

## SWG75 SERIES

DC/AC single output ring generator



- Provides 75VA of ringer output power
- Typical efficiency 78%
- Short circuit protection
- Operating temperature up to 70°C
- Internal sine wave reference
- Remote ON/OFF control
- Opto-isolated cadencing ON/OFF control
- Peak output DC biased current capability
- Stand-offs for optional heatsink mounting

The SWG75 ring current generator series of DC/AC inverters offer 75VA of output power with industry standard footprints and configurations. The design is specifically tailored for PABX system applications to ensure ease of implementation in customer applications. These special features include cadencing output ON/OFF, peak output DC biased current capability at off-hook transition.

[ 2 YEAR WARRANTY ]

### SPECIFICATION All specifications are typical at nominal input, full load at 25°C unless otherwise stated

| OUTPUT SPECIFICATIONS               |   |  |
|-------------------------------------|---|--|
| Nominal voltage                     |   | 75VAC  |
| Voltage accuracy                    | No load   | ±3.0V  |
| Load regulation                     | NL to FL resistive  | ±2.0%  |
| Line regulation                     | Low line to high line                                       | ±2.0%  |
| Load impedance                      | Resistive load (See Note 1)<br>Capacitive load (See Note 1) | 75Ω<br>82 bells                                    |
| Output frequency                    |   | 25Hz ±2Hz  |
| Maximum output current              |   | 2.2A   |
| Output ripple and noise             | Switching to 20MHz  | 5V pk-pk   |
| Output ripple frequency             | Full load   | 180kHz, nominal                                    |
| Total harmonic distortion           | Resistive load  | 5.0% max.  |
| Output current                      |   | 1.0A   |
| DC offset                           |   | ±2V max.   |
| INPUT SPECIFICATIONS                |   |  |
| Input voltage range                 | 48VDC nominal   | 36 to 60VDC  |
| Input current                       |   | 3A max. @ 36VDC                                    |
| Input filter                        |   | Pi network   |
| Input undervoltage (output clipped) | 48VDC input model   | 34VDC max.   |
| Reference input impedance           |   | Internal sine-wave reference oscillator            |
| Remote ON/OFF Logic compatibility   | (See Note 4)  | Opto-isolated control inputs                       |
| Response time                       |   | <100ms and start from positive going zero crossing |

| GENERAL SPECIFICATIONS       |  |  |
|------------------------------|--|--|
| Efficiency                   | Resistive load                                   | 75% typ.                                   |
| Isolation voltage            | Input/output<br>Input/remote control             | 500VDC<br>500VDC                           |
| Isolation resistance         | Input/output                                     | 1GΩ  |
| Switching frequency          | Fixed  | 90kHz, typical                             |
| Case material                |  | Aluminium with plastic non-conductive base |
| Material flammability        |  | UL94V-0                                    |
| Weight                       | (Including heatsink)                             | 450g (15.8oz)                              |
| MTBF                         | MIL-HDBK-217F @ 25°C nominal input voltage       | 100,000 hours                              |
| ENVIRONMENTAL SPECIFICATIONS |  |  |
| Thermal performance          | Operating temperature (ambient)<br>Non-operating | See curve<br>-40°C to +85°C                |
| Relative humidity            | Non-condensing                                   | 10% to 95% RH                              |
| Altitude                     | Operating<br>Non-operating                       | 10,000 feet max.<br>30,000 feet max.       |
| Vibration                    | 5Hz to 500Hz                                     | 2.4G rms (approx.)                         |

