NUF2230XV6

2 Line EMI Filter with ESD Protection

This device is a 2 line EMI filter array for wireless applications. Greater than −30 dB attenuation is obtained at frequencies from 800 MHz to 900 MHz. It also offers ESD protection−clamping transients from static discharges. ESD protection is provided across all capacitors.

Features

- EMI Filtering and ESD Protection
- Integration of 10 Discrete Components
- Compliance with IEC61000−4−2 (Level 4)
  > 8.0 kV (Contact)
- SOT−563 Package
- Moisture Sensitivity Level 1
- ESD Ratings: Machine Model = C
  Human Body Model = 3B
- These are Pb−Free Devices

Benefits

- Reduces EMI/RFI Emissions on a Data Line
- Integrated Solution Offers Cost and Space Savings in a SOT−563 Package
- Reduces Parasitic Inductances Which Offer a More “Ideal” Low Pass Filter Response
- Integrated Solution Improves System Reliability

Applications

- EMI Filtering and ESD Protection for Data Lines
- Wireless Phones
- PDAs and Handheld Products
- Notebook Computers
- LCD Displays

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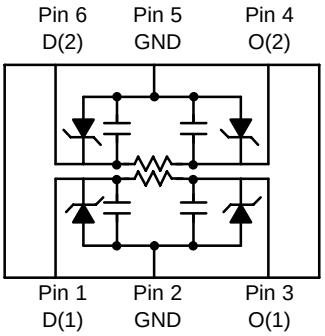
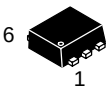
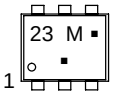
http://onsemi.com



MARKING DIAGRAM



SOT−563
CASE 463A



23 = Specific Device Code
M = Month Code
▪ = Pb−Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
NUF2230XV6T1	SOT−563	4000/Tape & Reel
NUF2230XV6T1G	SOT−563	4000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

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MAXIMUM RATINGS (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
ESD Discharge IEC61000−4−2 Air Discharge Contact Discharge	V_{PP}	 15 8.0	kV
Steady−State Power per Resistor	P_R		mW
Steady−State Power per Package	P_T		mW
Operating Temperature Range	T_{OP}	−40 to 85	°C
Storage Temperature Range	T_{STG}	−55 to 150	°C
Maximum Lead Temperature for Soldering Purposes (1.8 in from case for 10 seconds)	T_L	260	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Maximum Reverse Working Voltage	V_{RWM}				5.0	V
Breakdown Voltage	V_{BR}	I_R = 1.0 mA	6.0	7.0		V
Leakage Current	I_R	V_{RWM} = 3.0 V			1.0	μA
Resistance	R_A	I_R = 20 mA	90	100	110	Ω
Capacitance (Notes 1 and 2)	Cd	V_R = 2.5 V, f = 1.0 MHz		16		pF
Cut−Off Frequency (Note 3)	f_{3dB}	Above this frequency, appreciable attenuation occurs		125		MHz

1. Measured at 25°C, V_R = 2.5 V, f = 1.0 MHz.
2. Total line capacitance is 2 times the Diode Capacitance (Cd).
3. 50 Ω source and 50 Ω load termination.

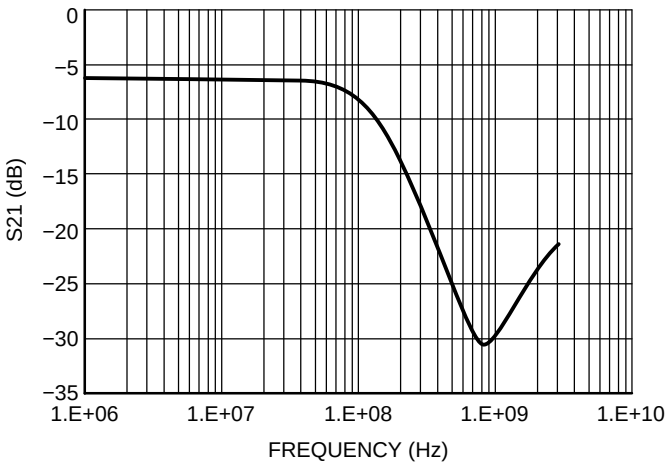


Figure 1. Insertion Loss Characteristic (50 Ω Source and 50 Ω Lead Termination)

