Features

Unregulated Converters

- 1kVDC Isolation
- Internal SMD Construction
- UL94V-0 Package Material
- Toroidal Magnetics
- Efficiency to 80%

ECONOLINE

DC/DC-Converter

RQS & RQD Series

0.25 Watt SMD Single & Dual Output

Selection Guide

Part Number SMD	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)
RQS-xx1.8	1.8, 3.3, 5, 9, 12, 15, 24	1.8	139	70
RQS-xx3.3	1.8, 3.3, 5, 9, 12, 15, 24	3.3	76	65-70
RQS-xx05	1.8, 3.3, 5, 9, 12, 15, 24	5	50	66-72
RQS-xx09	1.8, 3.3, 5, 9, 12, 15, 24	9	28	70-72
RQS-xx12	1.8, 3.3, 5, 9, 12, 15, 24	12	21	70-72
RQS-xx15	1.8, 3.3, 5, 9, 12, 15, 24	15	17	70-76
RQS-xx24	1.8, 3.3, 5, 9, 12, 15, 24	24	10	70-80
RQD-xx1.8	1.8, 3.3, 5, 9, 12, 15, 24	±1.8	±70	70
RQD-xx3.3	1.8, 3.3, 5, 9, 12, 15, 24	±3.3	±38	65-70
RQD-xx05	1.8, 3.3, 5, 9, 12, 15, 24	±5	±25	66-72
RQD-xx09	1.8, 3.3, 5, 9, 12, 15, 24	±9	±14	70-72
RQD-xx12	1.8, 3.3, 5, 9, 12, 15, 24	±12	±11	70-72
RQD-xx15	1.8, 3.3, 5, 9, 12, 15, 24	±15	±9	70-76
RQD-xx24	1.8, 3.3, 5, 9, 12, 15, 24	±24	±5	70-80

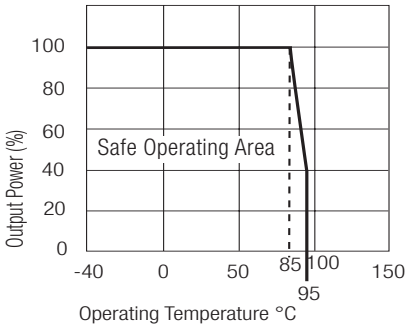
xx = Input Voltage

Specifications (Core Operating Area)

Input Voltage Range		±10%
Output Voltage Accuracy		±5%
Line Voltage Regulation		1.2%/1% of Vin max.
Load Voltage Regulation (10% to 100% full load)	1.8V, 3.3V output types 5V output type 9V, 12V, 15V, 24V output types	20% max. 15% max. 10% max.
Output Ripple and Noise (20MHz limited)		100mVp-p max.
Operating Frequency		50kHz min. / 100kHz typ. / 105kHz max.
Efficiency at Full Load		65% min. / 75% typ.
No Load Power Consumption		45mW min. / 75mW typ. / 105mW max.
Isolation Voltage Rated Working Voltage	(tested for 1 second) (long term isolation)	1.000VDC min. see Application Notes
Isolation Capacitance		25pF min. / 82pF max.
Isolation Resistance		10 GΩ min.
Short Circuit Protection		1 Second
Operating Temperature Range (free air convection)		-40°C to +85°C (see Graph)
Storage Temperature Range		-55°C to +125°C
Reflow Temperature		230°C (10 sec)
Relative Humidity	MSL Level 1	95% RH
Package Weight	RQS types	1.5g
	RQD types	2.2g
MTBF (+25°C) } *Detailed Information see Application Notes chapter "MTBF"*	using MIL-HDBK 217F	1345 x 10^3 hours
(+85°C) }	using MIL-HDBK 217F	310 x 10^3 hours

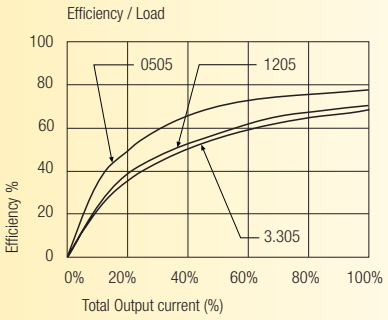
Derating-Graph

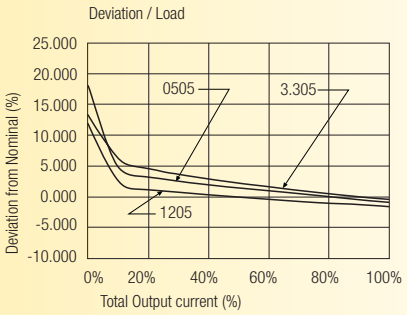
(Ambient Temperature)



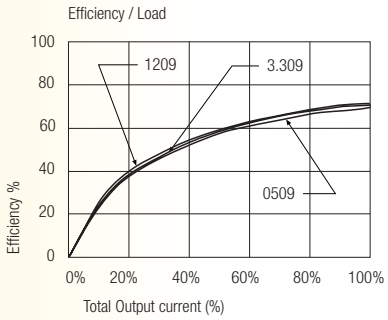
Typical Characteristics

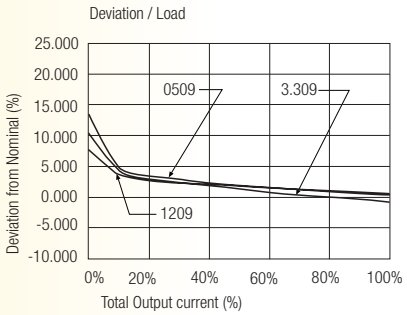
RQS/RQD-xx05



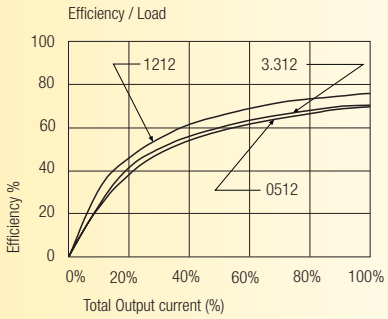


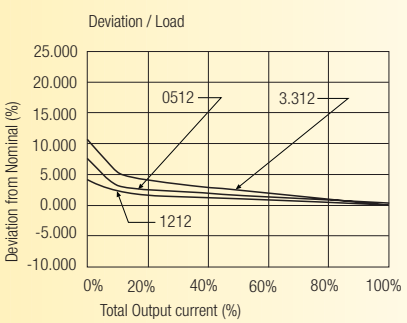
RQS/RQD-xx09



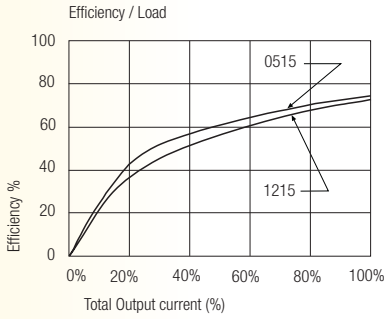


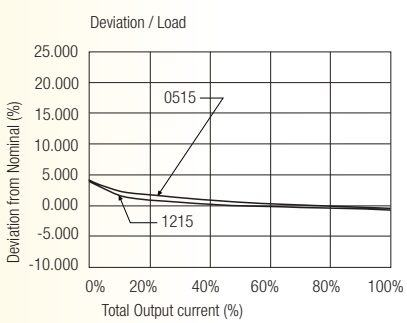
RQS/RQD-xx12





RQS/RQD-xx15

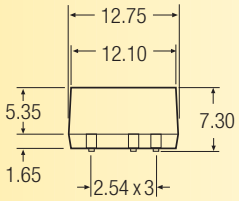


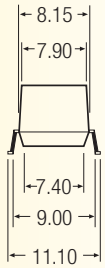


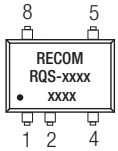
Package Style and Pinning (mm)

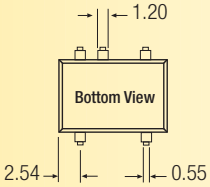
3rd angle projection

8 PIN SMD Package

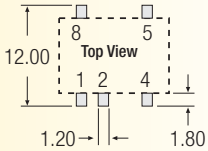








Recommended Footprint Details

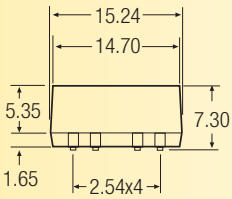


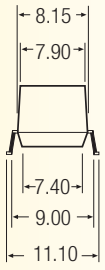
Pin Connections

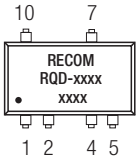
Pin #	Single
1	–Vin
2	+Vin
4	–Vout
5	+Vout
8	NC

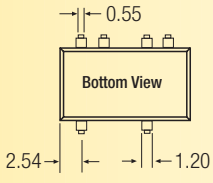
NC = No Connection
XX.X ± 0.5 mm
XX.XX ± 0.25 mm

10 PIN SMD Package

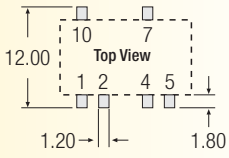








Recommended Footprint Details



Pin Connections

Pin #	Dual
1	–Vin
2	+Vin
4	Com
5	–Vout
7	+Vout
10	NC

NC = No Connection
XX.X ± 0.5 mm
XX.XX ± 0.25 mm