=**output current

Example:
LCN78_05-0.5
LCN=Series; ##= 5Vout; pp=0.5A

Common specifications	
Short circut protection:	Continuous, automatic recovery
Temperature rise at full load:	25°C MAX, 15°C TYP
Cooling:	Free air convection
Operation temperature range:	-40°C~+100°C
Storage temperature range:	-55°C ~+125°C
Lead temperature:	300°C MAX, 1.5mm from case for 10 sec
Operating case temperature:	110°C MAX
Temperature coefficient:	-40°C to +85°C ambient 0.02%/°C MAX
Storage humidity range:	< 95%
Soldering profile:	265°C /10sec. max
MTBF (using MIL-HDBK-217F):	+25°C 2000x10^3 hours
Packing quantities:	42pcs per Tube
Case material:	Non Conductive Black Plastic UL94-V0
Potting material:	Epoxy UL94-V0
Weight:	1.3g

Output specifications

Item	Test conditions	Min	Typ	Max	Units
Output voltage accuracy	Full load		±3		%
Output current	10-500mA				
Output current limit				1	A
Internal Power Dissipation			0.7		W
Line regulation	Vin= min. to max. at full load		0.4		%
Load regulation	0% to 100% load		0.6		%
Ripple + Noise	20MHz Bandwidth			40	mVp-p
Dynamic load stability	100%-50% load		±100		mV
Switching frequency			500		KHz
Case Thermal Impendance			70		°C/W
Thermal shutdown	Internal IC junction		150		°C
Max capacitance load				220	µF

Note:
1. All specifications measured at TA=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. Only typical models listed. If you need other model, please confirm the power, input voltage and output voltage, and then phone us.

Part Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [A]	Efficiency [Vin. min]	Efficiency [Vin. max]	Max. capacitive load
LCN78_02-0.5	4.5-42	2.5	0.5	88	76	220µF
LCN78_03-0.5	4.5-42	3.3	0.5	92	80	220µF
LCN78_05-0.5	6.5-42	5	0.5	94	84	220µF
LCN78_06-0.5	8-42	6.5	0.5	95	86	220µF
LCN78_09-0.5	11-42	09	0.5	96	90	220µF
LCN78_12-0.5	15-42	12	0.5	97	91	220µF

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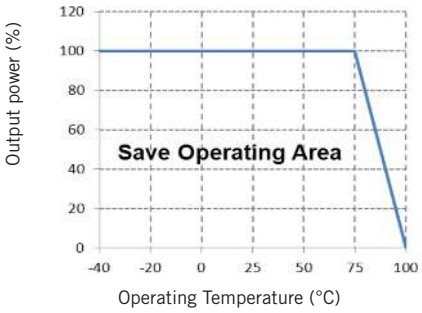
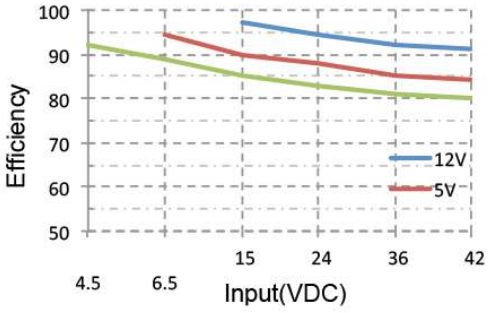
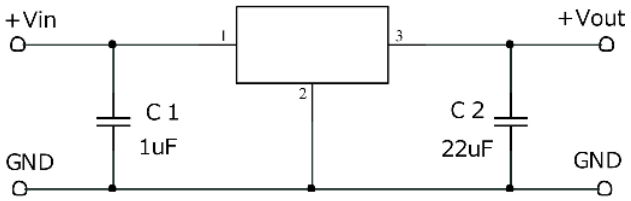
Typical characteristics

Derating graph (natural convection)



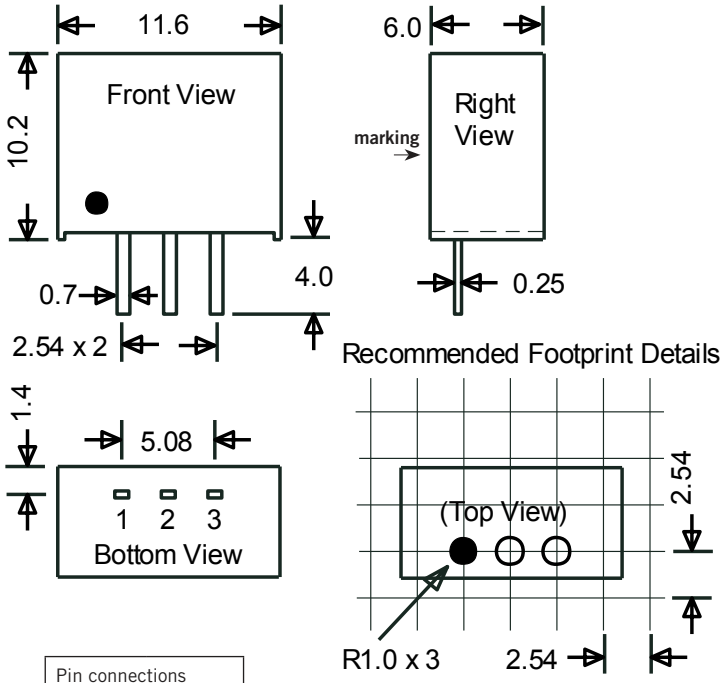


Standard application circuit



Note:
C1, C2 can be options

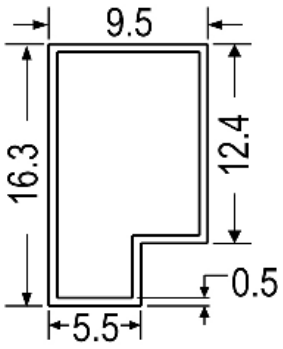
Mechanical dimensions and footprint



Pin connections	
1	+Vin
2	GND
3	+Vout

Note:
XX.X ± 0.5 mm
XX.XX ± 0.25 mm

Tube outline dimensions



Note:
L=520 ± 2 mm
Devices per tub quantity: 42 PCS