

ECN/PCN No.: M1176

| For Manufacturer  |  |  |   |
|---|--|--|---|
| <b>Product Description:</b><br>HIGH CURRENT MULTILAYER<br>FERRITE CHIPBEAD (0603) | <b>Abracon Part Number / Part Series:</b><br><br>ACML-0603H-xxx Series | <input type="checkbox"/> Documentation only<br><input checked="" type="checkbox"/> ECN<br><input type="checkbox"/> EOL | <input checked="" type="checkbox"/> Series<br><input type="checkbox"/> Part Number(s) |
| <b>Affected Revision:</b><br>4  | <b>New Revision:</b><br>E  | <b>Application:</b>  | <input type="checkbox"/> Safety<br><input checked="" type="checkbox"/> Non-Safety     |
|   |  |  |   |

Prior to Change:

## 2.0 ELECTRICAL SPECIFICATIONS

ABRACON P/N: **ACML-0603H-xxx**  
 Operating Temperature: **-55°C to +125°C**  
 Storage Temperature: **-55°C to +125°C**

| Part Number    | Z (Ω) | Test Freq | Rdc   | Ir     |
|----------------|-------|-----------|-------|--------|
|                | ±25%  | MHz       | Ω Max | mA Max |
| ACML-0603H-050 | 5     | 100       | 0.03  | 2000   |
| ACML-0603H-110 | 11    | 100       | 0.03  | 2000   |
| ACML-0603H-310 | 31    | 100       | 0.05  | 1500   |
| ACML-0603H-600 | 60    | 100       | 0.08  | 1500   |
| ACML-0603H-121 | 120   | 100       | 0.1   | 1200   |
| ACML-0603H-221 | 220   | 100       | 0.15  | 1000   |
| ACML-0603H-301 | 300   | 100       | 0.2   | 1000   |
| ACML-0603H-501 | 500   | 100       | 0.28  | 800    |
| ACML-0603H-601 | 600   | 100       | 0.35  | 800    |

