

Features

Unregulated Converters

- Power Sharing
- high 5.2kVDC/1minute Isolation
- Efficiency up to 85%
- Wide Operating Temperature Range from -40°C to +90°C
- UL 60950 (Pending)

RECOM
DC/DC Converter

RxxP22005D

**2 Watt
SIP7 for
SiC Application**



Description

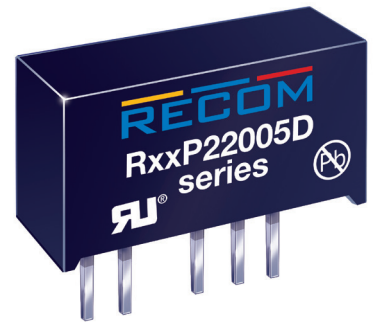
The RxxP22005D series features DC/DC converters which are especially designed for SiC mosfet drivers. The modules are available with input voltages of 5, 12, 15, or 24VDC with two asymmetric outputs of +20VDC and -5VDC. A special feature of this converter is output power sharing: the RxxP22005D can be used with equal power (asymmetrical current) or equal current (asymmetrical power) loads. The modules offer 3kVDC or 4kVDC isolation. The operating temperature range of -40C to +100°C (with derating) meets harsh environmental requirements.

Selection Guide

Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency typ. (%)	max. Capacitive Load ⁽¹⁾ (µF)
R05P22005D	5	20/-5	50/-200 +/-80	82 83	47/680
R12P22005D	12	20/-5	50/-200 +/-80	82	47/680
R15P22005D	15	20/-5	50/-200 +/-80	83 84	47/680
R24P22005D	24	20/-5	50/-200 +/-80	84 85	47/680

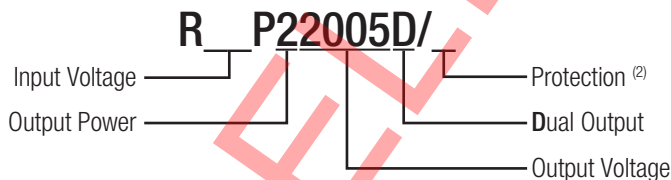
Notes:

Note1: Max. capacitive load is tested at nominal input voltage and full load.



UL US
E358085

Model Numbering



Notes:

Note2: without suffix, without Short Circuit Protection
add suffix "/P" for continuous short circuit protection

Examples:

R05P22005D = 5Vin, 20/-5Vout, without SCP function
R12P22005D/P = 12Vin, 20/-5Vout, with continuous SCP function

Specifications (measured at T_A= 25°C, nominal Input and full load after warm-up time unless otherwise noted)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range		-10%		+10%
Operating Frequency		20kHz	55kHz	
Minimum Load			0%	
Output Ripple and Noise ⁽³⁾			100mVp-p	200mVp-p

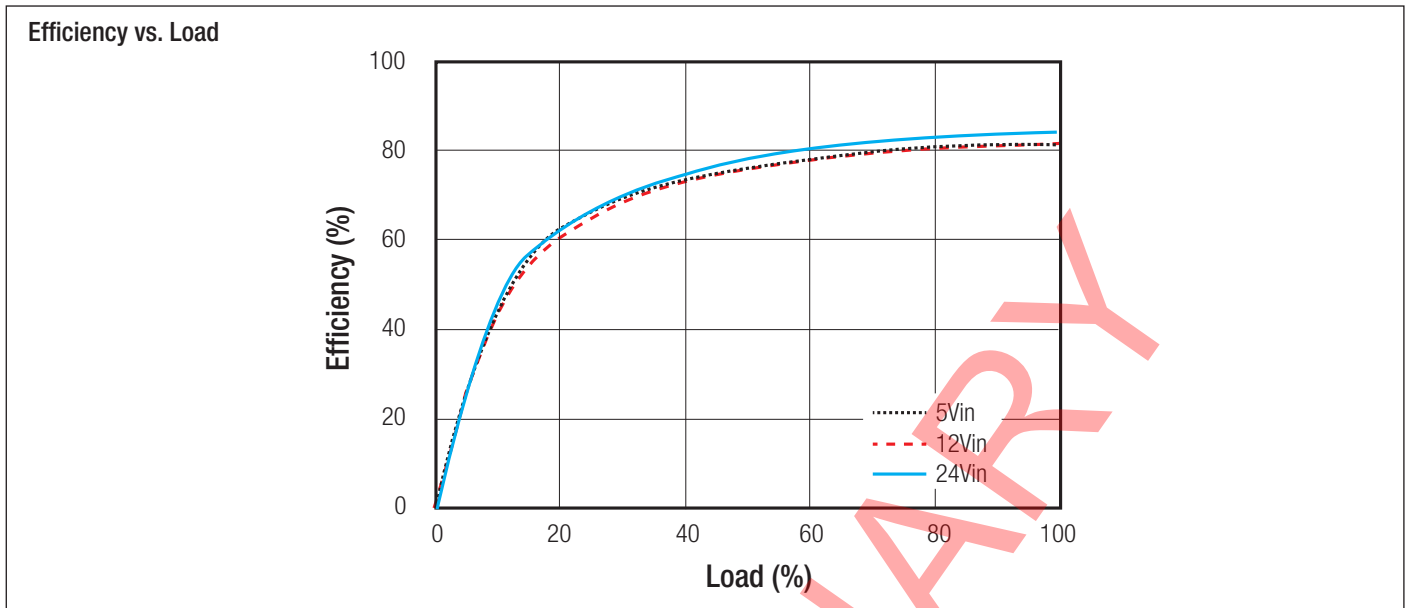
Notes:

Note3: Ripple and Noise is measured with a 20MHz bandwidth and a 0.1µF ceramic capacitor.

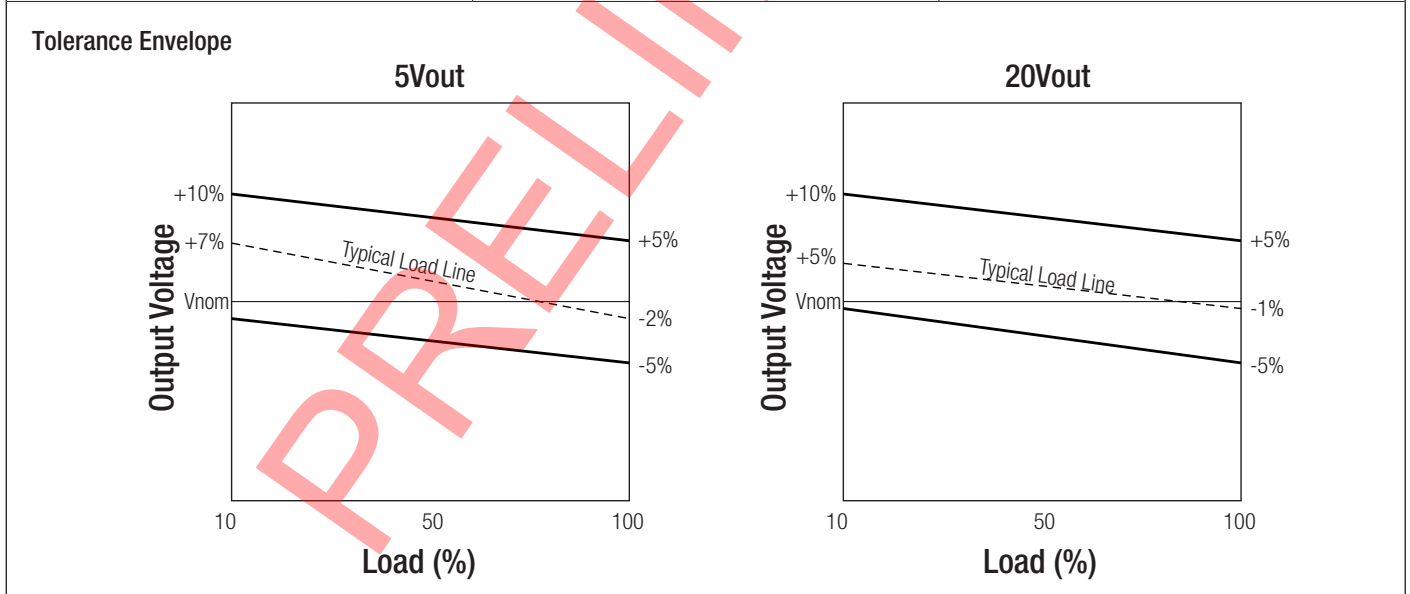
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Refer to Applications Notes

Specifications (measured at $T_A = 25^\circ\text{C}$, nominal Input and full load after warm-up time unless otherwise noted)



REGULATIONS		
Parameter	Condition	Values
Output Voltage Accuracy		$\pm 5\%$ max.
Line Voltage Regulation	low line to high line, full load and $1\%V_{in}$	$\pm 1.2\%$ typ.
Load Voltage Regulation	10% to 100% load	$\pm 6\%$ typ. / $\pm 10\%$ max.

