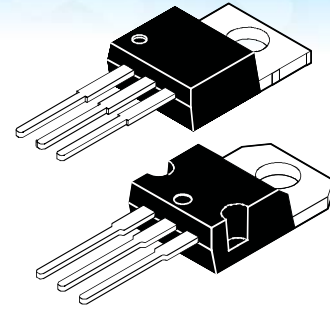


# Product Update Memo

## CIRCUIT PROTECTION PRODUCTS

February, 2006

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



### TO-220 Packaged Transistor, Thyristor & Overvoltage Protection Product Change Notification

### PCN Tracking Number BLBF39 - Mold Compound Change

This change notification covers a change to the epoxy mold compound used for encapsulation of TO-220 products assembled by PSI Technologies Inc, Manila, Philippines.

The change is:

From: **MP150SG**, manufactured by Nitto

To: **KTMC-1030NAP**, manufactured by KCC Corporation Co., Korea

#### Products Affected by the Change:

All products assembled in TO-220 package are affected. These include catalog power transistors, thyristors, overvoltage protectors and customer specific products.

#### Reason for the Change:

Rationalization of mold compounds in the assembly/test site.

#### Product Labeling:

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 new mold compound are expected to commence in March 2006.

#### Commencing Date Code:

612

#### Impact on Form, Fit, Function and Reliability:

There is no impact. KTMC-1030NAP is recognized by UL and listed in E106817. The flammability rating is V-O.

**Qualification Plan:**

Following page.

**Last Date of Manufacture of Unchanged Product:**

March 2006

**Qualification Information as Follows:**

|                    |  |
|--------------------|--|
| Die Technology     | Bipolar Transistor/Thyristor           |
| Die Name           | As Qual Plan Table (Row 2)             |
| Top Metal          | Al                                     |
| Back Metal         | AlTiNiAu                               |
| Assembly Site      | PSI, Technologies, Manila, Philippines |
| Pins/Package       | 3/TO-220                               |
| Mold Compound      | KTMC-1030NAP                           |
| Die Attach         | Solder (>88% Pb)                       |
| Wire Bond          | Aluminum                               |
| L/F Material       | Copper                                 |
| Marking            | Laser                                  |
| Termination Finish | Hot Dipped SnAgCu                      |

**Qualification Tests:**

| Stress Test/Conditions               | QSS (1) | Standard     | Method | SS/Accept |
|--------------------------------------|---------|--------------|--------|-----------|
| HTRB, 150 °C, 1000 h with bias       | 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  | 1010   | 129/1     |
| Solder Heat                          | 009-106 | MIL STD 750  | 2031   | 22/0      |
| Lead Pull                            | 009-110 | MIL STD 883  | 2004   | 22/0      |

Notes:

1. QSS Specifications are Bourns Internal Qualification Standards.

**Qualification Plan:**

|                          | <b>Lot Number:</b>         | <b>Lot 1</b>      | <b>Lot 2</b>      | <b>Lot 3</b>     |
|--------------------------|----------------------------|-------------------|-------------------|------------------|
|                          | <b>Product Name:</b>       | <b>TIP135-S</b>   | <b>TIPL760A-S</b> | <b>TIC225M-S</b> |
|                          | <b>Product Technology:</b> | <b>Transistor</b> | <b>Transistor</b> | <b>Thyristor</b> |
|                          | <b>Die Name:</b>           | <b>SD135HQ</b>    | <b>PL741HY</b>    | <b>YS307HQ</b>   |
| <b>HTRB</b>              |                            | 65/0              | 65/0              | 65/0             |
| <b>85 °C/85 % RH</b>     |                            | 65/0              | 65/0              | 65/0             |
| <b>Temperature Cycle</b> |                            | 65/0              | 65/0              | 65/0             |
| <b>Solder Heat</b>       |                            | 12/0              | 12/0              | 12/0             |
| <b>Lead Pull</b>         |                            | 12/0              | 12/0              | 12/0             |

