

ASR01-SERIES

DC-DC CONVERTER

—7VDC~—32VDC WIDE INPUT RANGE
UP TO 15Watts



FEATURES

- PIN-OUT COMPATIBLE WITH LM79XX LINEAR REGULATORS
- SMALL SIZE AND LOW PROFILE : 0.46 X 0.30 X 0.65 INCH
- LOW STANDBY POWER
- OVER-CURRENT PROTECTION
- SHORT CIRCUIT PROTECTION
- OVER-TEMPERATURE PROTECTION
- SAFETY MEETS UL60950-1, EN60950-1 AND IEC60950-1
- COMPLIANT TO RoHS EU DIRECTIVE 2011/65/EU

APPLICATIONS

- WIRELESS NETWORK
- TELECOM/DATACOM
- INDUSTRY CONTROL SYSTEM
- DISTRIBUTED POWER ARCHITECTURES
- SEMICONDUCTOR EQUIPMENT

NON ISOLATION	LOW STANDBY POWER	OCP	SCP	OTP
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TECHNICAL SPECIFICATION

All specifications are typical at nominal input, full load and 25°C otherwise noted

Model Number	Input Range VDC	Output Voltage VDC	Output Current		Input Current @ No Load mA	Efficiency		Maximum Capacitor Load μF
			@Min.Load A	@FullLoad A		Min.Vin %	Max.Vin %	
ASR01-12S05	-7 ~ -32	-5	-0.1	-1	-3	91.5	84.5	1600
ASR01-12S5P2	-7 ~ -32	-5.2	-0.1	-1	-3	92.0	85.0	1600
ASR01-12S06	-8 ~ -32	-6	-0.1	-1	-3	92.5	86.5	1000
ASR01-12S08	-10.5 ~ -32	-8	-0.1	-1	-3	94.0	89.0	1000
ASR01-24S09	-11.5 ~ -32	-9	-0.1	-1	-3	94.5	90.5	1000
ASR01-24S12	-15 ~ -32	-12	-0.1	-1	-3	96.0	92.0	470
ASR01-24S15	-18 ~ -32	-15	-0.1	-1	-3	96.0	93.5	470

PART NUMBER STRUCTURE

ASR01	-	12	S	05	-	A
Series Name		Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)		Assembly Option
		12: -7 ~ -32 -8 ~ -32 -10.5 ~ -32	S: Single	05: -5 5P2: -5.2 06: -6 08: -8 09: -9 12: -12 15: -15		□: Standard A: Horizontal type

INPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating input voltage range	ASR01-12S05	-7	-12	-32	VDC
	ASR01-12S5P2	-7	-12	-32	
	ASR01-12S06	-8	-12	-32	
	ASR01-12S08	-10.5	-12	-32	
	ASR01-24S09	-11.5	-24	-32	
	ASR01-24S12	-15	-24	-32	
	ASR01-24S15	-18	-24	-32	
Start up time	Constant resistive load Power up		15		ms
Rise time	Time for Vo to rise from 10% to 90% of Vo		10		ms
Input reflected ripple current	-12Vin(nom)		100		mAp-p
	-24Vin(nom)		100		
Maximum input current	Vin=Vin(min); Io=Io(max)			-1	A
Input filter				Capacitor type	

OUTPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Voltage accuracy		-2.0		+2.0	%
Line regulation	Low Line to High Line at Full Load	-1.0		+1.0	%
Load regulation	10% Full Load to Full Load	-0.5		+0.5	%
	Standard type Suffix-A	-0.6		+0.6	
Ripple and noise	Measured by 20MHz bandwidth	-5Vout	50		mVp-p
		-5.2Vout	50		
		-6Vout	75		
		-8Vout	75		
		-9Vout	75		
		-12Vout	75		
		-15Vout	75		
Temperature coefficient		-0.015		+0.015	%/°C
Dynamic load response	50% load step change	Peak deviation	5		%Vo
			250		µs
Over load protection	% of Iout rated; Hiccup mode		-2.0		A
Short circuit protection				Continuous, automatic recovery	

GENERAL SPECIFICATIONS

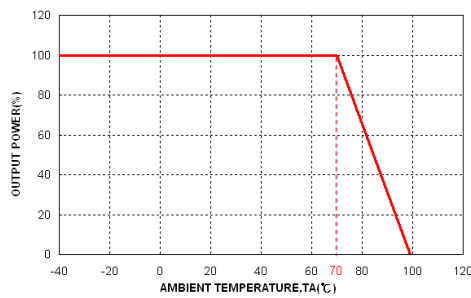
Parameter	Conditions	Min.	Typ.	Max.	Unit
Switching frequency	12S05,12S5P2 Others	323 425	380 500	437 575	kHz
Design meet safety standard		IEC60950-1, UL60950-1, EN60950-1			
Case material		Non-conductive black plastic			
Potting material		Silicone (UL94-V0)			
Dimensions		0.46 X 0.30 X 0.65 Inch (11.7 X 7.5 X 16.5 mm)			
Weight		3.1g(0.11oz)			
MTBF	MIL-HDBK-217F @Ta=25 °C, Full load	8.475 x 10 ⁶ hr			

ENVIRONMENTAL SPECIFICATIONS

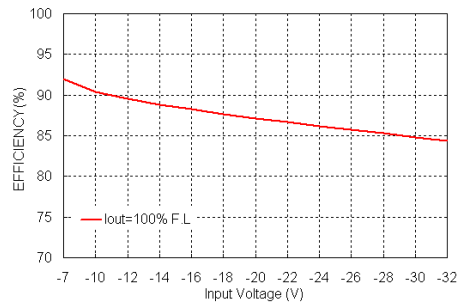
Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating temperature range		-40		+85	°C
Over temperature protection	Internal IC junction		+165		°C
Storage temperature range		-55		+125	°C
Thermal shock		MIL-STD-810F			
Vibration		MIL-STD-810F			
Relative humidity		5% to 95% RH			

CAUTION: This power module is not internally fused. An input line fuse must always be used.

