

## Features

- Supports 15 KV IEC 61000-4-2 ESD equipment specification†
- Single device protects as many as 20 lines on exposed pins, communications ports
- Incorporates 40 bi-directional PN junction diodes
- Small form factor replaces 20 SOT23 packages

## Applications

- Parallel printer ports, communication ports
- Hot-swappable designs
- IC protection

## Thin Film on Silicon 2DEA Integrated ESD Protection Diode Array

### General Information

The Model 2DEA Series is well-suited for space constrained designs where the requirements of international ESD standard specification IEC 61000-4-2 must be met.

These highly integrated PN junction diode arrays are especially effective for use in PC notebooks and motherboards, engineering workstations and portable battery-powered devices such as PDAs and cellular phones.

Space savings, as compared to popular BAV99 SOT23 based implementations, can yield a 75 % reduction in utilized board area. In addition, significant assembly cost reductions and manufacturing integrity improvements can be realized.

Two package options are available. Model 2DEA consists of 20 bi-directional diode pairs in a miniature 24-pin JEDEC QSOP package. The 2DEB consists of 17 bi-directional diode pairs in a traditional wide-body SOIC JEDEC package.

### Electrical Specifications

Supply Voltage (VDD - VSS)	.....-0.3 V to +12 V
Voltage @ Any Channel (Vin)	.....-0.3 V to (VDD+0.5) VSS = GND
Channel Clamp Current (Ic) (Continuous)	.....±15 mA max.
Forward Voltage (Vf)	
@ If = 1 mA	.....0.8 V typ., 0.9 V max.
@ If = 12 mA	.....1.5 V max.
Leakage Current	
@ VSS < Vin < VDD = 12 V	.....0.1 µA typ.
@ VSS < Vin < VDD = 12 V	.....10 µA max.
Diode Capacitance	.....5 pF max.
Diode Power Rating	.....20 mW/diode
Power Dissipation @ 25 °C	.....100 mw
ESD Protection†	..15 KV per IEC 61000-4-2 human body test method

### Environmental Specifications

Operating Temperature	..-55 °C to +125 °C
Storage Temp. Range	...-65 °C to +150 °C

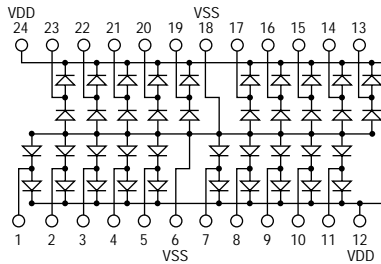
### Physical Specifications

Standard Packages and Pin Counts	
QSOP	.....24 Pin
Wide-Body SOIC	.....20 Pin

#### Dispensing

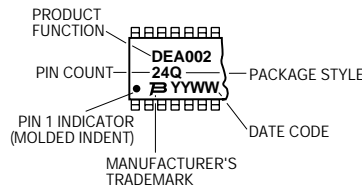
QSOP	.....3,500 pcs./13 " reel 56 pcs./tube
Wide-Body SOIC	.....3,500 pcs./13 " reel 37 pcs./tube

### Package Schematic



### Typical Part Marking

Represents total content. Layout may vary.



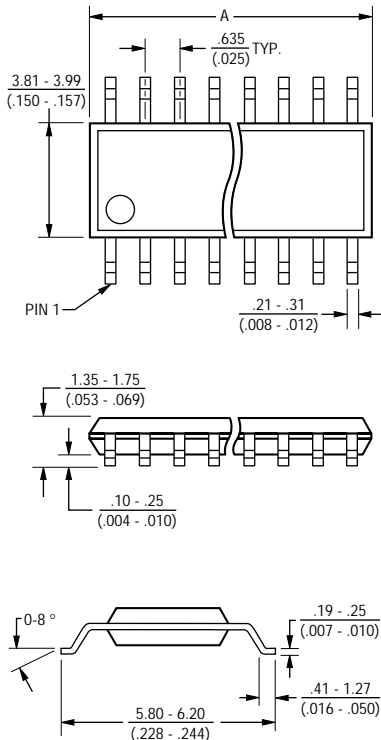
### How To Order

Product Class	2 DEA - 2 - Q 24 R
Thin-Film-on-Silicon	
Product Function	ESD Protection Diode Array
DEA = 20 Lines	
DEB = 17 Lines	
Standard	
Standard Package Style	
Q = QSOP	
W = Wide-Body SOIC	
Pin Count	Q = 24 W = 20
Dispensing	R = Reel T = Tube

### Standard Part Numbers

Part Number (Tape & Reel)	Part Number (Tubes)
2DEA-2-Q24R	2DEA-2-Q24T
2DEB-2-W20R	2DEB-2-W20T

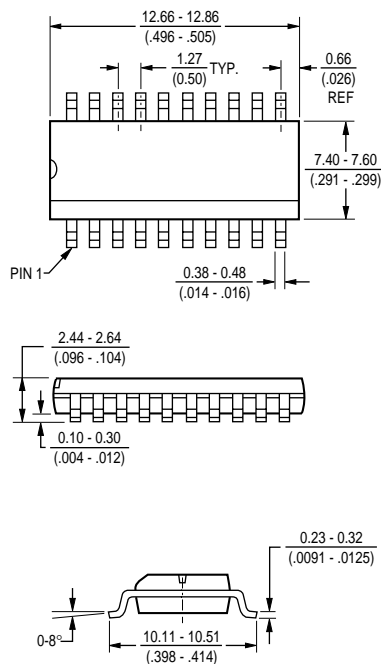
† Note: IEC 61000-4-2 ESD test performance is measured at the systems level and system designs, enclosure shielding and other conventional ESD control measures usually influence the results of these tests. Testing on the component level serves as an indicator that the system passes a specific compliance step, but does not ensure that the system passes at that level. The Model 2DEA/DEB device, therefore, can support successful implementation of the IEC 61000-4-2 system level ESD standard.

**QSOP  
Package Dimensions**

Model	A
2QSP24	8.56 - 8.74 (.337 - .344)

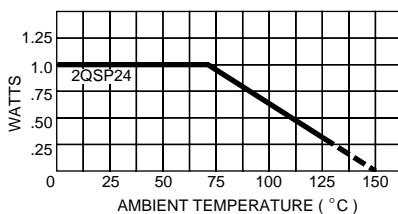
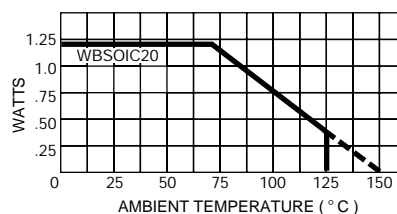
Governing dimensions are in mm. Dimensions in parentheses are in inches and are approximate.

JEDEC Reference Number MO-137.

**Wide-Body SOIC  
Package Dimensions**

Governing dimensions are in mm. Dimensions in parentheses are in inches and are approximate.

JEDEC Reference Number MS-013.

**QSOP Package Power  
Temperature Derating Curve****Wide-Body SOIC Package Power  
Temperature Derating Curve**

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