**Stress Test Completion Date:**

June 2006

### TO-220 Parts Sold

|          |          |          |          |           |          |           |           |          |
|----------|----------|----------|----------|-----------|----------|-----------|-----------|----------|
| ATOM-A   | BD244    | BD650-S  | BD901-S  | BDW94-S   | BF67     | R3680-S   | TIC225N   | TIP127-S |
| ATOM-A-S | BD244A   | BD651    | BD902    | BDX33     | BF67-S   | TIC106D   | TIC225N-S | TIP130   |
| BD239    | BD244A-S | BD651-S  | BD902-S  | BDX33A    | BU406    | TIC106D-S | TIC226D   | TIP130-S |
| BD239A   | BD244B   | BD652    | BD903    | BDX33A-S  | BU406-S  | TIC106M   | TIC226D-S | TIP131   |
| BDX34C-S | BD244B-S | BD652-S  | BD903-S  | BDX33B    | BU446    | TIC106M-S | TIC226M   | TIP131-S |
| BD239A-S | BD244C   | BD653    | BD904    | BDX33B-S  | BU446-S  | TIC106N   | TIC226M-S | TIP132   |
| BD239B   | BD244C-S | BD653-S  | BD904-S  | BDX33D    | BUT11    | TIC106N-S | TIC226N   | TIP132-S |
| BD239B-S | BD244-S  | BD654    | BDW23B   | BDX33D-S  | BUT11-S  | TIC108D   | TIC226N-S | TIP135   |
| BD239C   | BD539B   | BD654-S  | BDW23B-S | BDX33-S   | BUT12    | TIC108D-S | TIC236D   | TIP135-S |
| BD239C-S | BD539B-S | BD655    | BDW24C   | BDX34     | BUT12-S  | TIC108M   | TIC236D-S | TIP136   |
| BD239-S  | BD539C   | BD655-S  | BDW24C-S | BDX34A    | BUX84    | TIC108M-S | TIC236M   | TIP136-S |
| BD240    | BD539C-S | BD656    | BDW53C   | BDX34A-S  | BUX84-S  | TIC116D   | TIC236M-S | TIP137   |
| BD240A   | BD540C   | BD656-S  | BDW53C-S | BDX34BS   | BUX85    | TIC116D-S | TIC236N   | TIP137-S |
| BD240A-S | BD540C-S | BD657    | BDW53D   | BDX34BS-S | BUX85-S  | TIC116M   | TIC236N-S | TIP150   |
| BD240B   | BD543    | BD657-S  | BDW53D-S | BDX34D    | IDM1J    | TIC116M-S | TIC246D   | TIP150-S |
| BD240B-S | BD543A   | BD658    | BDW54B   | BDX34D-S  | IDM1J-S  | TIC116N   | TIC246D-S | TIP151   |
| BD240C   | BD543A-S | BD658-S  | BDW54B-S | BDX34-S   | R3224T   | TIC116N-S | TIC246M   | TIP151-S |
| BD240C-S | BD543B   | BD659    | BDW64D   | BDX35     | R3224T-S | TIC126D   | TIC246M-S | TIP152   |
| BD240-S  | BD543B-S | BD659-S  | BDW64D-S | BDX35-S   | R3439    | TIC126D-S | TIC246N   | TIP152-S |
| BD241    | BD543C   | BD660    | BDW73C   | BDX53     | R3439-S  | TIC126M   | TIC246N-S | TIP29A   |
| BD241A   | BD543C-S | BD660-S  | BDW73C-S | BDX53A    | R3524S   | TIC126M-S | TIP100    | TIP29A-S |
| BD241A-S | BD543-S  | BD743A   | BDW73D   | BDX53A-S  | R3524S-S | TIC126N   | TIP100-S  | TIP29C   |
| BD241B   | BD544    | BD743A-S | BDW73D-S | BDX53B    | R3555    | TIC126N-S | TIP110    | TIP29C-S |
| BD241B-S | BD544A   | BD743B   | BDW74    | BDX53B-S  | R3555-S  | TIC201D   | TIP110-S  | TIP30    |
| BD241C   | BD544A-S | BD743B-S | BDW74C   | BDX53C    | R3671    | TIC201D-S | TIP111    | TIP30A   |
| BD241C-S | BD544B   | BD743C   | BDW74C-S | BDX53C-S  | R3671-S  | TIC201M   | TIP111-S  | TIP30A-S |
| BD241D   | BD544B-S | BD743C-S | BDW74D   | BDX53-S   | R3672    | TIC201M-S | TIP112    | TIP30B   |
| BD241D-S | BD544C   | BD744A   | BDW74D-S | BDX54     | R3672-S  | TIC206D   | TIP112-S  | TIP30B-S |
| BD241-S  | BD544C-S | BD744A-S | BDW74-S  | BDX54A    | R3673    | TIC206D-S | TIP115    | TIP30C   |
| BD242    | BD544-S  | BD744B   | BDW75    | BDX54A-S  | R3673-S  | TIC206M   | TIP115-S  | TIP30C-S |
| BD242A   | BD545    | BD744C   | BDW75-S  | BDX54B    | R3674    | TIC206M-S | TIP117    | TIP30-S  |
| BD242A-S | BD545-S  | BD744C-S | BDW93    | BDX54B-S  | R3674-S  | TIC206S   | TIP117-S  | TIP31    |
| BD242B   | BD645    | BD897A   | BDW93A   | BDX54C    | R3675    | TIC206S-S | TIP120    | TIP31A   |
| BD242B-S | BD645-S  | BD897A-S | BDW93B   | BDX54C-S  | R3675-S  | TIC216D   | TIP120-S  | TIP31A-S |
| BD242C   | BD646    | BD898    | BDW93B-S | BDX54-S   | R3676    | TIC216D-S | TIP121    | TIP31C   |
| BD242C-S | BD646-S  | BD898-S  | BDW93C   | BDX55     | R3676-S  | TIC216M   | TIP121-S  | TIP31C-S |
| BD242-S  | BD647    | BD899    | BDW93C-S | BDX55-S   | R3677    | TIC216M-S | TIP122    | TIP31F   |
| BD243    | BD647-S  | BD899A   | BDW93-S  | BF64      | R3677-S  | TIC216S   | TIP122-S  | TIP31F-S |
| BD243B   | BD648    | BD899A-S | BDW94    | BF64-S    | R3678    | TIC216S-S | TIP125    | TIP32A   |
| BD243B-S | BD648-S  | BD899-S  | BDW94B   | BF65      | R3678-S  | TIC225D   | TIP125-S  | TIP32A-S |
| BD243C   | BD649    | BD900    | BDW94B-S | BF65-S    | R3679    | TIC225D-S | TIP126    | TIP32C   |
| BD243C-S | BD649-S  | BD900-S  | BDW94C   | BF66      | R3679-S  | TIC225M   | TIP126-S  | TIP32C-S |
| BD243-S  | BD650    | BD901    | BDW94C-S | BF66-S    | R3680    | TIC225M-S | TIP127    | TIP41    |

### TO-220 Parts Sold (Continued)

|          |          |         |            |            |            |            |            |            |
|----------|----------|---------|------------|------------|------------|------------|------------|------------|
| TIP41A   | TIP42C   | TIP49-S | TIP54-S    | TIPL760-S  | TIPL810-S  | TISP2180   | TISP4082   | Y1133      |
| TIP41A-S | TIP42C-S | TIP50   | TIP6080    | TIPL770    | TIPL830    | TISP2180-S | TISP4082-S | Y1133-3827 |
| TIP41B   | TIP42-S  | TIP50-S | TIP6080-S  | TIPL770-S  | TIPL830-S  | TISP2290   | TISP4180   | Y1133-     |
| TIP41B-S | TIP43    | TIP51   | TIPL760    | TIPL790    | TIPP31A    | TISP2290-S | TISP4180-S | 3827-S     |
| TIP41C   | TIP43-S  | TIP51-S | TIPL760A   | TIPL790A   | TISP1082   | TISP3082   | TISP4290   | Y1133-S    |
| TIP41C-S | TIP47    | TIP52   | TIPL760A-S | TIPL790A-S | TISP1082-S | TISP3082-S | TISP4290-S | Y1171      |
| TIP41-S  | TIP47-S  | TIP52-S | TIPL760B   | TIPL790-S  | TISP1083   | TISP3180   | Y1031      | Y1171-S    |
| TIP42    | TIP48    | TIP53   | TIPL760B-S | TIPL791A   | TISP1083-S | TISP3180-S | Y1031-S    |            |
| TIP42A   | TIP48-S  | TIP53-S | TIPL760C   | TIPL791A-S | TISP2082   | TISP3290   | Y1112      |            |
| TIP42A-S | TIP49    | TIP54   | TIPL760C-S | TIPL810    | TISP2082-S | TISP3290-S | Y1112-S    |            |