

# E1B PACKAGE OUTLINE, PART MARKING and TRAY SPECIFICATION

## Table of Contents

<b>Introduction</b> .....	<b>2</b>
<b>Module Package Description</b> .....	<b>2</b>
Package Outline Drawing Half Bridge Module.....	2
Package Outline Drawing Full Bridge Module.....	3
Branding Diagram.....	4
<b>Tray</b> .....	<b>5</b>
<b>Storage Handling</b> .....	<b>5</b>
Storage and Handling Condition.....	5
ESD.....	5
<b>Contact Information and Important Notice</b> .....	<b>6</b>

## Introduction

This Manufacturing Note is intended for manufacturing engineers who are currently using the module for prototype or production manufacturing. The information provided in this document is meant to assist customers with the set-up and characterization of their products.

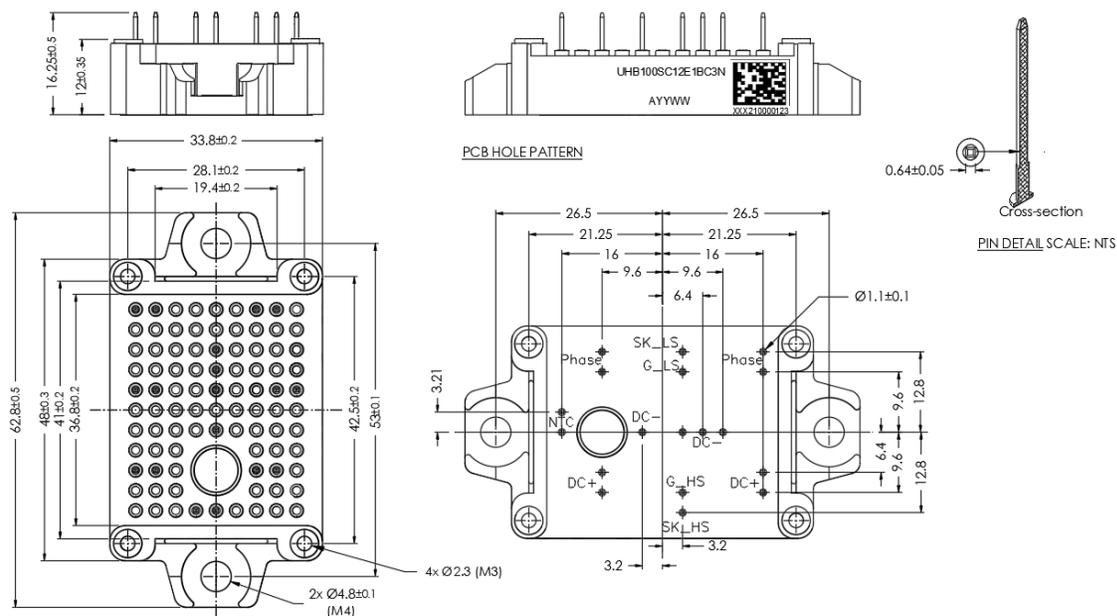
## Module Package Description

This module is a SiC FET device based on a unique cascode circuit configuration, in which a normally-on SiC JFET is co-packaged with a Si MOSFET to produce a normally-off SiC FET device. The device's silicon-like gate-drive characteristics allows the use of unipolar gate drives, compatible with Si IGBTs, Si FETs, SiC MOSFETs or Si superjunction devices. Available in the E1B module package, this device exhibits ultra-low gate charge and exceptional reverse recovery characteristics, making it ideal for switching inductive loads, and any application requiring standard gate drive Package Outline Drawing.

## Package Outline Drawing

This product is recommended for use with solder pin attach and phase change thermal interface materials, and not recommended for implementations using press fit and application of thermal grease. Please refer to mounting guidelines and user guide documents associated with this product for detailed information.

