

CMP-8360 Series

Low Cost General Purpose Pin Diode

Description:

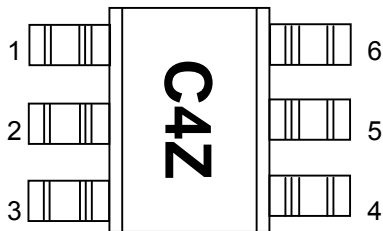
The CMP-836x series were designed for several types of applications. One type of applications is attenuators, where current consumption is the most significant factor. The second type of application is switches, where low capacitance is major design factor. The typical capacitance and the total resistance are typical specifications.

At SiliconApps, our commitment to quality components gives our customers a reliable source of RF products, which are tested at a more stringent level than our competitors. Manufacturing techniques assure that when two diodes are mounted into a single package they are taken from adjacent sites on the wafer. In cross referenced parts, we guarantee pin to pin compatibility. The various package configurations available provide a low cost solution to a wide variety of design problems.

Features:

- **Unique Configurations in Surface Mount Packages**
 - Add Flexibility
 - Save Board Space
 - Reduce Cost
- **Switching**
 - Low Capacitance
 - Low Distortion Switching
- **Low Failure in Time (FIT) Rate**
- **Matched Diodes**
- **High Thermal Conductivity for greater Power Dissipation**

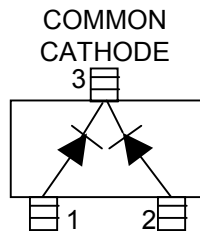
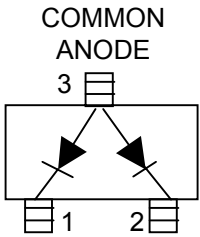
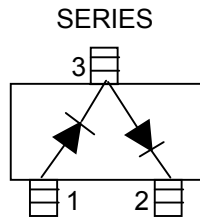
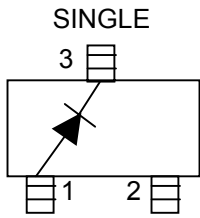
Pin Connections and Package Marking, SOT-363



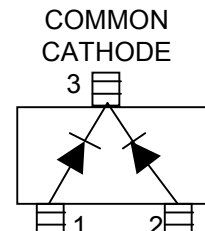
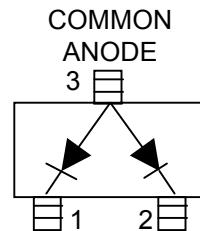
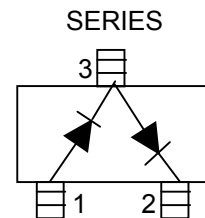
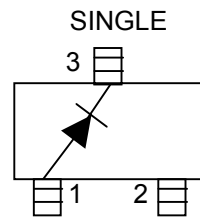
Notes:

1. Package marking provides orientation and identification
2. See "Electrical Specifications" for appropriate package marking

**SOT-23/SOT-143 Package
Lead Code Identification (top view)**

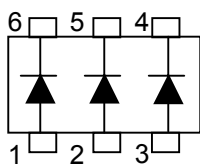


**SOT-323 Package Lead
Code Identification (top view)**

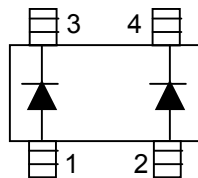


**SOT-363 Package 6 Lead
Code Identification (top view)**

UNCONNECTED TRIO



UNCONNECTED PAIR



Electrical Specifications, $T_C = +25^\circ\text{C}$, Single Diode

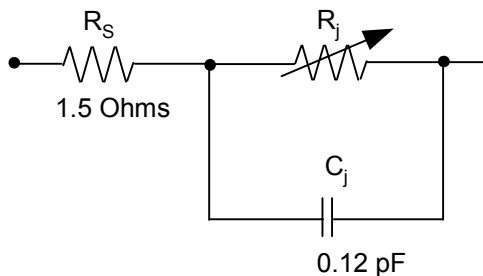
Part Number CMP-	Package Marking Code [1]	Configuration	Minimum Breakdown Voltage V_{BR} (V)	Maximum Series Resistance R_s	Typical Capacitance C_T (pF)
8360 8361 8362 8363 8364 8365 8366 8367 8368 836A		Single Series Common Anode Common Cathode Unconnected Pair Single Series Common Anode Common Cathode Unconnected Trio	50	3.0/1.5	0.20
Test Conditions			$V_R = V_{BR}$ Measure $I_R < 10\mu\text{A}$	$I_F = 10\text{mA}$ $f = 100\text{ MHz}$	$V_R = 50\text{V}$ $f = 1\text{ MHz}$

Typical Parameters, $T_C = +25^\circ\text{C}$

Part Number CMS-	Total Resistance R_T	Carrier Lifetime t (ns)	Total Capacitance C_T (pF)
836x	22	500	0.2
Test Conditions	$I_F = 1.0\text{ mA}$ $f = 100\text{ MHz}$	$I_F = 50\text{ mA}$ $T_R = 250\text{ mA}$	$V_R = 50\text{V}$ $f = 1\text{ MHz}$

Equivalent Linear Circuit Model

CMP-839x chip



$$R_T = 1.5 + R_J$$

$$C_T = C_P + C_J$$

$$R_J = 12 / I^{0.9} \text{ Ohms}$$

where

I = Forward Bias Current in mA

Absolute Maximum Ratings, $T_C = +25^\circ\text{C}$, Single Diode

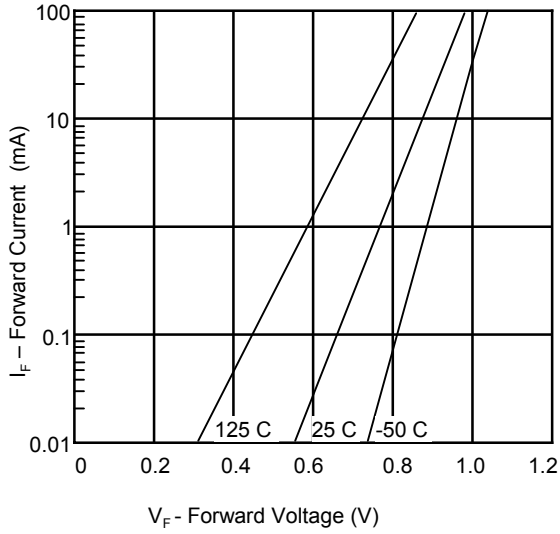
Symbol	Parameter	Unit	Absolute Maximum ^[1]	
			SOT-23/143	SOT-323
P_{IV}	Peak Inverse Voltage	V	50	50
T_J	Junction Temperature	$^\circ\text{C}$	150	150
T_{STG}	Storage Temperature	$^\circ\text{C}$	-65 to 150	-65 to 150
I_F	Forward Current (1us pulse)	Amp	1	1
θ_{jc}	Thermal Resistance ^[2]	$^\circ\text{C}/\text{W}$	500	150

Notes:

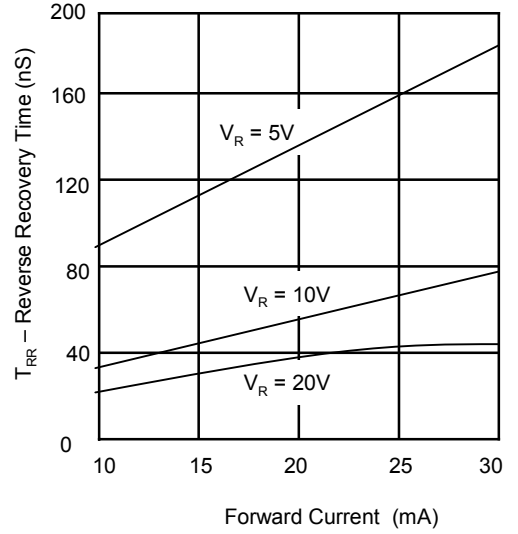
1. Operation in excess of any one of these conditions may result in permanent damage to the device
2. $T_C = +25^\circ\text{C}$, where T_C is defined to be the temperature at the package pins where contact is made to the circuit board.

ESD WARNING: Handling Precautions Should Be Taken To Avoid Static Discharge.

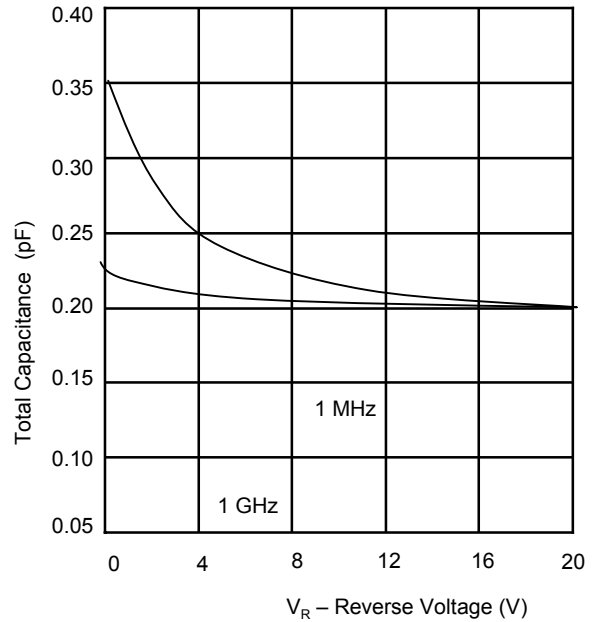
Typical Parameters, Single Diode



Graph 1: Typical Forward Current vs. Forward Voltage



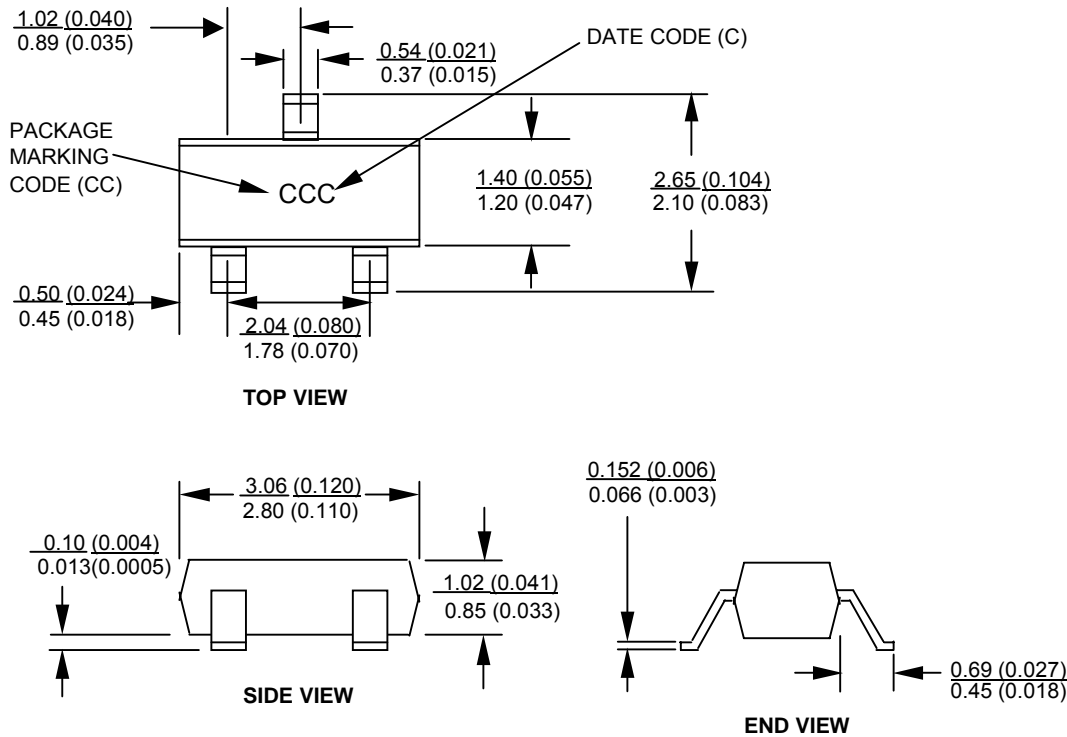
Graph 2: Typical Reverse Recovery Time vs. Forward Current



Graph 4: Capacitance vs. Reverse Voltage

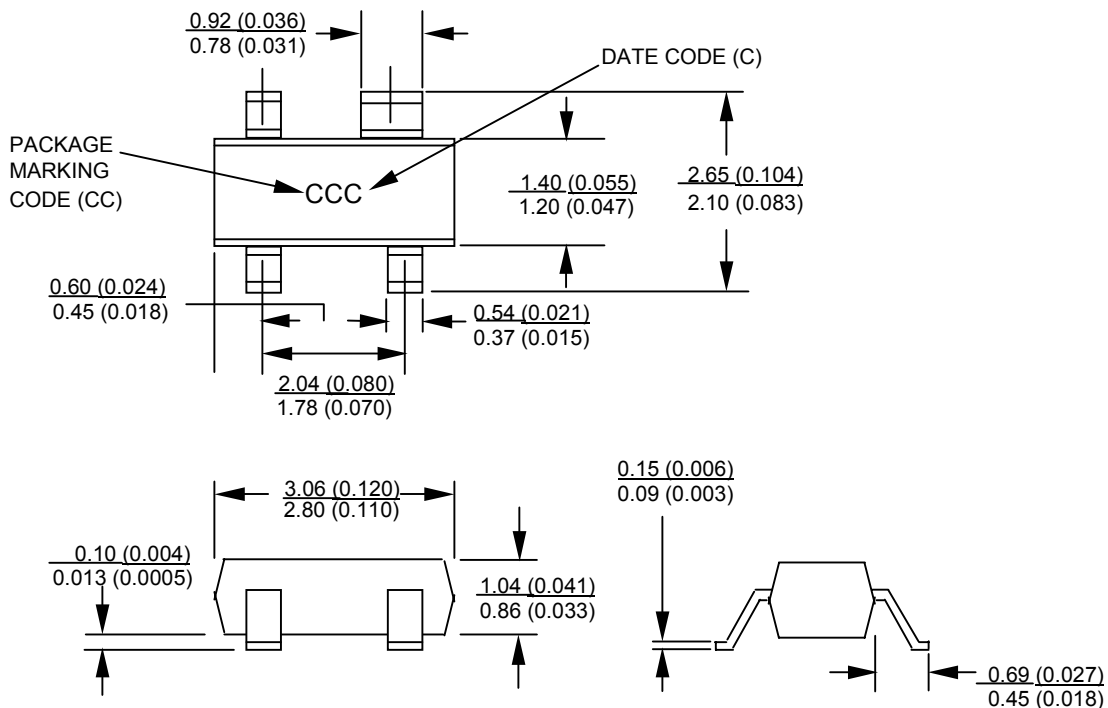
Package Dimensions

Outline 23 (SOT-23)

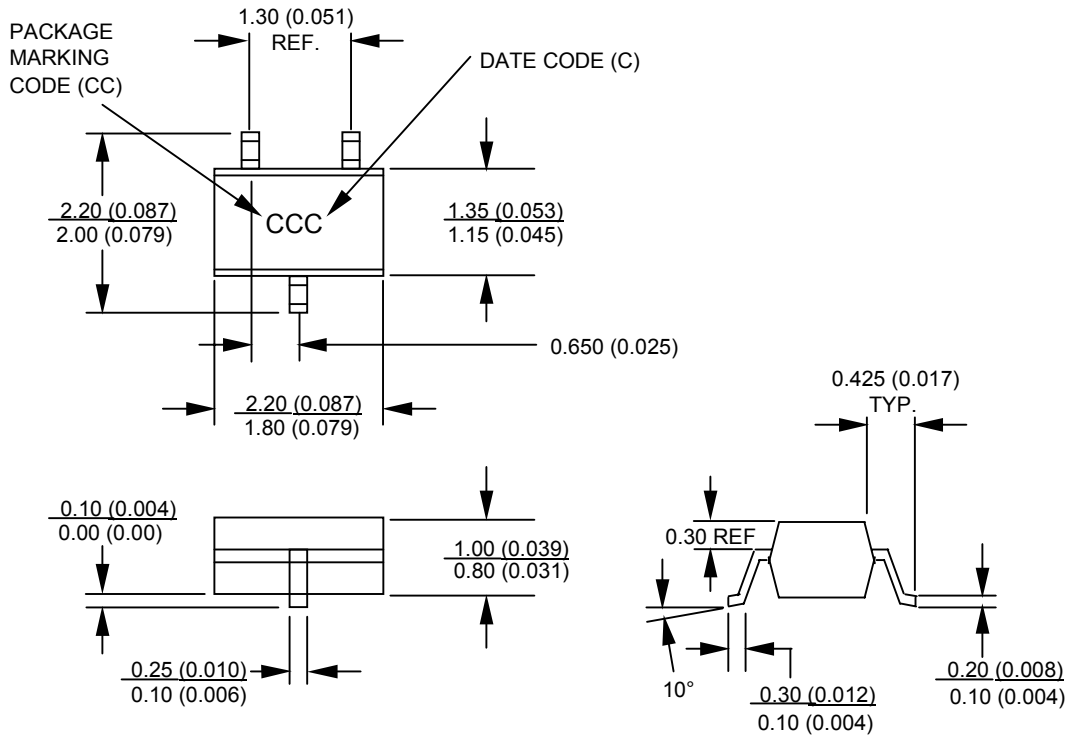


DIMENSIONS ARE IN MILLIMETERS (INCHES)

Outline 143 (SOT-143)

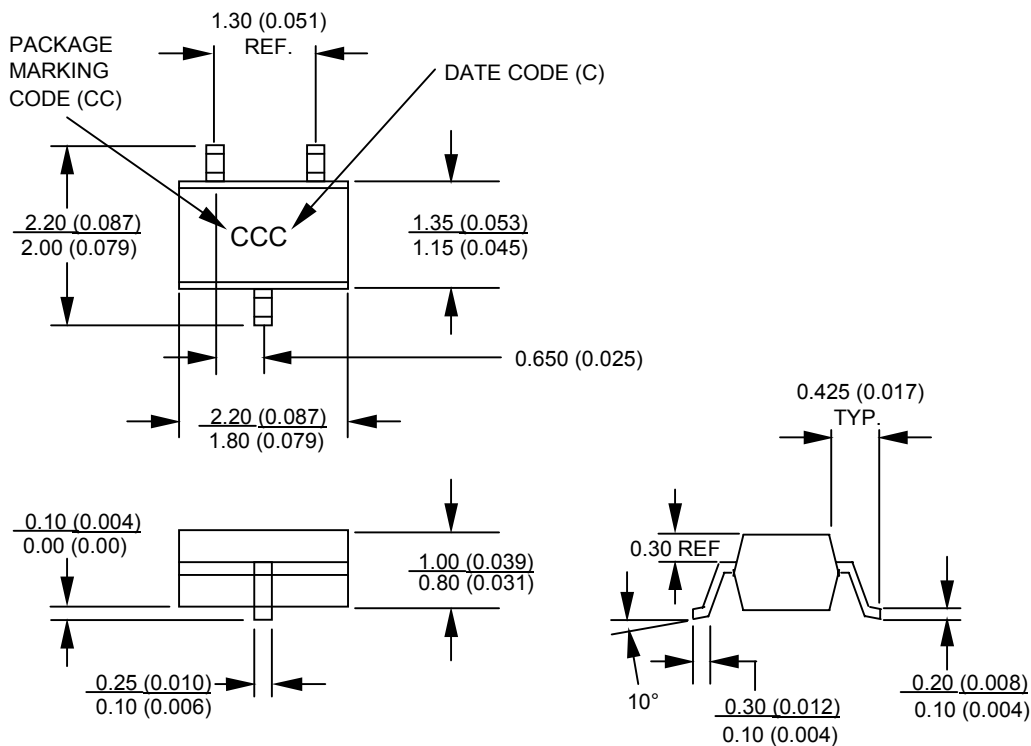


Outline SOT-323 (SC-70)



DIMENSIONS ARE IN MILLIMETERS (INCHES)

Outline SOT-363 (SC70, 6 Lead)



Cross Reference Guide

SiliconApps Part Number	Agilent Part Number
CMP8360	HSMP3860
CMP8361	HSMP386B
CMP8362	HSMP3862
CMP8363	HSMP3863
CMP8364	HSMP3864
CMP8365	HSMP386C
CMP8366	HSMP386E
CMP8367	HSMP386F
CMP8368	HSMP386L
CMP836A	HSMP3869

Part Number Ordering Information

PART NUMBER	NO. OF DEVICES	CONTAINER
CMP-836X	10,000	13" Reel
CMP-836X	2500	7" Reel
CMP-836X-BLK	100	Antistatic bag

www.siliconapps.com

Data subject to change

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