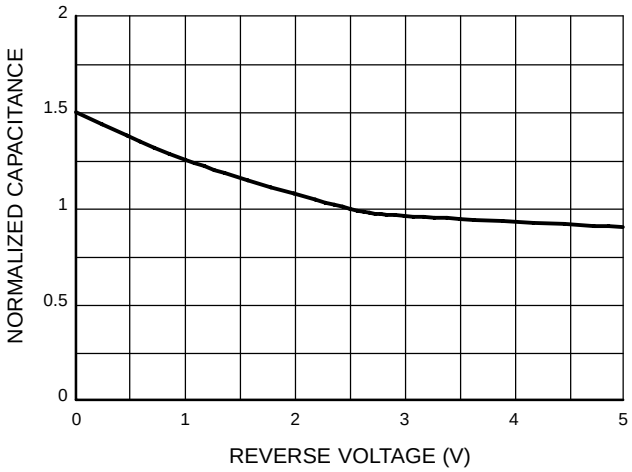


Figure 2. Typical Capacitance vs. Reverse Biased Voltage (Normalized Capacitance, Cd @ 2.5 V)

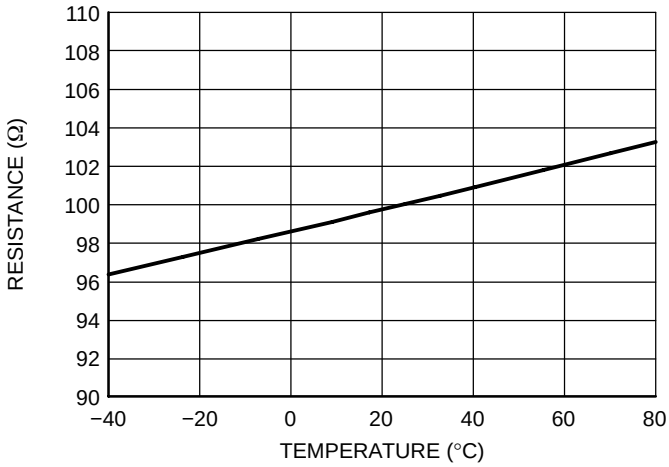
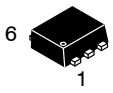


