PRODUCT / PROCESS CHANGE NOTIFICATION

PCN-000295 - Minor

Date: 03/18/2015

☐	Semtech Corporation, 200 Flynn Road, Camarillo CA 93012
☐	Semtech Canada Corporation, 4281 Harvester Road, Burlington, Ontario L7L 5M4 Canada
☐	Semtech Irvine, 5141 California Ave., Suite 100, Irvine CA 92617
☐	Semtech Neuchatel Sarl, Route des Gouttes d'Or 40, CH-2000 Neuchatel Switzerland
☐	Nanotech Semiconductor, Semtech Corporation, 2 West Point Court, Bristol, United Kingdom, BS32 4PY
☒	Semtech Corpus Christi SA de CV, Carretera Matamorros Edificio 7, Reynosa, Tamaulipas, Mexico 88780
☐	

Change Details

Part Number(s) Affected:
SBMA2F

Customer Part Number(s) Affected: ☒ N/A
Semtech part number does not appear on customer AVLs

Description, Purpose and Effect of Change:

Lead Frame (222000625) will not be available for the assembly SBMA2F.
No supplier will be able to produce or get this specific part number (Lead frame).
As an alternative for this part there is a Tin lead bus bar AWG 20 (215012503), which is a standard replacement being used in a similar assemblies (like SBR2F).
This 215012503 can be used instead.

Change Classification	☐ **Major** ☒ **Minor**	**Impact to Form, Fit, Function**	☐ **Yes** ☒ **No**
Impact to Data Sheet	☐ **Yes** ☒ **No**	**New Revision or Date**	☒ **N/A**

Impact to Performance, Characteristics or Reliability:

NO IMPACT TO THE PERFORMANCE, RELIABILITY AND OTHER CHARACTERISTICS.

Implementation Date	**6/18/2015**	**Work Week**	**1525**
Last Time Ship (LTS) **Of unchanged product**	**6/18/2015**	**Affecting Lot No. / Serial No. (SN)**	**M067570**
Sample Availability	**3/10/2015**	**Qualification Report Availability**	**3/10/2015**

Supporting Documents for Change Validation/Attachments:

- Qualification Report *PRODDOC009139*
- Semtech Catalog Datasheet *3SBM*05F thru 3SBM*4F*

Issuing Authority

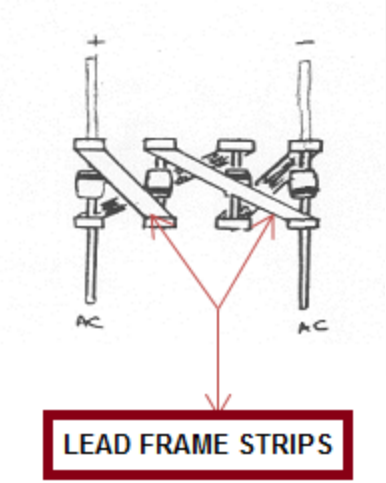
Semtech Business Unit:	PHR-Legacy	
Semtech Contact Info:	Pat Sanchez Semtech Corporation Sr. Manager, Corporate Quality 200 Flynn Road Camarillo, CA 93012 Psanchez@semtech.com Office: (805) 480-2074 Fax: (805) 498-3804	

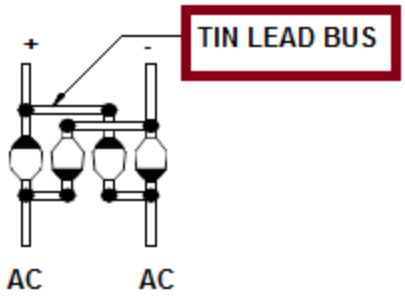
FOR FURTHER INFORMATION & WORLDWIDE SALES COVERAGE: http://www.semtech.com/contact/index.html#support

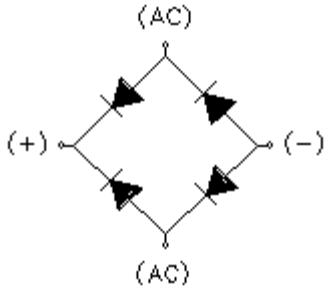
SBMA2F:CHANGE FROM LEAD FRAME(222000625) TO TIN LEAD BUS BAR (215012503)

Reason For Change:

Lead Frame(222000625) is not available for Assy SBMA2F. As an alternative for this part there is a Tin lead bus bar AWG 20 (215012503) that is a standard replacement being used in a similar Assy SBMA2F (SBR2F) can be used instead

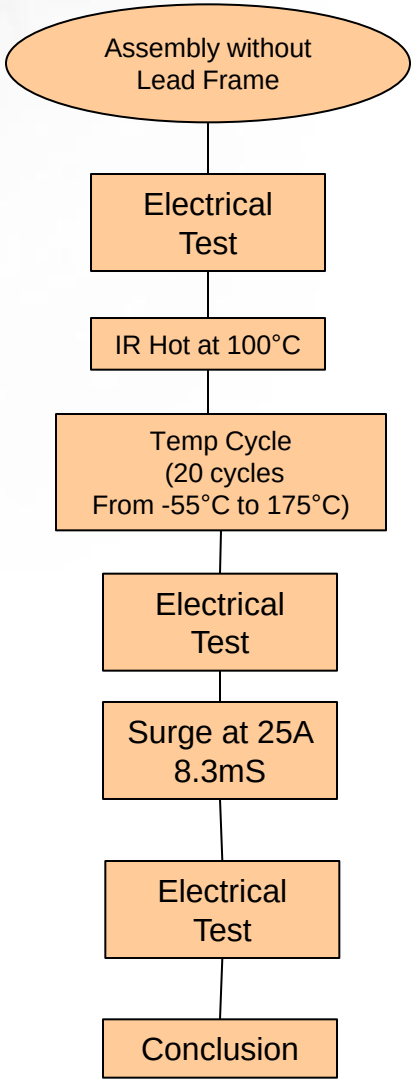






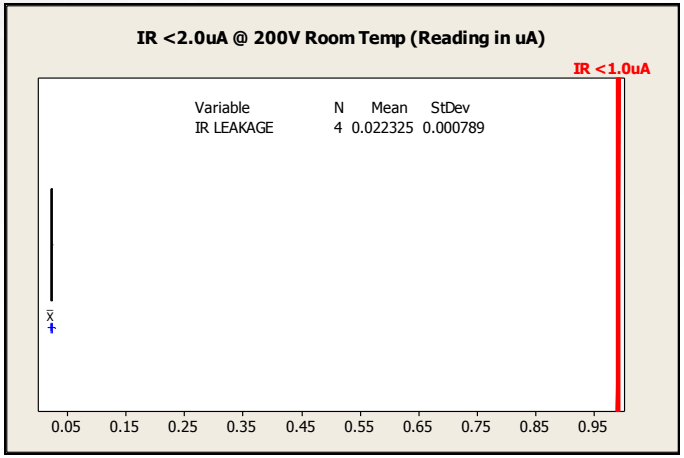
SCHEMATIC DIAGRAM

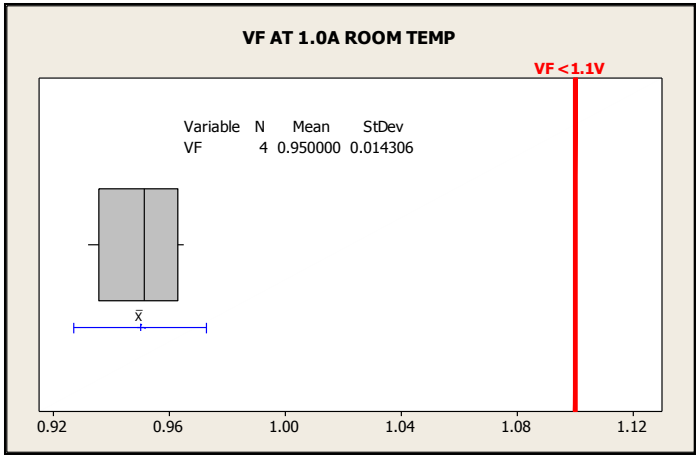
PLAN TO VALIDATE THE CHANGE

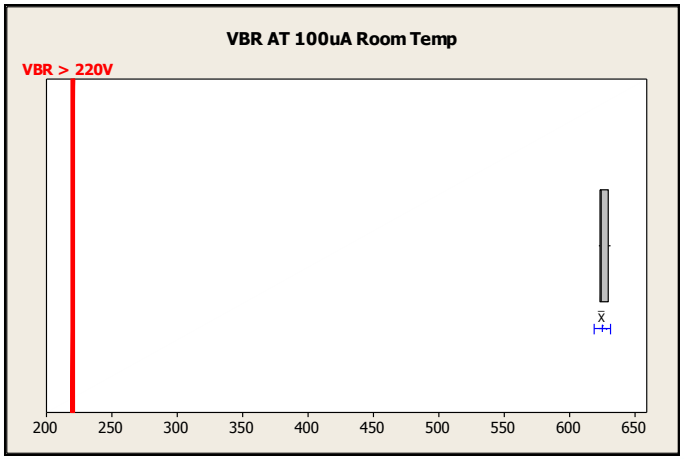


Electrical Data at Room Temp

Test		2	3	4	5
Item		POLA	IR LEAKAGE	VF	VBR
Limit		2.000 V	< 1.000uA	<1.100 V	>220.0 V
Bias 1			AT 200 V	AT 1.00 A	AT 100 uA
Time	BIN GOOD	5.000ms	20.00ms	8.300ms	20.00ms
1	5	9.999	0.0214uA	0.932mV	623.1V
2	5	9.999	0.0227uA	0.965mV	622.2V
3	5	9.999	0.0232uA	0.957mV	630.7V
4	5	9.999	0.022uA	0.946mV	623.9V