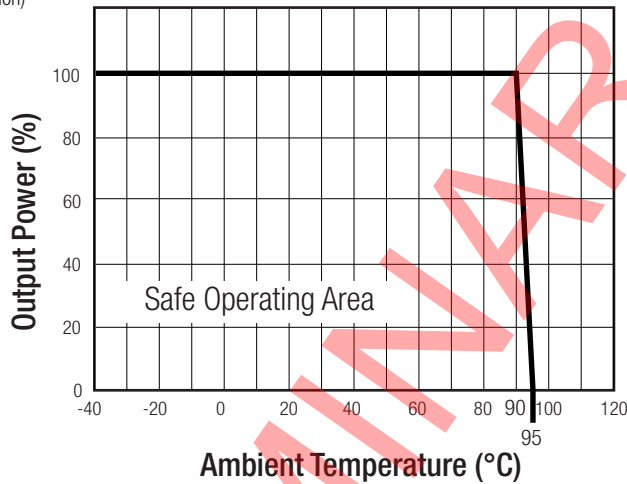


PROTECTIONS		
Parameter	Condition	Value
Short Circuit Protection (SCP)	only with "/P" suffix	continuous, automatic recovery
Isolation Voltage	I/P to O/P	5.2kVDC / 1 minute
Isolation Capacitance		10pF max.
Isolation Resistance		15G Ω min.

Specifications (measured at $T_A=25^\circ\text{C}$, nominal Input and full load after warm-up time unless otherwise noted)

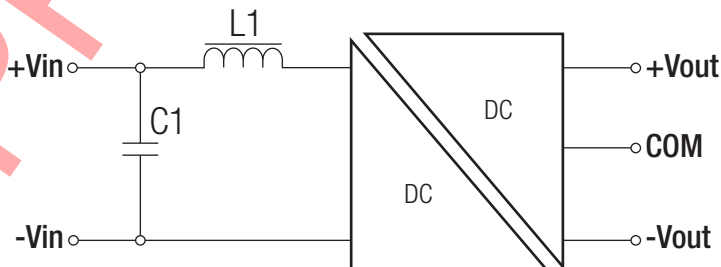
ENVIRONMENTAL		
Parameter	Condition	Value
Operating Temperature Range	free air convection, with derating	-40°C to +95°C
Operating Humidity	non-condensing	5% - 95% RH max.
Vibration		MIL-STD-202G
MTBF	according to MIL-HDBK-217F	+25°C +90°C 2079 x 10 ³ hours 723.5 x 10 ³ hours

Derating Graph
(@ nominal Vin at chamber and free air convection)



SAFETY AND CERTIFICATIONS		
Certificate Type	Report / File Number	Standard
UL General Safety	(Pending)	UL-60950-1
CAN/CSA General Safety		C22.2 No. 60950
EMI Compliance	Condition	Standard / Criterion
EMI	with external components (see filter suggestions)	EN55022, Class B

EMC Filtering - Suggestions for Class B



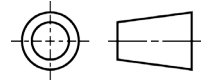
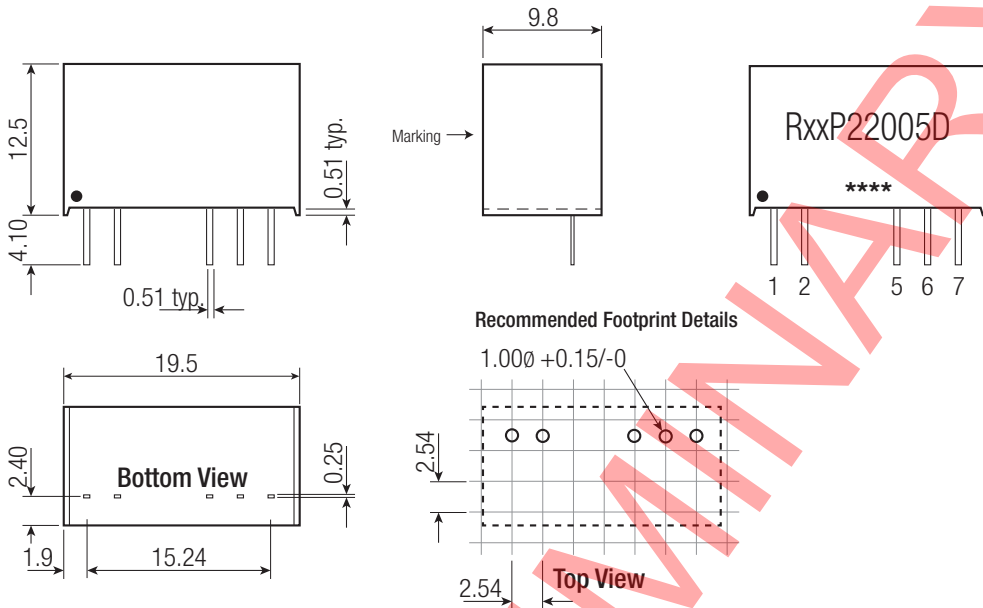
Input Voltage	C1	L1
5VDC	10µF	4.7µH
12VDC	4.7µF	22µH
15VDC	4.7µF	22µH
24VDC	2.2µF	47µH

