

MMI

**DC/DC CONVERTER
15W**



67D SERIES

WIDE INPUT VOLTAGE RANGE

15 WATTS DC-DC CONVERTER

FEATURES

- 2:1 WIDE INPUT VOLTAGES:9-18V,18-36V,36-72V
- 15 WATTS (2x1x0.4inches) PACKAGE
- EFFICIENCY TO 80%
- P1 INPUT FILTER



GENERAL SPECIFICATIONS

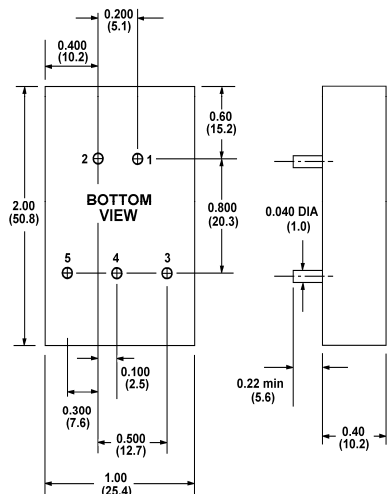
- SWITCHING FREQUENCY : 300KHz TYP.
- OUTPUT RIPPLE & NOISE : 100mVp-p(20MHz B.W.)
- ISOLATION VOLTAGE : 1500VDC
- ISOLATION RESISTANCE : 10^9 ohms
- STORAGE TEMPERATURE RANGE : -40°C TO 100°C
- OPERATING TEMPERATURE RANGE : -25°C TO +71°C
- SHORT CIRCUIT PROTECTION : CONTINUOUS
- CASE MATERIAL : BLACK COATED COPPER WITH NON-CONDUCTIVE BASE

ELECTRICAL SPECIFICATIONS

- INPUT VOLTAGE RANGE :12V nominal ...9-18V
:24V nominal ...18-36V
:48V nominal ...36-72V
- OUTPUT VOLTAGE ACCURACY : $\pm 2\%$
- LINE REGULATION : $\pm 1.0\%$ (HL-LL)
- LOAD REGULATION(SINGLE) : $\pm 1.0\%$ (100% to 10%)
- LOAD REGULATION(DUAL) : $\pm 2\%$ (100% to 10%)
- EFFICIENCY :see table
- EMI/RFI :six-sided continuous shield

PART NO.	INPUT RANGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFFICIENCY (%)
67D-12S05R	9-18VDC	5VDC	3000mA	81
67D-12S12R	9-18VDC	12VDC	1250mA	83
67D-12S15R	9-18VDC	15VDC	1000mA	83
67D-12D12R	9-18VDC	± 12 VDC	± 625 mA	83
67D-12D15R	9-18VDC	± 15 VDC	± 500 mA	83
67D-24S05R	18-36VDC	5VDC	3000mA	82
67D-24S12R	18-36VDC	12VDC	1250mA	84
67D-24S15R	18-36VDC	15VDC	1000mA	84
67D-24D12R	18-36VDC	± 12 VDC	± 625 mA	84
67D-24D15R	18-36VDC	± 15 VDC	± 500 mA	84
67D-48S05R	36-72VDC	5VDC	3000mA	83
67D-48S12R	36-72VDC	12VDC	1250mA	84
67D-48S15R	36-72VDC	15VDC	1000mA	84
67D-48D12R	36-72VDC	± 12 VDC	± 625 mA	84
67D-48D15R	36-72VDC	± 15 VDC	± 500 mA	84

MARKINGS AND DIMENSIONS



PIN CONNECTION

PIN#	SINGLE	DUAL
1	+VIN	+VIN
2	-VIN	-VIN
3	+VOUT	+VOUT
4	No Pin	Common
5	-VOUT	-VOUT

Dimensions:inches/mm

Unless otherwise specified, all tolerances are $\pm 0.005/\pm 0.13$



87D SERIES

WIDE INPUT RANGE

DC-DC CONVERTER MOSFET 15 WATT

FEATURES

- 15WATTS ISOLATED OUTPUT
- SINGLES, DUAL AND TRIPLES
- REMOTE ON/OFF CONTROL
- EFFICIENCY 80%
- 2x2x0.52 INCHES PACKAGE
- SIX-SIDED SHIELDING
- WIDE 4:1 INPUT RANGE



