

LME78_1.0R1 series

Single Output - Non-Isolated & Regulated



Switching Regulator

- ⊕ SIP3 package
- ⊕ Up to 95% efficiency
- ⊕ Non isolated & regulated
- ⊕ Operating temperature from -40°C to +85°C
- ⊕ No-load input current as low as 0.3mA
- ⊕ Short circuit protection (SCP)
- ⊕ UL62368-1 approved
- ⊕ Heatsinks not needed

Introducing our new LME78_1.0R1 series, a compact and highly efficient non-isolated DC-DC switching regulator designed for reliable voltage conversion in space-sensitive applications. Housed in a compact SIP3 package, the series delivers regulated output performance with efficiencies of up to 95%, helping to reduce power losses and minimize heat generation. With a no-load input current as low as 0.3 mA, the LME78_1.0R1 series is well suited for energy-efficient designs and applications requiring low standby consumption. It operates reliably across a temperature range from -40°C to +85°C and includes integrated short circuit protection (SCP) for enhanced system safety. Thanks to its high efficiency, no additional heatsinks are required, simplifying thermal design and system integration. UL62368-1 approval further supports its use in industrial and safety-relevant applications. The LME78_1.0R1 series combines compact size, high efficiency, and dependable regulated performance in a practical SIP3 form factor.



Common specifications

Short circuit protection	Continuous, automatic recovery
Switching frequency	440 KHz
Operating temperature	-40°C - +85°C (with derating)
Storage temperature	-55°C - +125°C
Humidity	95% (non condensing)
Cooling	Free air convection
Case material	Non-conductive black plastic
Weight	2.0g
MTBF (MIL-HDBK-217F@25°C)	(+25°C) 5,000,000 hours (+71°C) 5,000,000 hours
Dimensions	11.6 x 7.6 x 10.4 mm

Output specifications

Item	Operating condition	Min	Typ	Max	Units
Voltage tolerance			2	±3	%
Line regulation	1.2V to 1.5V			0.3	%
Line regulation	1.8V to 15V			0.3	%
Load regulation	1.2V to 1.5V (10% to 100% full load)			0.6	%
Load regulation	1.8 V to 15V (10% to 100% full load)		0.4	0.6	%
Ripple & noise (without output capacitor)	1.2V to 6.5V (BW = DC to 20MHz)			75	mVp-p
Ripple & noise (without output capacitor)	9V to 15V (BW = DC to 20MHz)			100	mVp-p
Transient response setting time	50% load step change		250		us

Example:

LME78_05-1.0R1

LME78 = Series; 05 = 5Vout; 1.0 = 1A; R1 = Revised

EMC specifications

EMC	EMI	CE	CISPR32/EN55032 CLASS B (see fig. 1 for recommended circuit)		
EMC	EMI	RE	CISPR32/EN55032 CLASS B (see fig. 1 for recommended circuit)		
EMC	EMS	ESD	IEC/EN61000-4-2	Contact ±4kV	perf. criteria B
EMC	EMS	RS	IEC/EN 61000-4-3	10V/m	perf. criteria A
EMC	EMS	EFT	IEC/EN 61000-4-4	±1kV	perf. criteria B
EMC	EMS	Surge	IEC/EN 61000-4-5	line to line ±1kV	perf. criteria B
EMC	EMS	CS	IEC/EN 61000-4-6	3Vr.m.s	perf. criteria A

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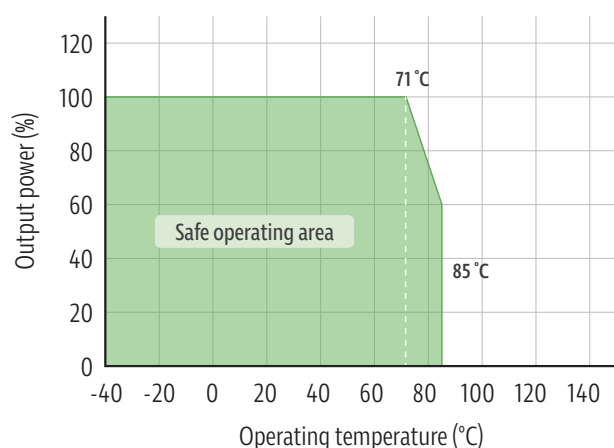
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Product Selection Guide