Specifications (measured at $T_A = 25^\circ\text{C}$, nominal Input and full load after warm-up time unless otherwise noted)

DIMENSION and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	Case Potting	Plastic, (UL94V-0) Epoxy, (UL94V-0)
Package Dimension (LxWxH)		19.5 x 12.5 x 9.8mm
Package Weight		4.4g

Dimension Drawing (mm)



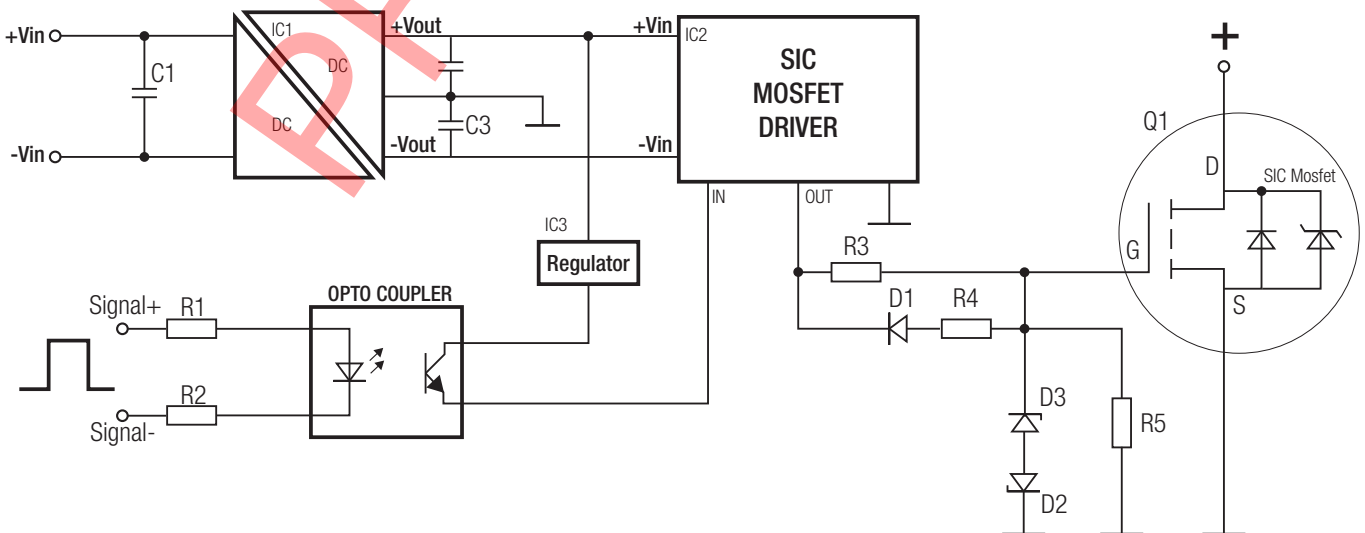
Pin Connections

Pin #	Dual
1	+Vin
2	-Vin
5	-Vout
6	Com
7	+Vout

Tolerance: xx.x= ±0.5mm
xx.xx= ±0.35mm
Pin: ±0.05mm

INSTALLATION AND APPLICATION

Typical Application Circuit



Specifications (measured at $T_A = 25^\circ\text{C}$, nominal input and full load after warm-up time unless otherwise noted)

PACKAGING INFORMATION

Packaging Dimension (LxWxH)	Tube	520.0 x 22.3 x 12.0mm
Packaging Quantity	Tube	25pcs
Storage Temperature Range		-55°C to +125°C
Storage Humidity		5% to 95% RH

PRELIMINARY