ELECTRICAL SPECIFICATIONS

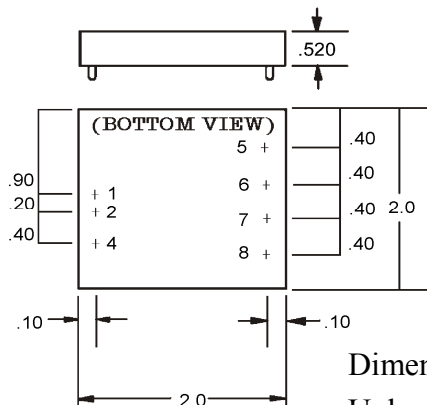
- INPUT VOLTAGE RANGE :24V nominal ...9-36V
:48V nominal ...20-72V
- INPUT FILTER :Pi Type
- OUTPUT VOLTAGE ACCURACY :±1% MAX.
- SINGLE OUTPUT ACCURACY :±1% MAX.
- DUAL +OUTPUT ACCURACY :±3% MAX.
- DUAL -OUTPUT ACCURACY :±1% MAX.
- TRIPLE 5V :±5% MAX.
12V/15V :±2% MAX.
-5V :±1% MAX.
- OUTPUT RIPPLE AND NOISE :100mVp-p MAX(20MHz B.W.)
- LINE REGULATING SINGLE/DUAL :±0.2% MAX.
(H.L TO L.L)TRIPLE :±1% MAX.
- LOAD REGULATING SINGLE/DUAL :±1% MAX.
(F.L. TO 1/4 L.) TRIPLE :±0.2% MAX.
- SHORT CIRCUIT PROTECTION :CONTINUOUS

GENERAL SPECIFICATIONS

- ISOLATION VOLTAGE : 1500VDC
- ISOLATION RESISTANCE : 10⁹ ohms
- SWITCHING FREQUENCY : 100KHz TYP.
- OPERATING TEMPERATURE RANGE :-25°C TO +71°C
- STORAGE TEMPERATURE RANGE :-55°C TO +105°C
- EMI/RFI : SIX-SIDED CONTINUOUS SHIELD
- CASE MATERIAL : BLACK COATED COPPER WITH NON-CONDUCTIVE BASE

PART NO.	INPUT VOLTAGE	OUTPUT 1 VOLTAGE	OUTPUT 2 VOLTAGE	OUTPUT 3 VOLTAGE
87D-24S05R	9-36V	5V@3A		
87D-24S12R	9-36V	12V@1.25A		
87D-24S15R	9-36V	15V@1A		
87D-24D12R	9-36V		12V@0.625A	-12V@0.625A
87D-24D15R	9-36V		15V@0.5A	-15V@0.5A
87D-24S05RT12R	9-36V	5V@1.5A	12V@0.31A	-12V@0.31A
87D-24S05RT15R	9-36V	5V@1.5A	15V@0.25A	-15V@0.25A
87D-48S05R	20-72V	5V@3A		
87D-48S12R	20-72V	12V@1.25A		
87D-48S15R	20-72V	15V@1A		
87D-48D12R	20-72V		12V@0.625A	-12V@0.625A
87D-48D15R	20-72V		15V@0.5A	-15V@0.5A
87D-48S05RT12R	20-72V	5V@1.5A	12V@0.31A	-12V@0.31A
87D-48S05RT15R	20-72V	5V@1.5A	15V@0.25A	-15V@0.25A

MARKINGS AND DIMENSION



PIN CONNECTION

Pin	Single Output	Dual Output	Triple Output
1	+Vin	+Vin	+Vin
2	-Vin	-Vin	-Vin
3	No Pin	No Pin	No Pin
4	Control(Enable)	Control(Enable)	Control(Enable)
5	N O Pin	Output 2	Output 2
6	Output 1	Com (O/P Common)	Output 1
7	-Output 1	Output 3	Com (O/P Common)
8	Trim	Trim	Output 3