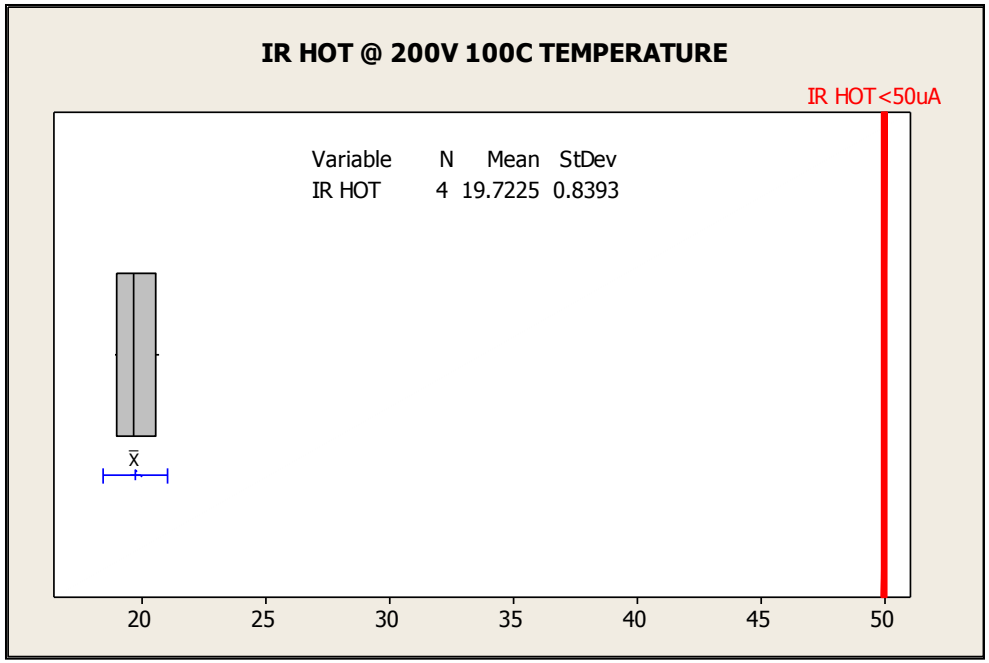






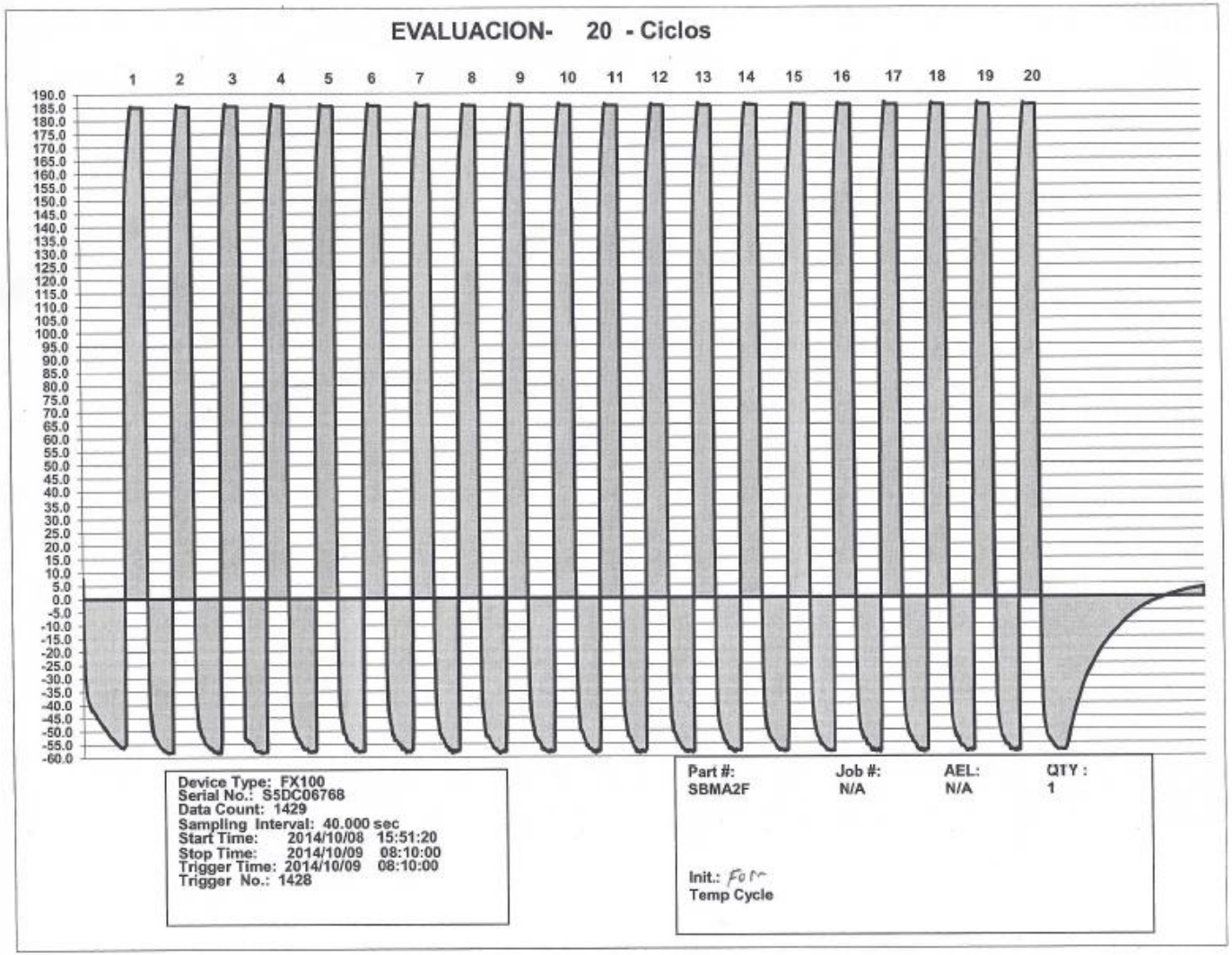
IR HOT at 100°C

Test		2	3
Item		POLA	IR LEAKAGE
Limit		2.000 V	50.00uA
Bias 1		IAK 50.0uA	AT 200 V
Bias 2			
Time	BIN GOOD	5.000ms	20.00ms
1	4	9.999	20.21uA
2	4	9.999	19.1uA
3	4	9.999	20.65uA
4	4	9.999	18.93uA



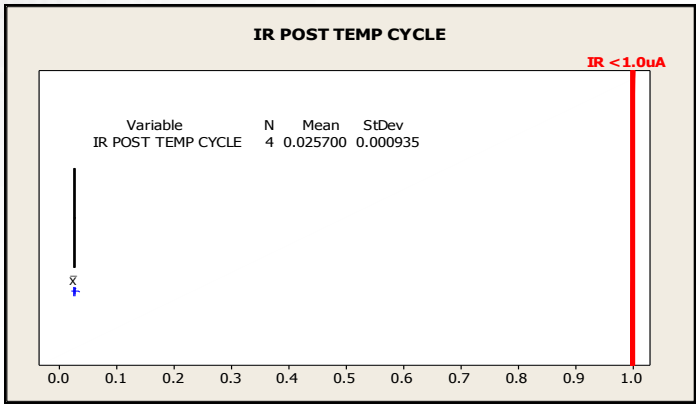
TEMP CYCLE:

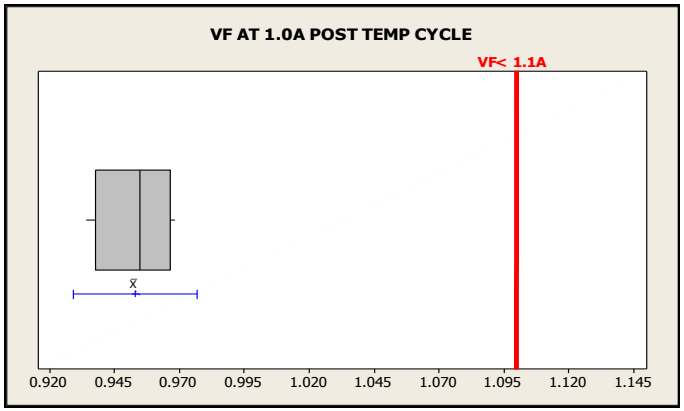
Low Temp= -55° C
High Temp= 175°C
Cycles = 20
Time= > 10min

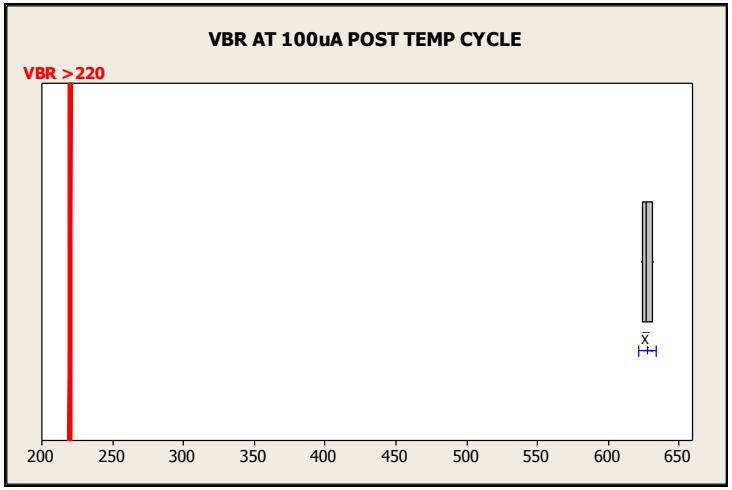


Electrical Test Post Temp Cycle

Test		2	3	4	5
Item		POLA	IR	VF	VBR
Limit		2.000 V	< 1.000uA	<1.100 V	>220.0 V
Bias 1			AT 200 V	1.00 A	AT 100 uA
Time	BIN GOOD	5.000ms	20.00ms	8.300ms	20.00ms
1	5	9.999	0.0246uA	0.934mV	623.5V
2	5	9.999	0.0253uA	0.968mV	624.9V
3	5	9.999	0.0267uA	0.961mV	629.4V
4	5	9.999	0.0262uA	0.948mV	631.8V