Figure 3. Typical Resistance over Temperature

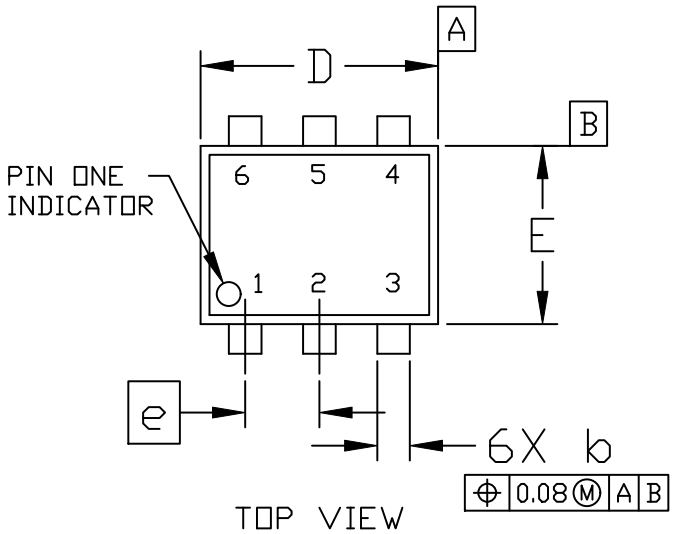


SCALE 4:1

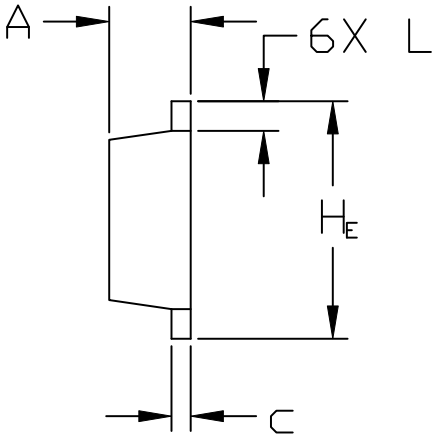
SOT−563, 6 LEAD
CASE 463A
ISSUE H

DATE 26 JAN 2021

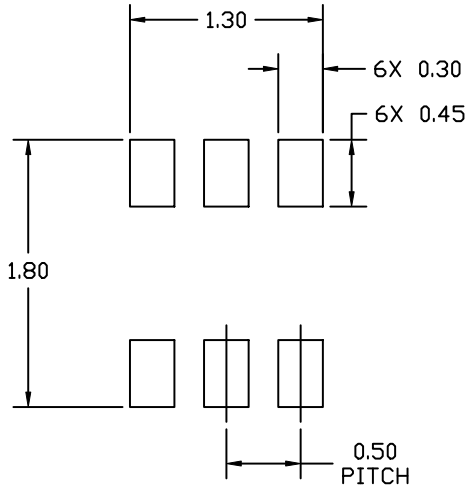
NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.



TOP VIEW



SIDE VIEW



RECOMMENDED MOUNTING FOOTPRINT*

* For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.50	0.55	0.60
b	0.17	0.22	0.27
c	0.08	0.13	0.18
D	1.50	1.60	1.70
E	1.10	1.20	1.30
e	0.50 BSC		
L	0.10	0.20	0.30
H_E	1.50	1.60	1.70

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SOT−563, 6 LEAD
CASE 463A
ISSUE H

DATE 26 JAN 2021

STYLE 1:
PIN 1. EMITTER 1
2. BASE 1
3. COLLECTOR 2
4. EMITTER 2
5. BASE 2
6. COLLECTOR 1

STYLE 2:
PIN 1. EMITTER 1
2. EMITTER 2
3. BASE 2
4. COLLECTOR 2
5. BASE 1
6. COLLECTOR 1

STYLE 3:
PIN 1. CATHODE 1
2. CATHODE 1
3. ANODE/ANODE 2
4. CATHODE 2
5. CATHODE 2
6. ANODE/ANODE 1

STYLE 4:
PIN 1. COLLECTOR
2. COLLECTOR
3. BASE
4. EMITTER
5. COLLECTOR
6. COLLECTOR

STYLE 5:
PIN 1. CATHODE
2. CATHODE
3. ANODE
4. ANODE
5. CATHODE
6. CATHODE

STYLE 6:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. CATHODE
6. CATHODE

STYLE 7:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. ANODE
6. CATHODE

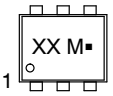
STYLE 8:
PIN 1. DRAIN
2. DRAIN
3. GATE
4. SOURCE
5. DRAIN
6. DRAIN

STYLE 9:
PIN 1. SOURCE 1
2. GATE 1
3. DRAIN 2
4. SOURCE 2
5. GATE 2
6. DRAIN 1

STYLE 10:
PIN 1. CATHODE 1
2. N/C
3. CATHODE 2
4. ANODE 2
5. N/C
6. ANODE 1

STYLE 11:
PIN 1. EMITTER 2
2. BASE 2
3. COLLECTOR 1
4. EMITTER 1
5. BASE 1
6. COLLECTOR 2

GENERIC MARKING DIAGRAM*



XX = Specific Device Code
M = Month Code
▪ = Pb−Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.

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