WIDE INPUT VOLTAGE RANGE

87DS SERIES 15 WATTS DC-DC CONVERTER

FEATURES

- 4:1 WIDE INPUT VOLTAGES:9-36V,20-72V
- 15 WATTS (2x1.6x0.52inches) PACKAGE
- EFFICIENCY TO 82%
- PI INPUT FILTER



GENERAL SPECIFICATIONS

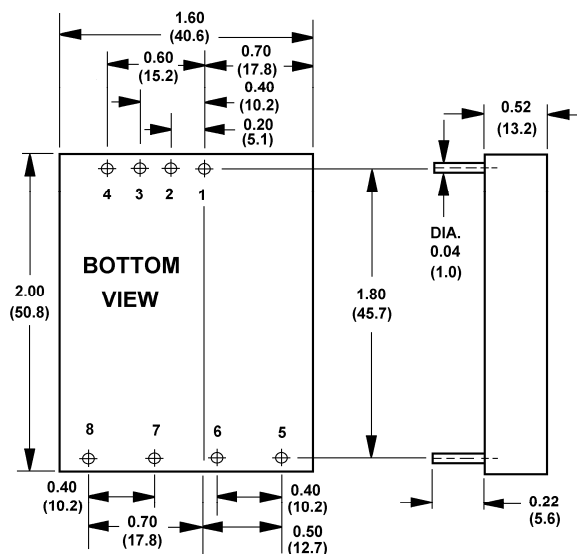
- SWITCHING FREQUENCY : 300KHz TYP.
- OUTPUT RIPPLE & NOISE : 100mVp-p(20MHz B.W.)
- ISOLATION VOLTAGE : 1500VDC
- ISOLATION RESISTANCE : 10^9 ohms
- STORAGE TEMPERATURE RANGE : -40°C TO 100°C
- OPERATING TEMPERATURE RANGE : -25°C TO +71°C
- SHORT CIRCUIT PROTECTION : CONTINUOUS
- CASE MATERIAL : BLACK COATED METAL WITH NON-CONDUCTIVE BASE

ELECTRICAL SPECIFICATIONS

- INPUT VOLTAGE RANGE :24V nominal ...9-36V
:48V nominal ...20-72
- OUTPUT VOLTAGE ACCURACY :±2%
- LINE REGULATION :±1.0%(HL-LL)
- LOAD REGULATION(SINGLE) :±1.0%(FL-NL)
- LOAD REGULATION(DUAL) :±5%(FL-NL)
- LOAD REGULATION(DUAL) :±1%(FL-1/2FL)
- EFFICIENCY :see table
- EMI/RFI :six-sided continuous shield

PART NO.	INPUT RANGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFFICIENCY (%)
87DS-24S05R	9-36VDC	5VDC	3000mA	80
87DS-24S12R	9-36VDC	12VDC	1250mA	82
87DS-24S15R	9-36VDC	15VDC	1000mA	82
87DS-24D05R	9-36VDC	±5VDC	±1500mA	80
87DS-24D12R	9-36VDC	±12VDC	±625mA	82
87DS-24D15R	9-36VDC	±15VDC	±500mA	82
87DS-48S05R	20-72VDC	5VDC	3000mA	80
87DS-48S12R	20-72VDC	12VDC	1250mA	82
87DS-48S15R	20-72VDC	15VDC	1000mA	82
87DS-48D05R	20-72VDC	±5VDC	±1500mA	80
87DS-48D12R	20-72VDC	±12VDC	±625mA	82
87DS-48D15R	20-72VDC	±15VDC	±500mA	82

MARKINGS AND DIMENSIONS



ALL DIMENSIONS IN INCHES(mm)

PIN CONNECTION

PIN#	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
3	N/C	N/C
4	Ctrl	Ctrl
5	No Pin	+Vout
6	+VOUT	Common
7	Common	-Vout
8	Trim	Trim

*Ctrl: Remote on/off Control

Dimensions:inches/mm Unless otherwise specified, all tolerances are $\pm 0.005/\pm 0.13$