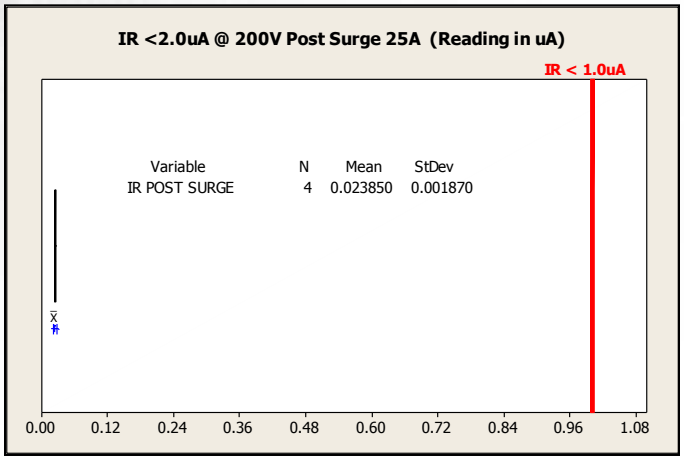


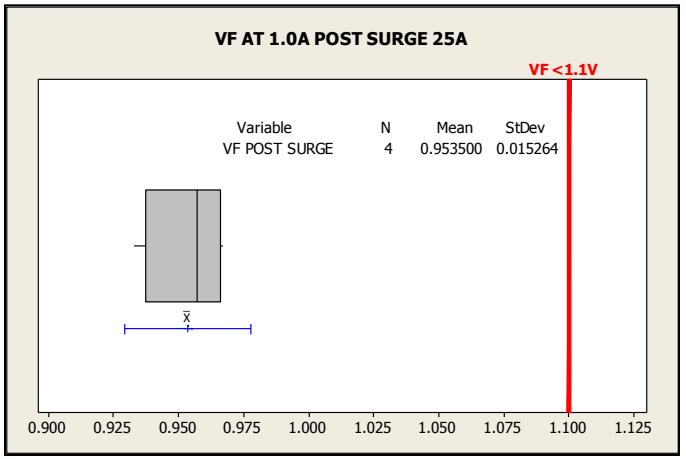


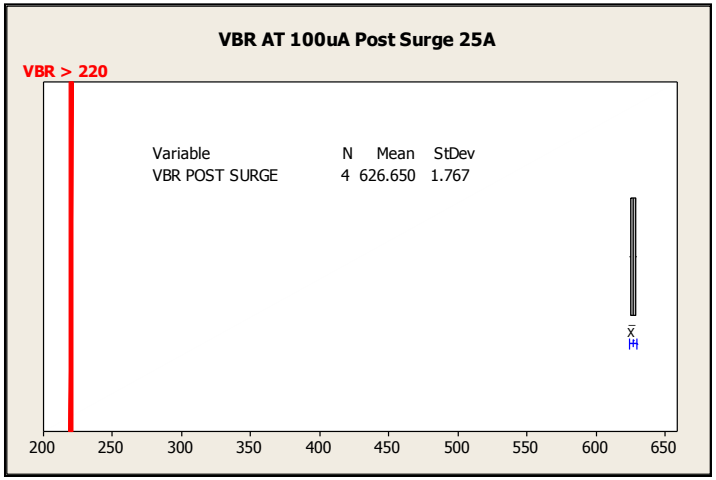


Electrical Test Post Surge at 25A

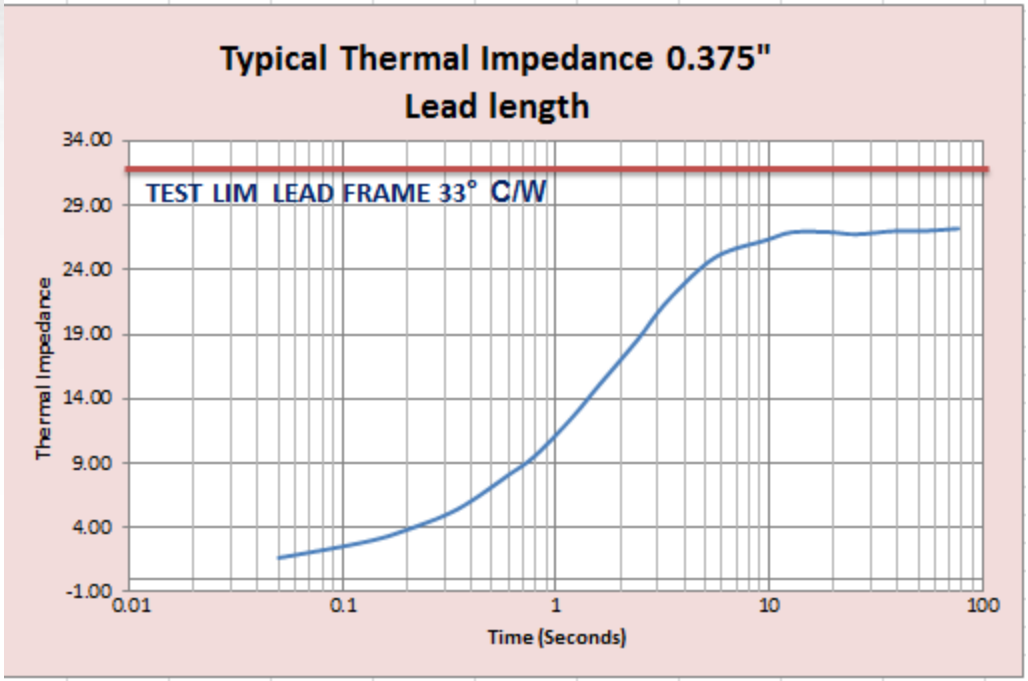
Test		2	3	4	5
Item		POLA	IR	VF	VZ
Limit		2.000 V	< 1.000uA	<1.100 V	>220.0 V
Bias 1			AT 200 V	1.00 A	AT 100 uA
Time	BIN GOOD	5.000ms	20.00ms	8.300ms	20.00ms
1	5	9.999	0.0229uA	0.933mV	624.5V
2	5	9.999	0.0234uA	0.967mV	626.9V
3	5	9.999	0.0225uA	0.963mV	626.4V
4	5	9.999	0.0266uA	0.951mV	628.8V