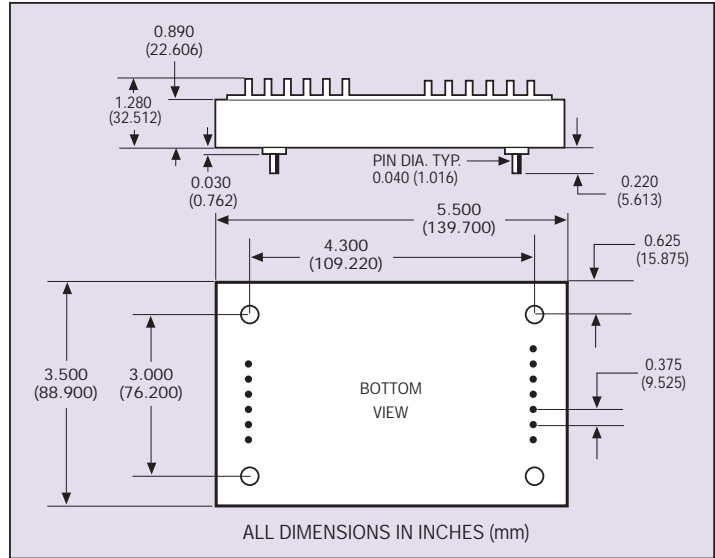
# 75VA DC/AC ring generator

| INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT FREQUENCY | OUTPUT CURRENT (RMS) | PEAK OUTPUT DC CURRENT (2) | TYPICAL EFFICIENCY | MODEL NUMBER (5) |
|---------------|----------------|------------------|----------------------|----------------------------|--------------------|------------------|
| 48VDC         | 75VAC          | 25Hz             | 1A                   | 480mA                      | 78%                | SWG75-48S75C01   |

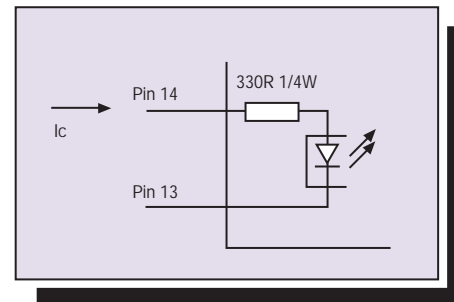
**Notes**

- 1 bell = 3kΩ in series 1.2μF, 82 bells = 36Ω in series 98μF.
- Peak output DC current is the DC biased current flowing through the output. Maximum duration is 1 second.
- Metal case (pin 7) should either be tied to +INPUT (pin 4) or -INPUT (pin 3) directly or through a capacitor (>10nF).
- Remote pins are inputs of an opto-isolator, with an internal 330Ω 1/4W resistor in series.
- SWG75-48S75C01/P has the same input and output specifications except the remote control logic is reversed.

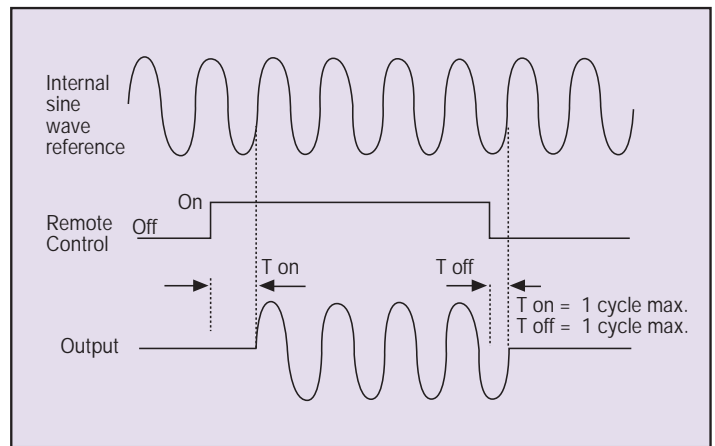
| PROTECTION                  |                         |
|-----------------------------|-------------------------|
| Short circuit protection    | Indefinite              |
| Short circuit input current | 48VDC, 80mA max.        |
| Overvoltage protection      | None                    |
| Overcurrent protection      | 2.2A peak bouncing mode |
| Undervoltage protection     | None                    |



| PIN CONNECTIONS |               |                |
|-----------------|---------------|----------------|
| PIN NUMBER      | PIN NAME      | FUNCTION       |
| 1               | No Pin        | -----          |
| 2               | No Connection | No Connection  |
| 3               | - Input       | Negative Input |
| 4               | + Input       | Positive Input |
| 5               | No Connection | No Connection  |
| 6               | No Connection | No Connection  |
| 7               | FG (3)        | Metal Case     |
| 8               | No Connection | No Connection  |
| 9               | Return        | Output Common  |
| 10              | 75V           | Output         |
| 11              | No Connection | No Connection  |
| 12              | No Connection | No Connection  |
| 13              | - Remote      | Remote Return  |
| 14              | + Remote      | Remote Input   |



| MODEL                | I <sub>c</sub> | OUTPUT |
|----------------------|----------------|--------|
| SWG75-48S75C01       | 0mA            | ON     |
|                      | 10 to 20mA     | OFF    |
| SWG75-48S75C01/P (5) | 0mA            | OFF    |
|                      | 10 to 20mA     | ON     |