### Package outline for Half Bridge modules: UHB100SC12E1BC3N & UHB50SC12E1BC3N

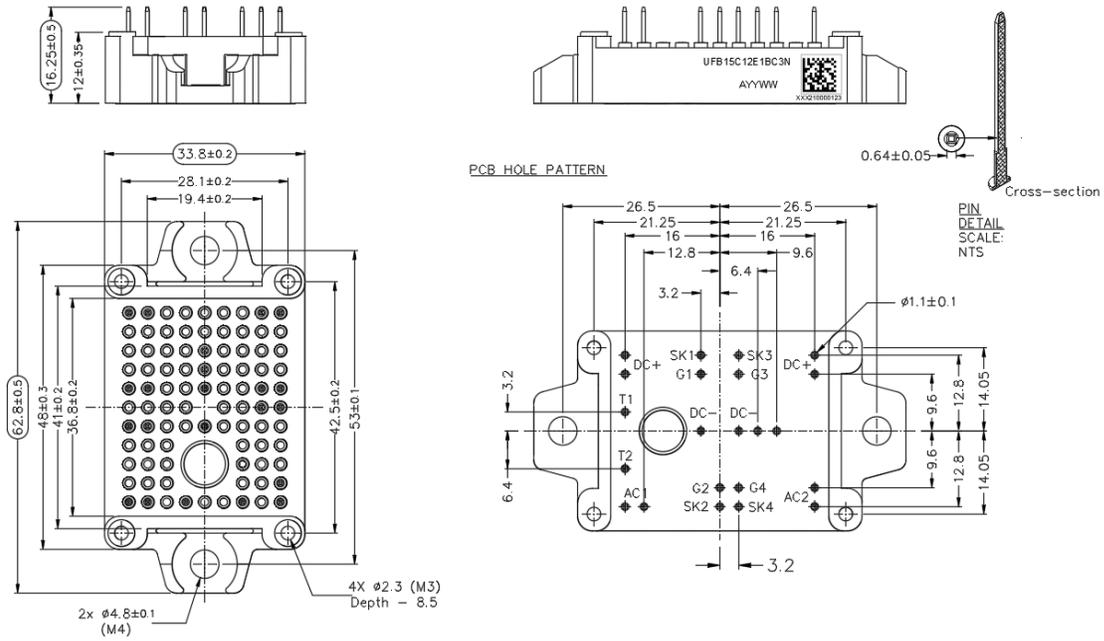


**NOTES:**

1. All dimensions in millimeters (mm)
2. General tolerance:  $\pm 0.1$ mm, unless otherwise specified

MANUFACTURING NOTE: E1B PACKAGE OUTLINE, PART MARKING and TRAY SPECIFICATION

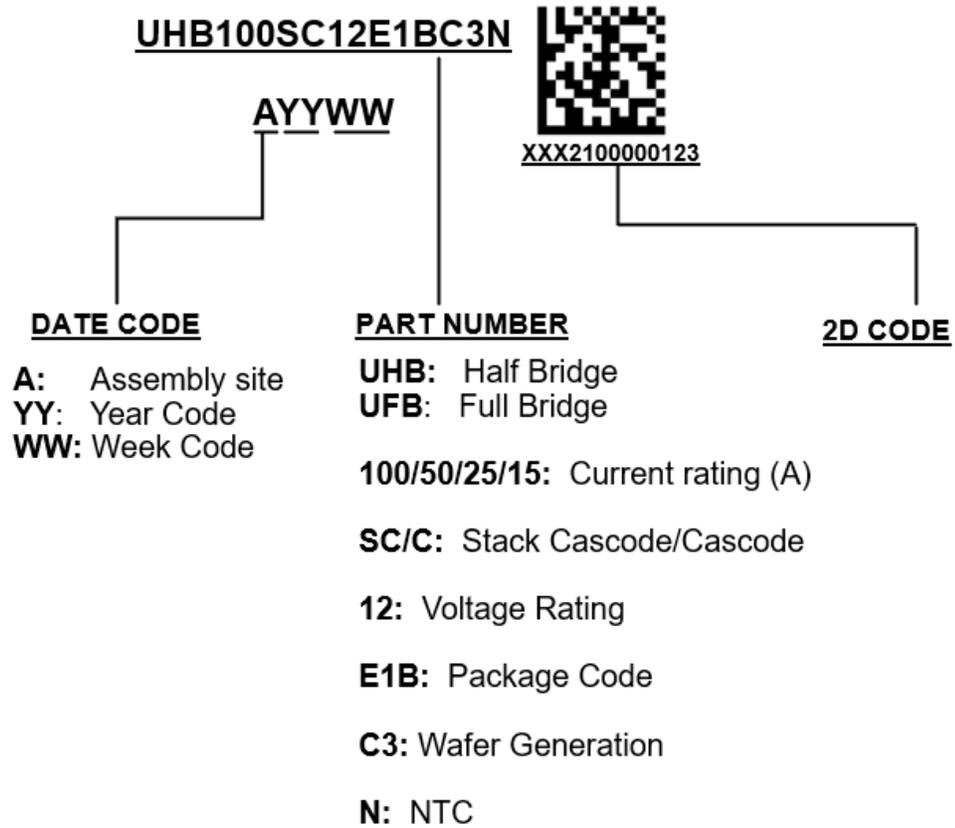
Package outline for Full Bridge modules: UFB15C12E1BC3N & UFB25SC12E1BC3N