Thermal Resistance



Conclusion

SUMMARY							
		Working Reverse Voltage	1 Cycle Surge Current IFSM Tp= 8.3mS	Repetitive Surge Current IFSM	Reverse Leakage Current IR @ VRWM		Forward Voltage VF @ 1A/Leg
		VRWM	AT 25° C	AT 25° C	AT 25° C	AT 100° C	AT 25° C
Lead Type	Device Type	Volts	Amps	Amps	µA	µA	Volts
Lead Frame	SBMA2F	200	25A	10	1.0uA	50uA	1.1
Tin Lead Bus	SBMA2F	200	25A	10	~ 27nA	~ 19.7uA	~ 0.953V

Base on the executed tests for the change validation from the lead frame to Tin Lead; it was determinate that the implementation of this change of lead has no impact in the electrical performance of the product SBMA2F

January 16, 1998

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- Subminiature design
- Three lead configurations
- Fast reverse recovery time

QUICK REFERENCE DATA

- V_R = 50V - 400V
- I_F = 3.0A
- I_R = 2.0 µA
- t_{rr} = 150nS

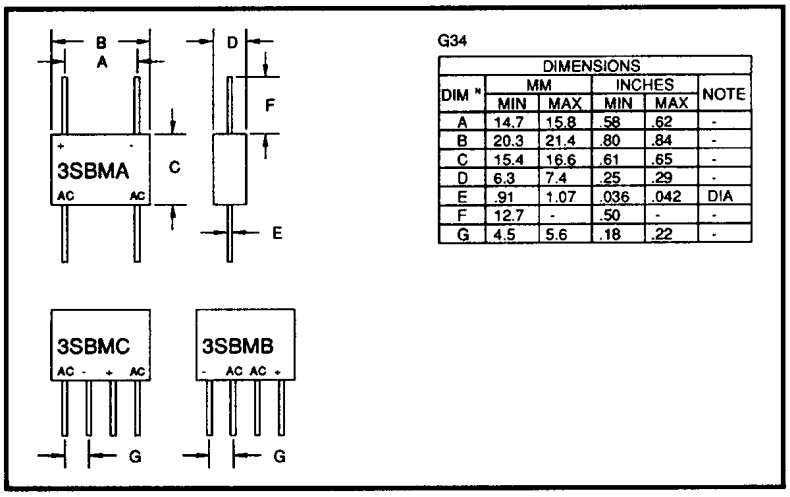
ABSOLUTE MAXIMUM RATINGS & CHARACTERISTICS

Device Type	Working Reverse Voltage V_{RWM}	Average Rectified Current $I_{F(AV)}$ @ 55°C	Average Rectified Current $I_{F(AV)}$ @ 100°C	1 Cycle Surge Current I_{FSM} t_p = 8.3mS @ 25°C	Repetitive Surge Current I_{FRM} @ 25°C	Reverse Leakage Current I_R @ V_{RWM} @ 25°C	Reverse Leakage Current I_R @ V_{RWM} @ 100°C	Forward Voltage drop V_F @ 3A/leg @ 25°C	Reverse Recovery Time[1] t_{rr} @ 25°C
	Volts	Amps	Amps	Amps	Amps	µA	µA	Volts	nS
3SBM*05F	50	3.0	1.5	150	25	2.0	40	1.1	150
3SBM*1F	100	3.0	1.5	150	25	2.0	40	1.1	150
3SBM*2F	200	3.0	1.5	150	25	2.0	40	1.1	150
3SBM*4F	400	3.0	1.5	150	25	2.0	40	1.1	150