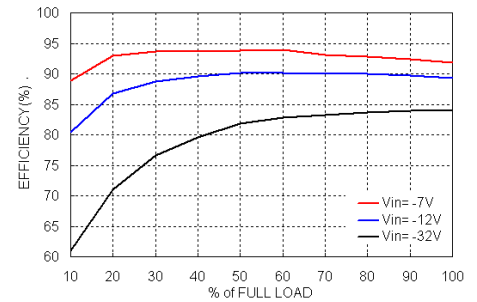
CHARACTERISTIC CURVE



ASR01-12S05 Derating Curve



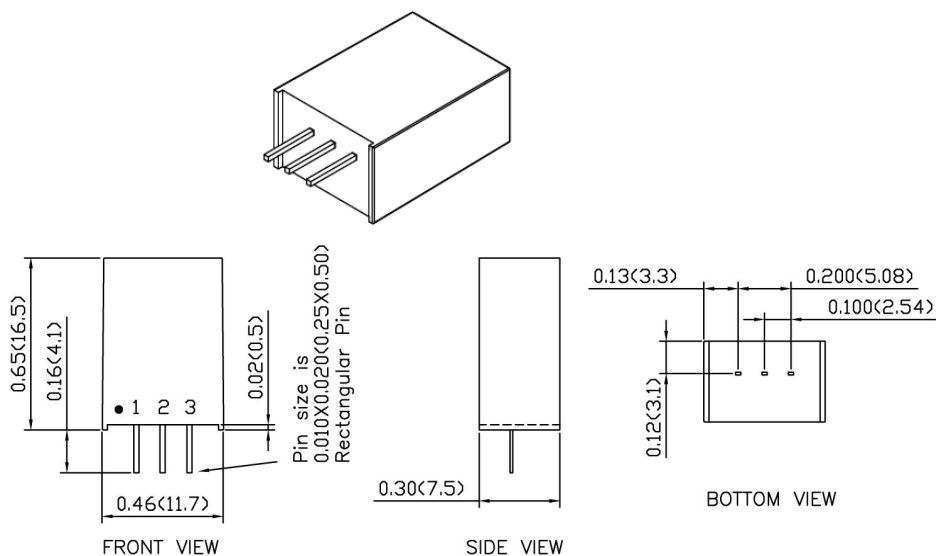
ASR01-12S05 Efficiency VS Input Voltage



ASR01-12S05 Efficiency VS Output Load

MECHANICAL DRAWING FOR STARDANDS

ASR01-□□S□□ Vertical SIP type

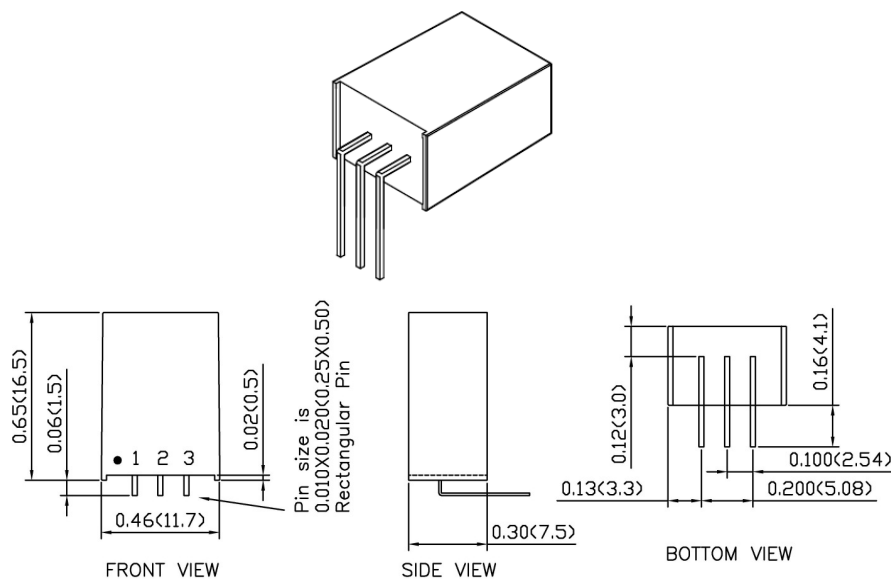


PIN CONNECTION	
PIN	DEFINE
1	GND
2	-INPUT
3	-OUTPUT

- All dimensions in Inch (mm)
Tolerance: X.XX±0.02 (X.X±0.5)
X.XXX±0.01 (X.XX±0.25)
- Pin pitch tolerance ±0.01(0.25)
- Pin dimension tolerance ±0.004 (0.1)

MECHANICAL DRAWING FOR SUFFIX-A

ASR01-□□S□□-A Horizontal SIP type



PIN CONNECTION	
PIN	DEFINE
1	GND
2	-INPUT
3	-OUTPUT

- All dimensions in Inch (mm)
Tolerance: X.XX±0.02 (X.X±0.5)
X.XXX±0.01 (X.XX±0.25)
- Pin pitch tolerance ±0.01(0.25)
- Pin dimension tolerance ±0.004 (0.1)