Ir: Rated current applied when the chip surface temperature rise 20°C

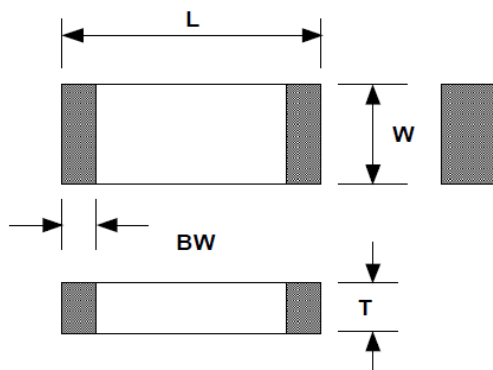
## 2.1 OPTIONS AND PART IDENTIFICATION

ACML - 0603H - □□□ - □

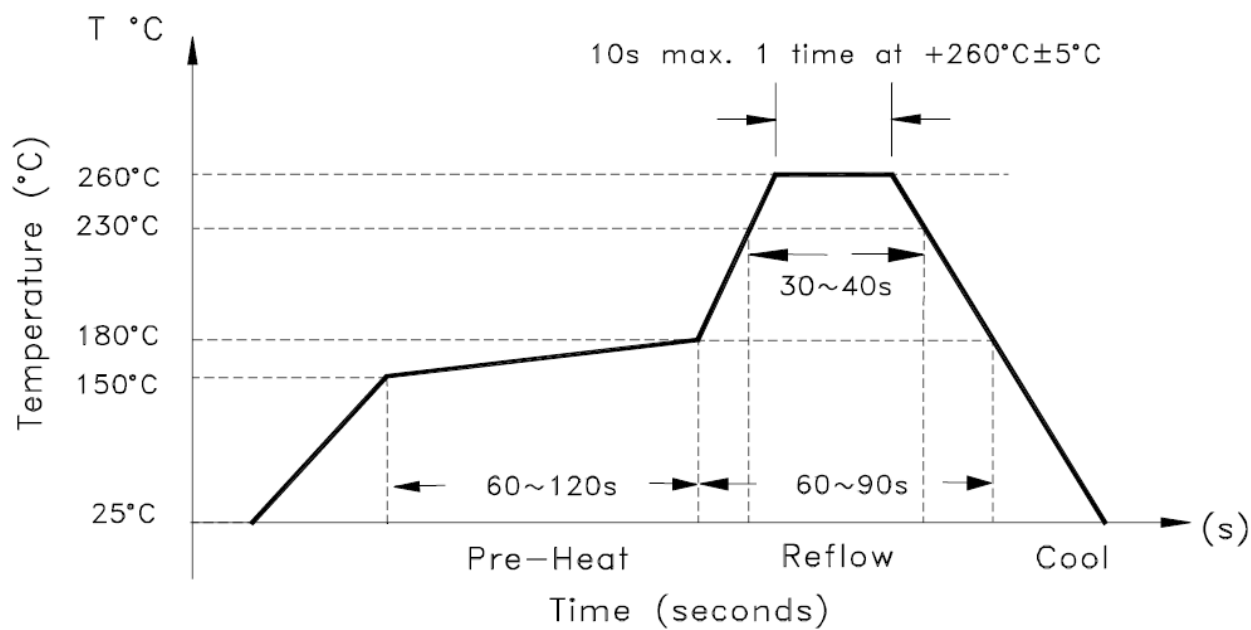


## 3.0 SPEC

This product is RoHS compliant.

**5.0 Outline dimensions**


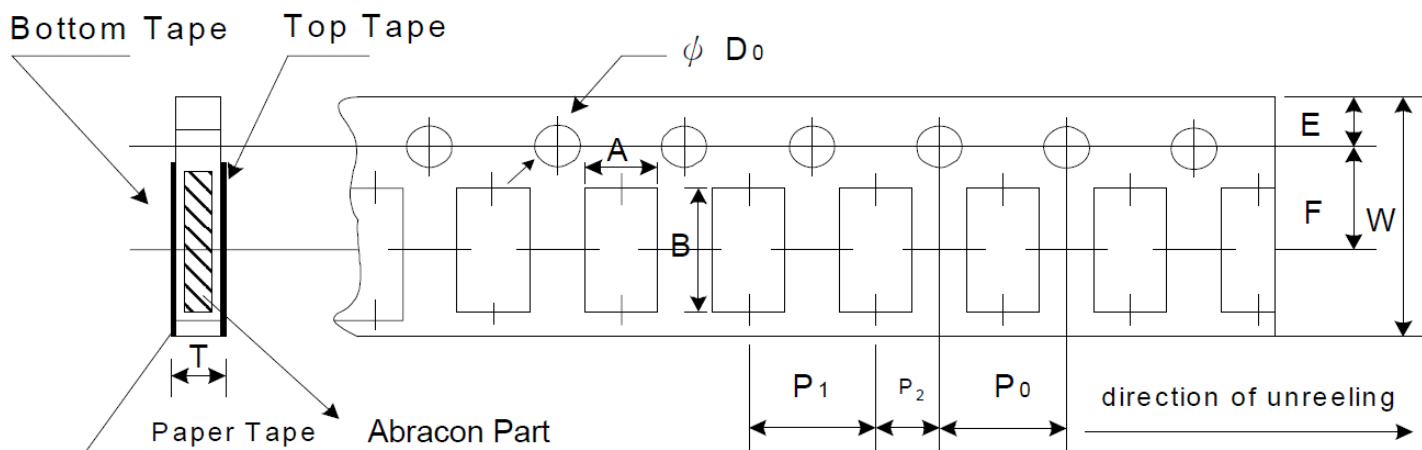
|                  |  |
|------------------|--|
| Length (L)       | $0.063 \pm 0.006$<br>(1,60 $\pm$ 0,15) |
| Width (W)        | $0.031 \pm 0.006$<br>(0,80 $\pm$ 0,15) |
| Thickness (T)    | $0.031 \pm 0.006$<br>(0,80 $\pm$ 0,15) |
| Termination (BW) | $0.012 \pm 0.008$<br>(0,30 $\pm$ 0,20) |