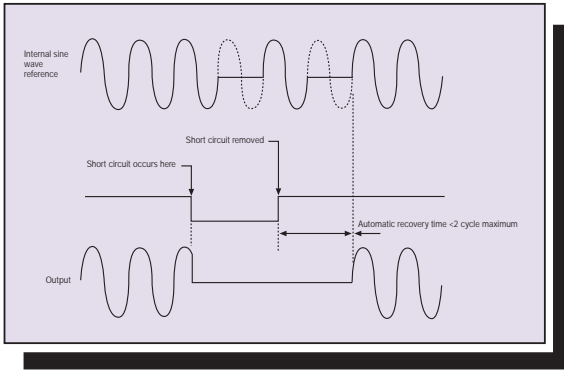


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# 75VA DC/AC ring generator

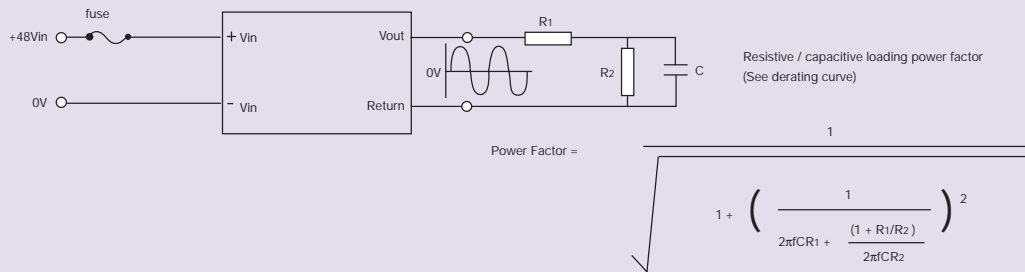
## Application notes

### 1 Automatic zero crossing recover after short circuit removed.

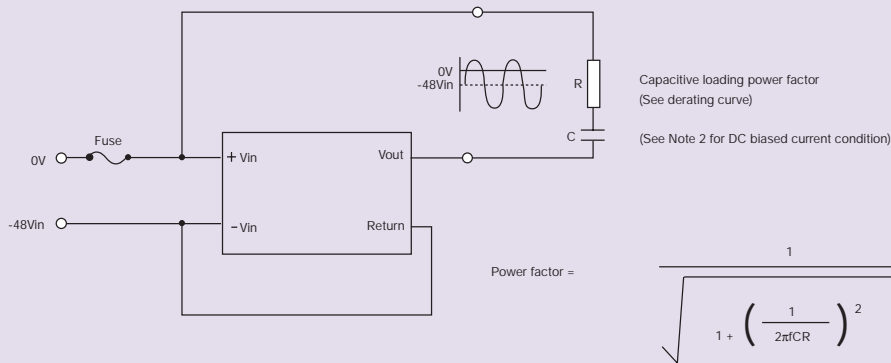


### 2 Examples of DC biased operation.

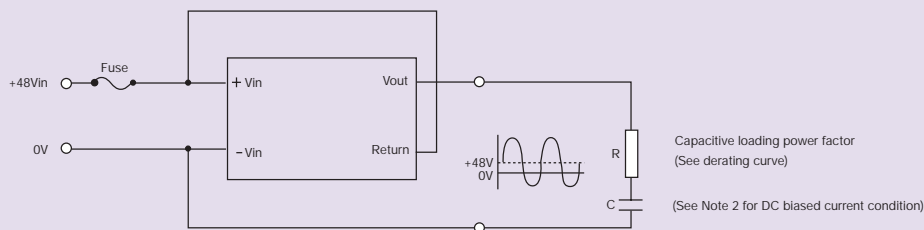
#### 2.1 Non-biased operation



#### 2.2 Negative DC Biased operation.



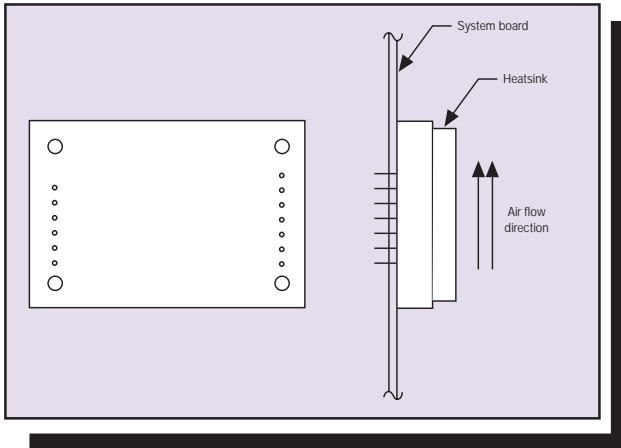
#### 2.3 Positive DC biased operation.