NOTES:

1. All dimensions in millimeters (mm)
2. General tolerance: ± 0.1mm, unless otherwise specified

**Branding Diagram (Marking)**



## Carriers

### Tray and Shipping Instructions

The module is placed in an ESD tray with a pocket carrier that holds the module in dead bug orientation. The pocket is designed to hold the module for shipping and for loading onto manufacturing equipment, while protecting the body and the solder pins from damaging stresses with a lid to seal the units firmly. Then trays are placed in a shipping box with desiccant, proper label, and protective packaging so secure the tray firmly prior packing with tape.

The individual tray pocket design and count can vary from vendor to vendor.

#### Tray

1. Tray size and specification for large quantity

Tray size: 356x276x30 mm  
 Material: PS  
 Unit Quantity per tray: 24 pcs



Figure 1

2. Tray size and specification for small quantity

Tray size: 199x192x31 mm  
 Material: PS  
 Unit Quantity per tray: 6 pcs

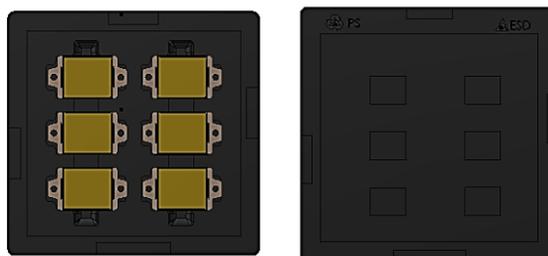


Figure 2

## Storage and Handling

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### Storage and Handling Conditions

Excessive forces from shock or vibration as well as environmental factors must be avoided when transporting and handling the modules. Although it is not advised, it is feasible to store the modules at the temperature ranges listed in the datasheet. Furthermore, the modules can be subjected to environmental conditions, see reference below.

IEC 60721-3-1: Classification of environmental conditions.

IEC 60721- 3-2: Classification of groups of environmental parameters and their severities - Transportation and handling/

IEC 60721-3-3 Classification of groups of environmental parameters and their severities – Stationary use at weather protected locations.

### ESD

Electrostatic discharge occurs naturally in the environment. With the increase in voltage potential, the outlets of neutralization or discharge will be sought. If the acquired discharge route is through a semiconductor device, destructive damage will result.

ESD countermeasure methods should be developed and used to Control potential ESD damage during handling in a factory environment at each manufacturing site.

This part is considered ESD sensitive and needs to be handled accordingly.

Qorvo recommends using standard ESD precautions (see Reference Documents) when handling these devices.

Reference Documents:

1. JEDEC Standard JESD625-A, "Requirements for Handling Electrostatic-Discharge-Sensitive (ESDS) Devices."
2. ANSI/ESD S20.20, "Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)."

NOTE: The ESD level for this part is documented in the product qualification report that is available from Qorvo.

## Contact Information

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For the latest specifications, additional product information, worldwide sales and distribution locations:

**Web:** [www.qorvo.com](http://www.qorvo.com)

**Tel:** +1 833-641-3811

**Email:** [customer.support@qorvo.com](mailto:customer.support@qorvo.com)

## Important Notice

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