**6.1 Reflow Profile**


**7.0 PACKING**

T= tape and reel (4,000 pcs per reel)

## 7.1 Dimensions of Tape:



| Codes      | A         | B         | W        | E        | F       |
|------------|-----------|-----------|----------|----------|---------|
| ACML-0603H | 1.05±0.15 | 1.90±0.15 | 8.00±0.3 | 1.75±0.1 | 4.0±0.1 |

| Codes      | $P_0$     | $P_1$     | $P_2$     | $\phi D_0$ | T        |
|------------|-----------|-----------|-----------|------------|----------|
| ACML-0603H | 4.00±0.10 | 4.00±0.10 | 2.00±0.05 | 1.55±0.05  | 1.0±0.03 |

After Change:

## 1.0 Electrical Specifications

| Part Number    | Z(Ω)<br>±25% | Z Test Freq.(MHz) | Rdc (Ω)<br>Max. | Ir (mA)<br>Max. |
|----------------|--------------|-------------------|-----------------|-----------------|
| ACML-0603H-100 | 10           | 100               | 0.020           | 3000            |
| ACML-0603H-300 | 30           | 100               | 0.030           | 3000            |
| ACML-0603H-600 | 60           | 100               | 0.040           | 2500            |
| ACML-0603H-121 | 120          | 100               | 0.050           | 2000            |
| ACML-0603H-221 | 220          | 100               | 0.100           | 1400            |
| ACML-0603H-331 | 330          | 100               | 0.140           | 1200            |
| ACML-0603H-391 | 390          | 100               | 0.140           | 1000            |
| ACML-0603H-471 | 470          | 100               | 0.200           | 1000            |
| ACML-0603H-601 | 600          | 100               | 0.350           | 500             |

### 1.1 Test Conditions and Equipment

**Ir:** Rated current applied when the chip surface temperature rise just 40°C against chip surface temperature.

**Electric power supplier, Electric current meter, Thermometer.**

**Z:** Impedance Analyzer HP4291 or equivalent, 50mV.

**DCR:** LCR Meter HP4263A or equivalent

### 1.2 Operating Temperature

-55°C to +125°C

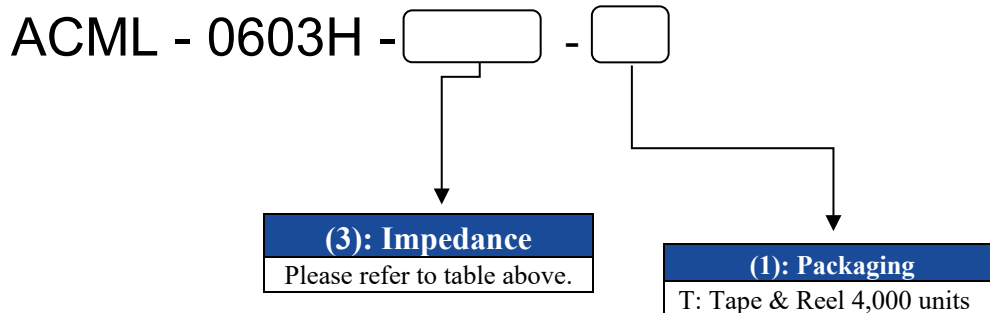
### 1.3 Storage Temperature

-55°C to +125°C and RH 70% (Max)