* Add A, B, C for desired circuit configuration (see Mechanical outline)

[1] Measured on discrete devices prior to assembly

MECHANICAL



G34

DIM	DIMENSIONS MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	14.7	15.8	.58	.62	-
B	20.3	21.4	.80	.84	-
C	15.4	16.6	.61	.65	-
D	6.3	7.4	.25	.29	-
E	.91	1.07	.036	.042	DIA
F	12.7	-	.50	-	-
G	4.5	5.6	.18	.22	-

January 16, 1998

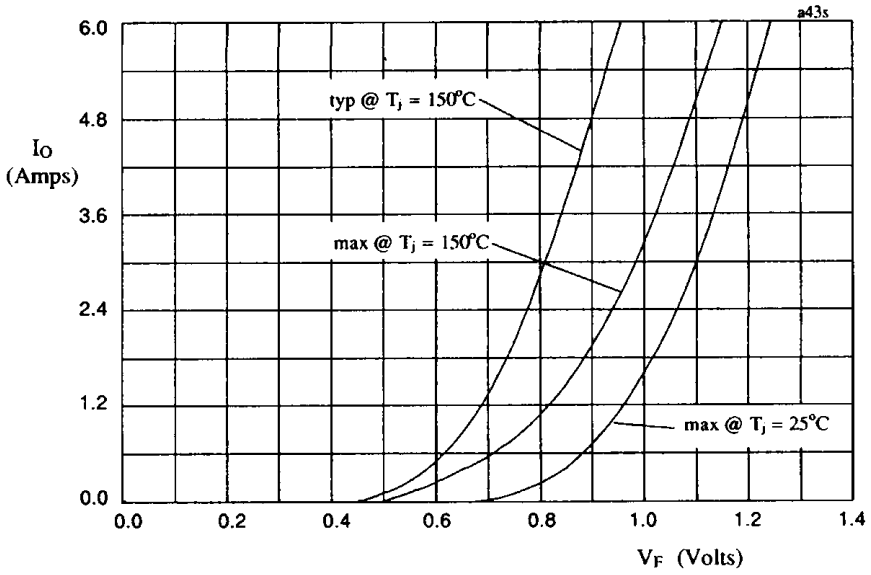


Fig 1. Forward voltage drop against output current per leg

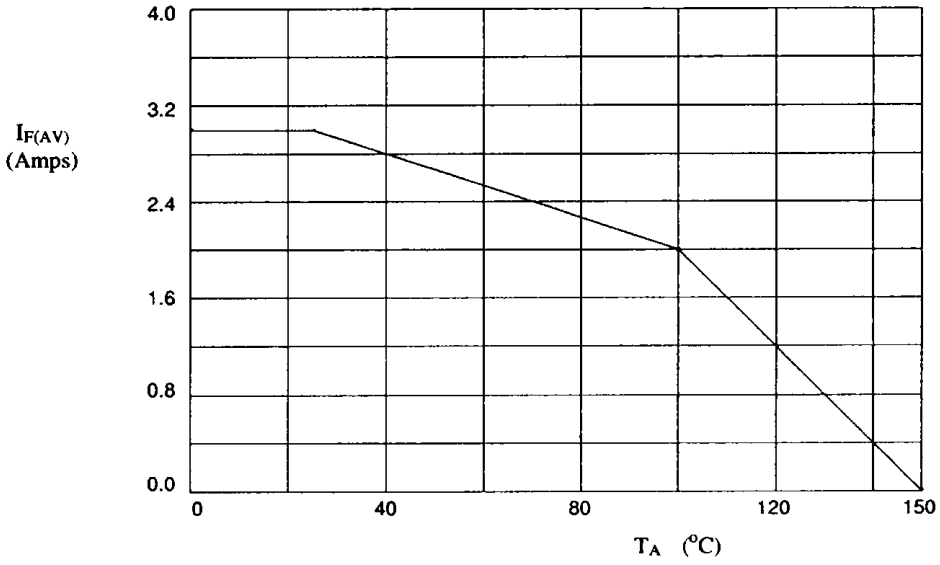


Fig 2. Maximum average forward current against ambient temperature.