# 75VA DC/AC ring generator

## Application notes continued

- For optimal thermal performance conforming to derating curve, the module should be installed vertically.



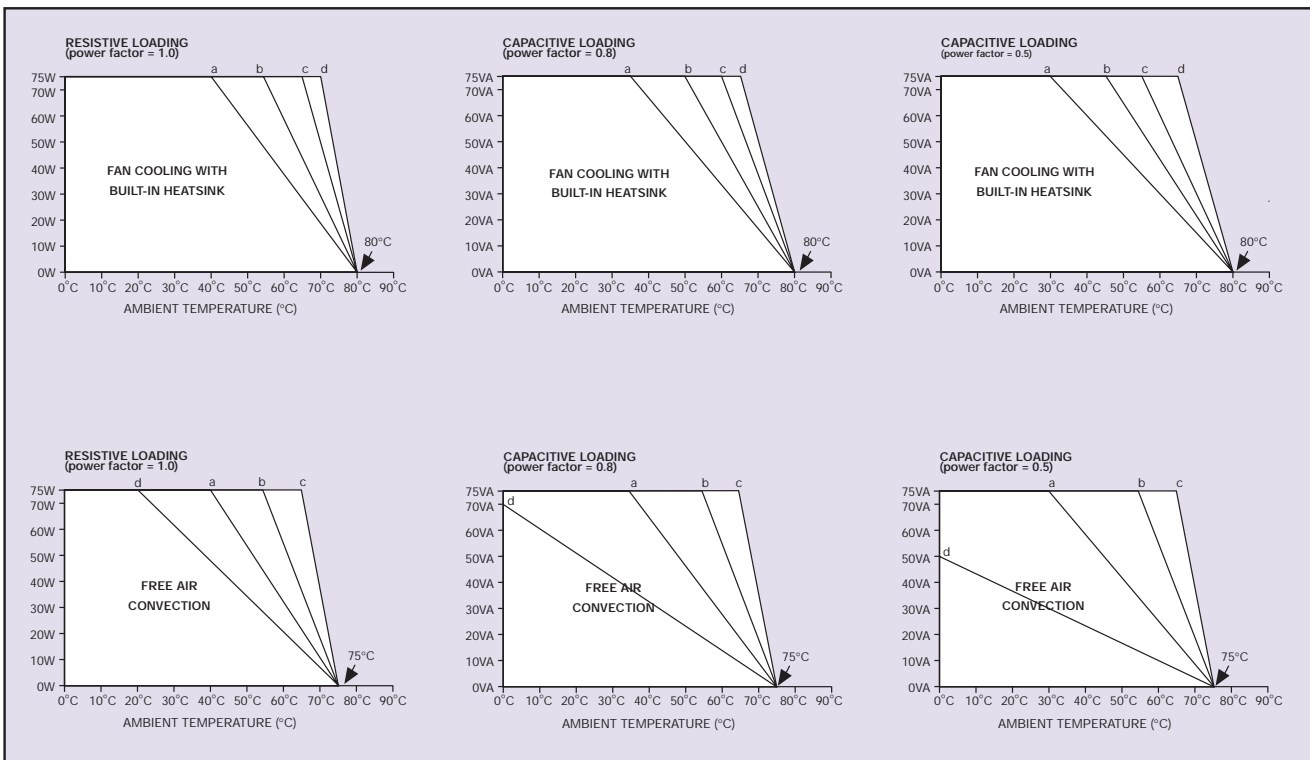
## Thermal derating curves (nominal input condition)

### Fan cooling with built-in heatsink:

- a = Free air convection
- b = 75 LFPM
- c = 225 LFPM
- d = 500 LFPM

### Free air convection

- a = Built-in heatsink
- b = Heatsink of 1°C/W
- c = Heatsink of 0.5°C/W
- d = No heatsink



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