### 2.0 ACML-0603H is RoHS/RoHS II Compliant and Pb free

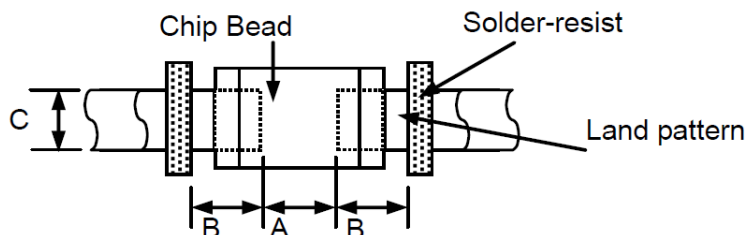
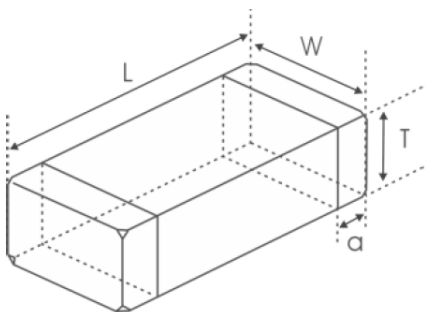
### 3.0 MSL level: 1

## 4.0 Part Identification



## 4.1 Part Marking: None

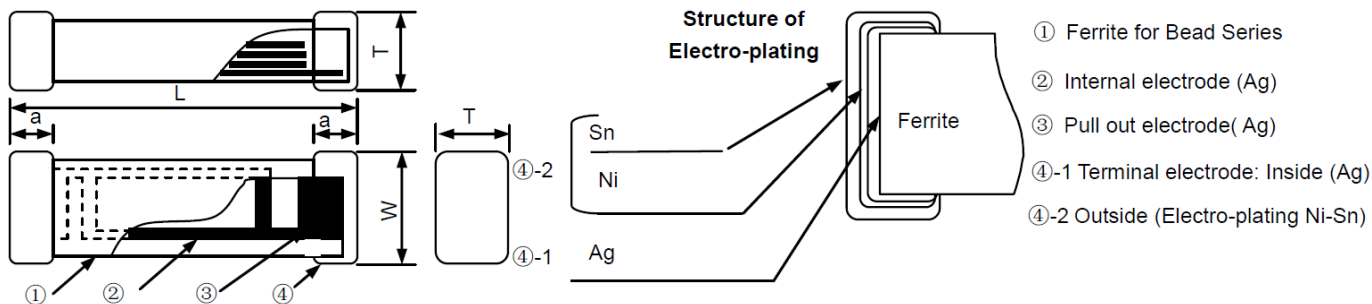
## 5.0 Mechanical Specifications



Recommended Layout Pattern

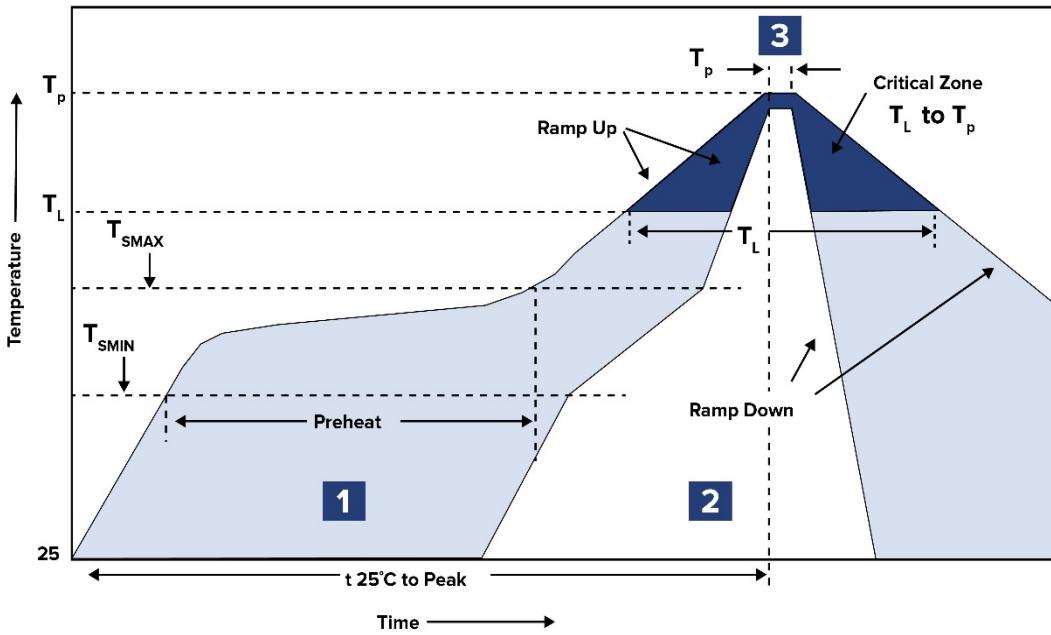
| L        | W        | T        | a       | A           | B           | C           |
|----------|----------|----------|---------|-------------|-------------|-------------|
| 1.6±0.15 | 0.8±0.15 | 0.8±0.15 | 0.3±0.2 | 0.60 ~ 0.80 | 0.60 ~ 0.80 | 0.60 ~ 0.80 |