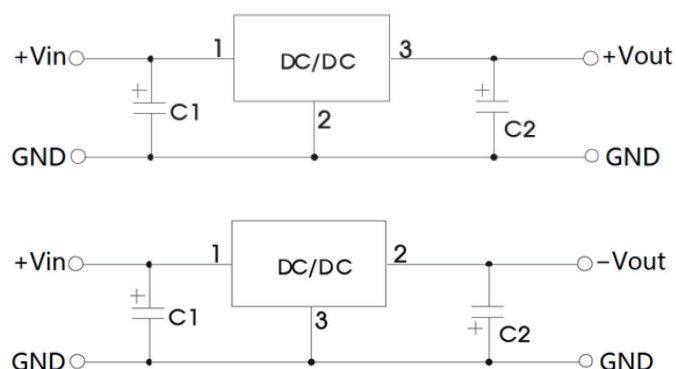
Approval	Part number	Input Voltage Range (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%) min. Vin	Efficiency (%) max. Vin	Capacitive Load (μF) max.
UL	LME78_1.2-1.0R1	4.75-36	1.2	1000	74	62	680
UL	LME78_1.5-1.0R1	4.75-36	1.5	1000	78	65	680
UL	LME78_1.8-1.0R1	4.75-36	1.8	1000	82	69	680
UL	LME78_2.5-1.0R1	4.75-36	2.5	1000	87	75	680
UL	LME78_03-1.0R1	4.75-36	3.3	1000	90	78	680
UL	LME78_05-1.0R1	6.5-36 6.5-27	5.0 -5.0	1000 -500	92 85	84 81	680 330
UL	LME78_06-1.0R1	9.0-36	6.5	1000	93	86	680
UL	LME78_09-1.0R1	12-36	9.0	1000	95	90	680
UL	LME78_12-1.0R1	15-36 8-20	12 -12	1000 -300	95 88	92 87	470 330
UL	LME78_15-1.0R1	18-36 8-18	15 -15	1000 -300	95 87	93 88	470 330

Product characteristic curve

Temperature derating graph



Design and application circuit recommended



Vout	C1	C2
1.2	10μF/50V	22μF/10V
1.5		22μF/10V
1.8		22μF/10V
2.5		22μF/10V
3.3		22μF/10V
5		22μF/10V
6.5		22μF/16V
9		22μF/16V
12		22μF/25V
15		22μF/25V

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Recommended EMC circuit

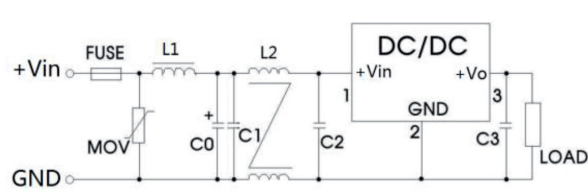
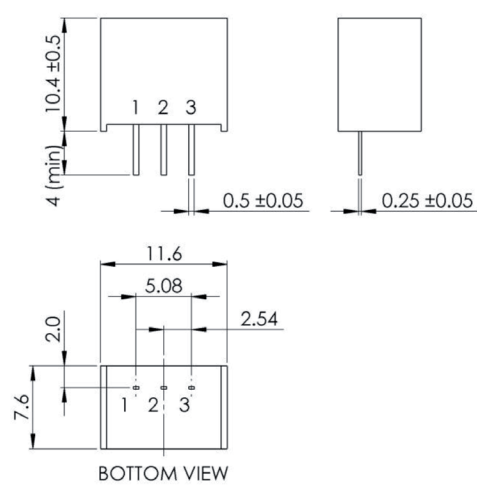


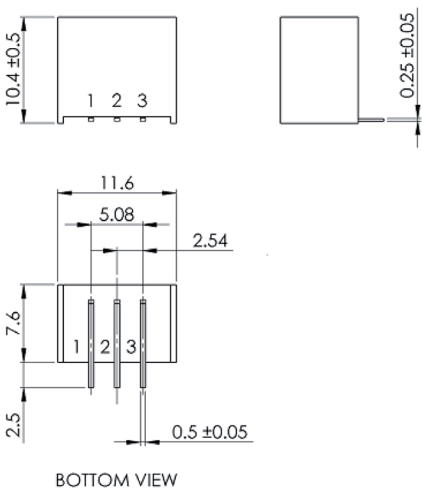
Fig 1

FUSE	Select fuse value according to actual input current
MOV	S20K30
L1	82μH
C0	680μF /50V
L2	4.7mH
C1, C3, C4	4.7μF /50V
C2	10μF /50V

Mechanical dimensions



Unit : mm
Tolerance : XX.X ±0.5 , XX.XX ±0.25



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Tolerance : XX.X ±0.5 , XX.XX ±0.25

PIN Connection

PIN	1	2	3
SINGLE	+Vin	GND	+Vout