

# **International Rectifier**

**RELIABILITY REPORT 0220**

**RBV BRIDGE SERIES**

**QUALIFICATION REPORT**

**International Rectifier Corporation Italy  
RELIABILITY LABORATORY**

# INTERNATIONAL RECTIFIER

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## 1. Introduction and Purpose:

The purpose of this qualification program is to produce test data and relevant information to confirm that the 25 Amps. RBV bridge series devices, meet the requirements for Market Introduction and IR internal Reliability Standards.

The test vehicles are IR25XB06.

The data and report are generated by IRCI Reliability Laboratory.

## 2. Issue:

The results collected in this report are sufficient to release a Final Qualification Approval of above mentioned devices.

The Final Qualification Approval is justified by environmental testing, presented in this report, which ensures that the product under consideration fulfils the requirements for Market Introduction and IRCI's reliability requirements.

**The Final Qualification is released for** part number under mentioned:

**All 25 Amp RBV Bridge series devices**

## 3. Process Description:

The product family under consideration uses RBV package and standard assembly process.

## 4. Executive Summary:

Environmental testing was performed on 3 lots.

The lot was assembled in IR25XB06.

Environmental testing included:

Temperature Cycling Test (T/C).

High Temperature Blocking Life Test (HTRB)

## 5. Environmental Stress Test Plan:

Part Number	Stress	Test Conditions	Sample Size/Lot	Lots No	Read-out Intervals
IR25XB06	T/C	- 50° C / +150°C, 200 cycles	10	3	0, 50, 100, 200 cycles
IR25XB06	HTRB	600V @ 125 <sup>0</sup> C, 1000 Hrs	10	3	0, 168, 500, 1000 hours

## 6. Criteria for qualification:

Devices are expected to perform with maximum one failure on these stresses.

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## 7. Summary of Environmental Stress Test Results:

7.1 Temperature Cycling Test (T/C)

### 7.1 TEMPERATURE CYCLING (T/C)

**Test conditions :**

Tc(min)= -50 °C  
 Tc(max)= +150 °C  
 30 minutes at each temperature extreme.

**Test Completed after**

200 Cycles

**Measured parameter**

**Failure Criteria**

$V_F @ I_{F \max}, T_{room}$

$V_F$  increase more than 10% versus initial values

$I_{rr} @ V_{rr \max}, T_{j \max}$

UBL

Part Number	Assy.Lot Number	Sample Size	No. of Test Failures @ cycles				Total Devices Failed
			0	50	100	200	
IR25XB06	F4	10	0	0	0	1	<b>1</b>
IR25XB06	F5	10	0	0	0	0	<b>0</b>
IR25XB06	F6	10	0	0	0	0	<b>0</b>

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7.2 High Temperature Blocking Life Test (HTRB)

## 7.2 HIGH TEMP. BLOCKING LIFE TEST (HTRB)

**Test conditions :**

Voltage = 600 Vpk  
Tc(max) = +125 °C

**Test Completed after**

1000 Hours

**Measured parameter**

**Failure Criteria**

Irr @  $V_{rr\ max}$ ,  $T_{j\ max}$

Irr increase more than 400% versus initial values

$V_F$  @  $I_{F\ max}$ ,  $T_{room}$

UBL

Part Number	Assy Site	LOT NO	Sample Size	Number of Test Failures @ hours				
				0	168	500	1000	Total
IR25XB06	IRINDIA	B01219-4C New (T11)	10	0	0	0	0	0
IR25XB06	IRINDIA	B011219-4C New + Pre soldering (T17)	10	0	0	0	0	0
IR25XB06	IRINDIA	K0201040024 + Pre soldering (T14)	10	0	0	0	0	0

(Refer report # 222 dated 28<sup>th</sup> may 2002)