## 6.0 Materials



| Section | Part Name                      | Material Name                  |
|---------|--------------------------------|--------------------------------|
| ①       | Ferrite Body                   | Ferrite Powder                 |
| ②       | Inner Coils                    | Silver Paste                   |
| ③       | Pull-out Electrode (Ag)        | Silver Paste                   |
| ④-1     | Terminal Electrode: Inside Ag  | Termination Silver Composition |
| ④-2     | Electro-Plating: Ni/Sn plating | Plating Chemicals              |

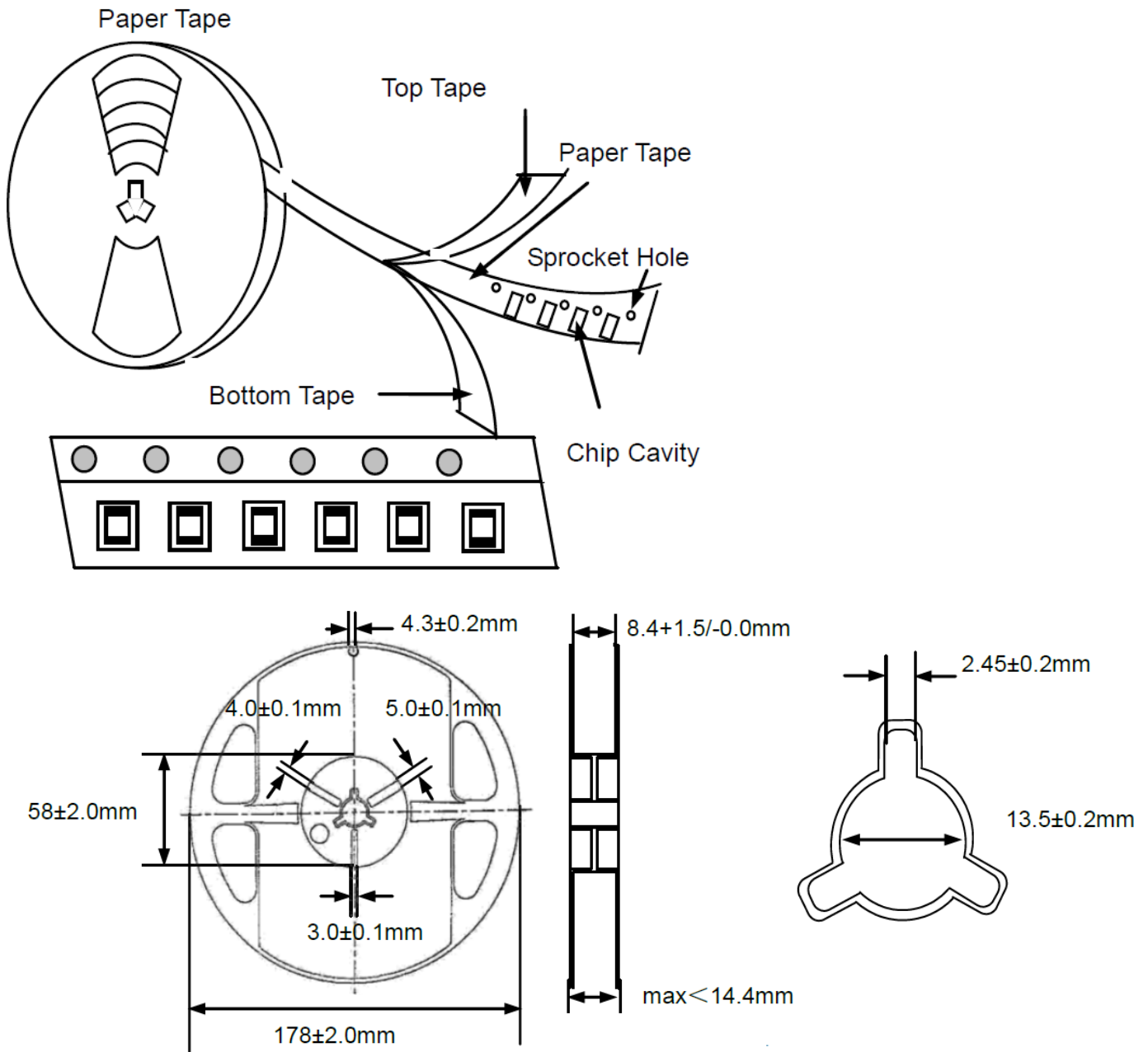
## 8.0 Reflow Profile



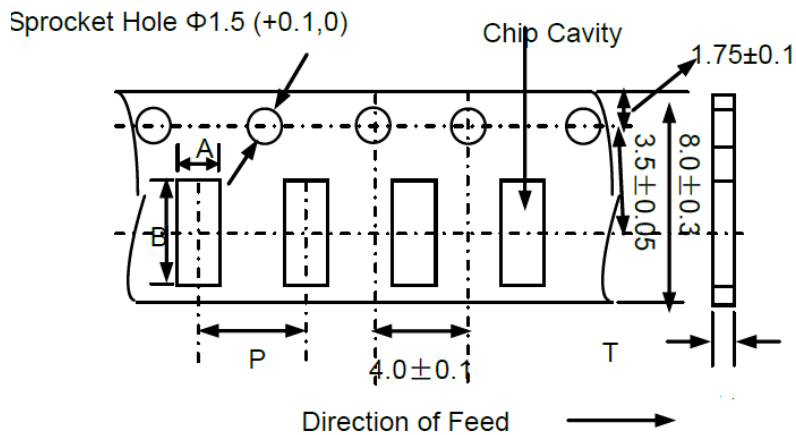
| Zone | Description | Temperature                               | Times         |
|------|-------------|---|---------------|
| 1    | Preheat     | $T_{SMIN} \sim T_{SMAX}$<br>150°C ~ 180°C | 60 ~ 120 sec. |
| 2    | Reflow      | $T_L$<br>180°C - 230°C                    | 60 ~ 90 sec.  |
| 3    | Peak heat   | $T_P$<br>260°C±5°C                        | 10 sec. MAX   |

**9.0 Packaging**

T=Tape and reel (4,000 pcs/reel)



## 9.0 Packaging Continued



### Cause/Reason for Change:

Updating family. Reformating documentation to latest. Discontinuing devices with unpopulare specifications. Adding a few more popular devices.

### Change Plan

Effective Date:  
7/13/2020

Additional Remarks:

### Change Declaration:

Changes described here will not impact remaining products form, fit or function.

Issued Date:

7/13/2020

Issued By:

Gerald Capwell

Issued Department:

Engineering

Approval:

Syed Raza  
Engineering VP

Approval:

Reuben Quintanilla  
Quality Director

Approval:

Ying Huang  
Purchasing Director

### For Abracon EOL only

Last Time Buy (if applicable):

Alternate Part Number / Part Series:

Additional Approval:

Additional Approval:

Additional Approval:

### Customer Approval (If Applicable)

Qualification Status:

Approved  Not accepted

Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.

Customer Part Number:

Customer Project:

Company Name:

Company Representative:

Representative Signature:

Customer Remarks:



