

## Features

- Nominal Zener Voltages: 5.6V, 6.8V, 15V, 20V
- Ultra-Small Surface Mount Package
- Ideal For Transient Suppression
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

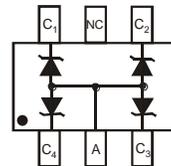
## Mechanical Data

- Case: SOT363
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish Annealed over Alloy 42 Leadframe). Solderable per MIL-STD-202, Method 208<sup>(3)</sup>
- Orientation: See Diagram
- Weight: 0.006 grams (Approximate)

SOT363



Top View



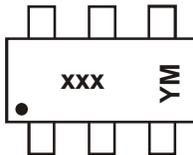
Device Schematic

## Ordering Information (Note 4)

Part Number	Compliance	Packaging	Shipping
QZX363C5V6-7-F	Standard	SOT363	3000/Tape & Reel
QZX363C6V8-7-F	Standard	SOT363	3000/Tape & Reel
QZX363C15-7-F	Standard	SOT363	3000/Tape & Reel
QZX363C20-7-F	Standard	SOT363	3000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information



xxx = Product Type Marking Code  
(See Electrical Characteristics Table)  
YM = Date Code Marking  
Y = Year (ex: G = 2019)  
M = Month (ex: 9 = September)

### Date Code Key

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Code	A	B	C	D	E	F	G	H	I	J	K

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Forward Voltage (Note 5) @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation	P <sub>D</sub>	200	mW
Thermal Resistance, Junction to Ambient Air (Note 7)	R <sub>θJA</sub>	625	°C/W
Operating and Storage Temperature Range (Note 7)	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Type Number	Marking Code	Zener Voltage Range (Note 5)			Maximum Zener Impedance (Note 6)				Maximum Reverse Current (Note 5)		Temperature Coefficient of Zener Voltage @ I <sub>ZT</sub> = 5mA	
		V <sub>Z</sub> @ I <sub>ZT</sub> = 5.0mA			Z <sub>ZT</sub> @ I <sub>ZT</sub>		Z <sub>ZK</sub> @ I <sub>ZK</sub>		I <sub>R</sub> @ V <sub>R</sub>		T <sub>C</sub> (mV/°C)	
		Nom (V)	Min (V)	Max (V)	Ω	mA	Ω	mA	μA	V	Min	Max
QZX363C5V6	K5F	5.6	5.32	5.88	40	5.0	400	1.0	1.0	2.0	-2.0	2.5
QZX363C6V8	K6F	6.8	6.47	7.14	15	5.0	80	1.0	2.0	4.0	1.2	4.5
QZX363C15	KJF	15	13.8	15.6	30	5.0	200	1.0	0.1	10.5	9.2	13.0
QZX363C20	KMF	20	19.0	21.0	55	5.0	225	1.0	0.1	14	14.4	18.0

- Notes:
5. Short duration pulse test used to minimize self-heating effect.
  6. f = 1kHz.
  7. Device mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.

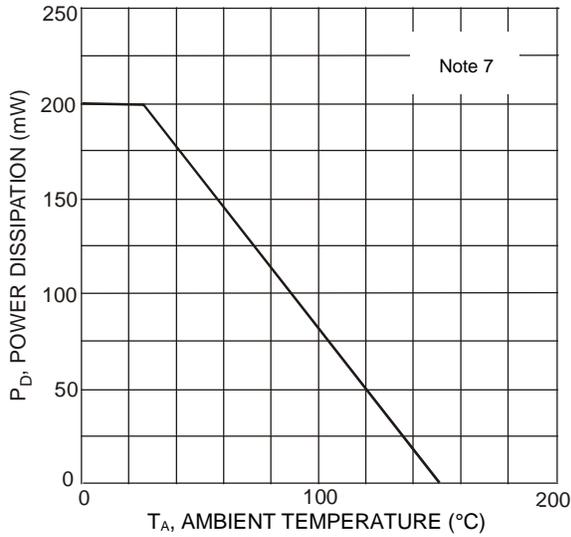


Fig. 1 Power Derating Curve

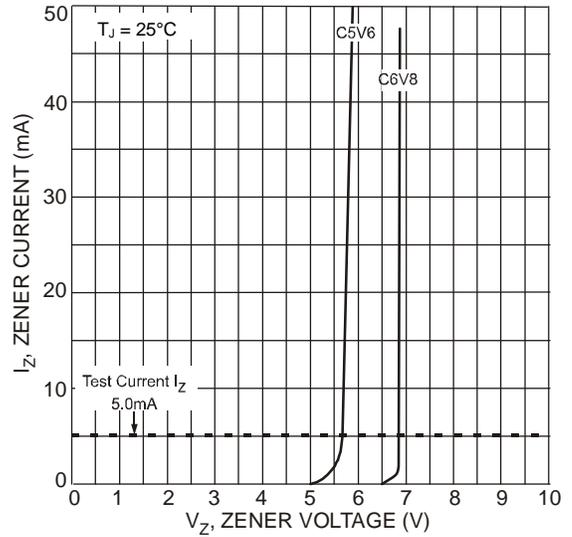


Fig. 2 Typical Zener Breakdown Characteristics

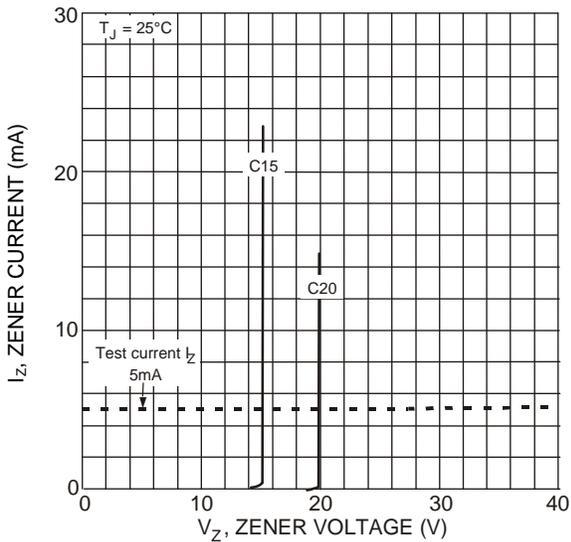


Fig. 3 Typical Zener Breakdown Characteristics

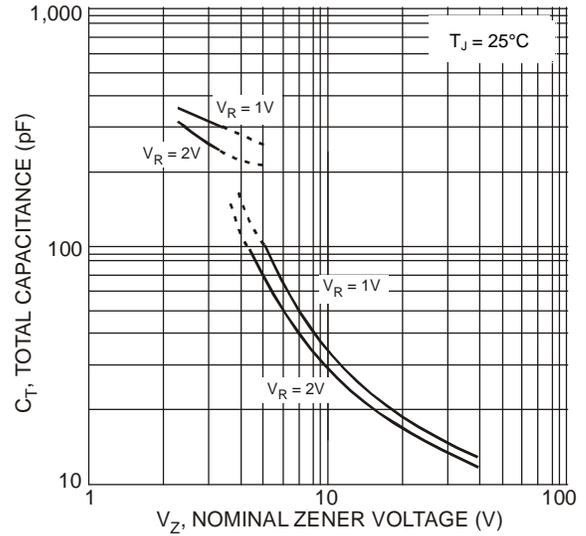
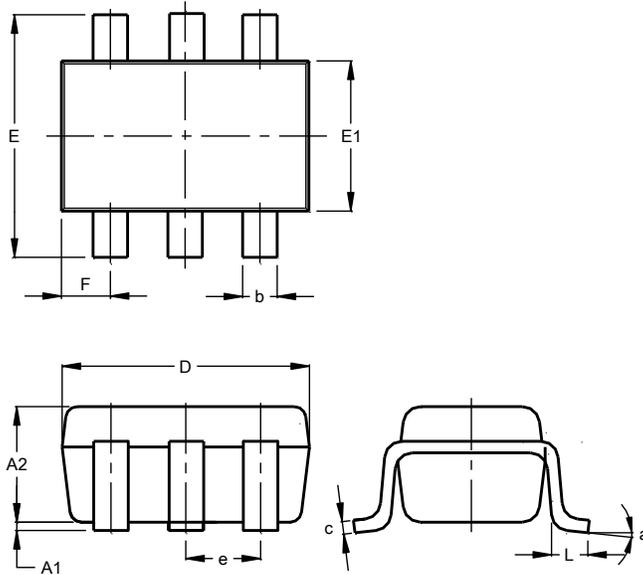


Fig. 4 Typical Total Capacitance vs. Nominal Zener Voltage

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SOT363

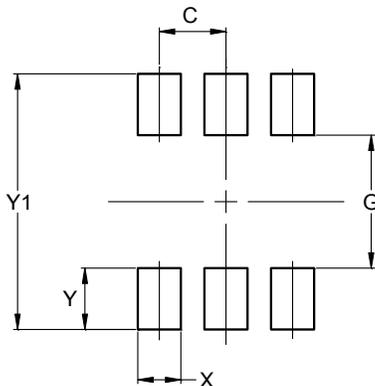


SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SOT363



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500

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