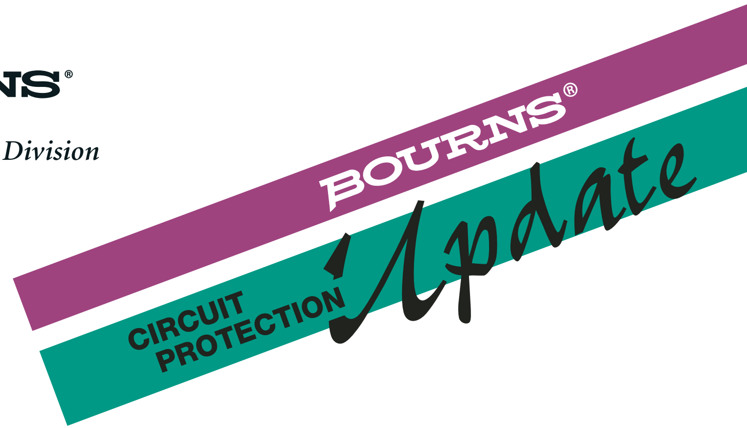
Circuit Protection Division

October, 2005



Bourns Manufacturers Representatives
Corporate Distributor Product Managers
Americas Sales Team
Asia Sales Team
Europe Sales Team

Thyristor Surge Protector Product Change Notification

PCN Tracking Number 38 -
Solder Composition Change - SMA & SMB Packages

Bourns strives to continuously improve its manufacturing processes and package technology by introducing process and material enhancements when appropriate. Wherever possible materials are standardized to minimize the opportunity for errors.

This change notification covers a change to solder paste metal content composition from Sn10Pb88Ag2 to Sn5Pb92.5Ag2.5 for products assembled in SMA and SMB packages. The solder forms the connection between chip metallization and copper lead frame components in SMA/SMB packages.

	Composition %			Solidus	Liquidus
	Sn	Pb	Ag	°C	°C
Sn10Pb88Ag2	10	88	2	284	292
Sn5Pb92.5Ag2.5	5	92.5	2.5	287	294

Products Affected by the Change:
All overvoltage protection products assembled in the SMA and SMB are affected. Products with package code suffixes of AJ, AJR, BJ and BJR will be changed. For lead (Pb) free products, the corresponding codes are AJ-S, AJR-S, BJ-S and BJR-S.

Surface Mount Packages

Existing Part No	Package	Lead Free	RoHS Compliant	Lead Free Product Part Number Suffix -S or S
TISP® Products				
TISP4xxxL1AJR	SMA	Yes	Yes	TISP4xxxL1AJR-S
TISP4xxxL3AJR	SMA	Yes	Yes	TISP4xxxL3AJR-S
TISP4xxxM3AJR	SMA	Yes	Yes	TISP4xxxM3AJR-S
TISP43xxMMAJR	SMA	Yes	Yes	TISP43xxMMAJR-S
TISP4xxxL1BJR	SMB	Yes	Yes	TISP4xxxL1BJR-S
TISP4xxxL3BJR	SMB	Yes	Yes	TISP4xxxL3BJR-S
TISP4xxxM3BJR	SMB	Yes	Yes	TISP4xxxM3BJR-S
TISP43xxMMBJR	SMB	Yes	Yes	TISP43xxMMBJR-S
TISP4xxxH1BJR	SMB	Yes	Yes	TISP4xxxH1BJR-S
TISP4xxxH3BJR	SMB	Yes	Yes	TISP4xxxH3BJR-S
TISP4xxxH4BJR	SMB	Yes	Yes	TISP4xxxH4BJR-S
TISP4AxxxH3BJR	SMB	Yes	Yes	TISP4AxxxH3BJRS
TISP4CxxxxH3BJR	SMB	Yes	Yes	TISP4CxxxH3BJRS
TISP5xxxH3BJR	SMB	Yes	Yes	TISP5xxxH3BJR-S
TISP1xxxH3BJR	SMB3	Yes	Yes	TISP1xxxH3BJR-S
TISP3xxxT3BJR	SMB3	Yes	Yes	TISP3xxxT3BJR-S

Reason for the Change:
Continuous quality and technology improvement.

Product Labeling:
There will be no change to the product labeling.

Identification of the Changed Product:
Bourns maintains traceability back to source wafer lots for all products.

Implementation Date:
Shipments of finished goods including the solder composition changes are expected to commence in December 2005.

Date Code Product will Include this Processing will be:
50

Impact on Form, Fit, Function and Reliability:
None

Qualification Plan:
Following page.

Last Date of Manufacture of Unchanged Product:
December 2005

Qualification Information as Follows:

Die Technology	Thyristor Overvoltage Protector
Die Name	As Results Table (Row 2)
Die size (mil)	As Results Table (Row 3)
Top Metal	Al + NiAu
Back Metal	Al + NiAu
Assembly Site	Shanghai Seefull Electronics Co, PRC
Pins/Package	2/3 SMB & 2 SMA
Mold Compound	Sumitomo EME 1100H
Die Attach	This Change
Clip Attach	This Change
L/F Material	Copper
Marking	Laser
Termination Finish	Matte Sn or PbSn

Qualification Tests:

Stress Test/Conditions (1)	QSS (2)	Standard	Method	SS/Accept
HTRB, 150 °C, 100 V, 1000 h	009-101	MIL STD 883	1015	129/1
85 °C/85 % RH, 50 V, 1000 h	009-102	JEDEC STD 22	A101	129/1
Temperature Cycle -65/+150 °C, 200cs	009-104	MIL STD 883	2031	129/1
Bond Strength, 300 g Min (3)	-	-	-	20/0

Notes:
1. Mechanical/Package Requirements qualified by similarity with existing product.
2. QSS Specifications are Bourns Internal Qualification Standards.
3. Vertical Pull Test.

Qualification Results:

		Lot 1	Lot 2	Lot 3	Lot 4
	Product Name:	**4015L1**	**4080M3**	**4300M3**	**4350H3**
	Chip Type:	**LT401LQ**	**TA208LQ**	**TA230LQ**	**TW435PQ**
	Chip Size:	**56 x 56**	**65 x 65**	**65 x 65**	**94 x 81**
	Package:	**SMB**	**SMB**	**SMB**	**SMB**
HTRB		129/0	129/0	129/0	129/0
85 °C/85 % RH		129/0	129/0	129/0	129/0
Temperature Cycle		129/0	129/0	129/0	129/0
Bond Strength		10/0	10/0	10/0	10/0

Notes:
1. Mechanical/Package Requirements qualified by similarity with existing product.
2. QSS Specifications are Bourns Internal Qualification Standards.
3. Vertical Pull Test.

Stress Test Completion Date:
August 2005