

8-Lines EMI Filter with Integrated ESD Protection

Descriptions

The EMI5201D8 is a low pass filter array with integrated ESD protection diodes. The device is a 3-pole inductor – capacitor with a typical inductor value of 17nH and a capacitor value of 12pF, to achieve attenuation greater than -21dB from 800MHz to 6.0GHz.

This performance makes the device ideal for protection of LCD panels in cellular phones and other portable electronics. The specified attenuation range is very effective in minimizing interference from 2G/3G, GPS, Bluetooth and WLAN signals.

The EMI5201D8 is available in DFN3313-16L package. Standard products are Pb-free and Halogen-free.

Features

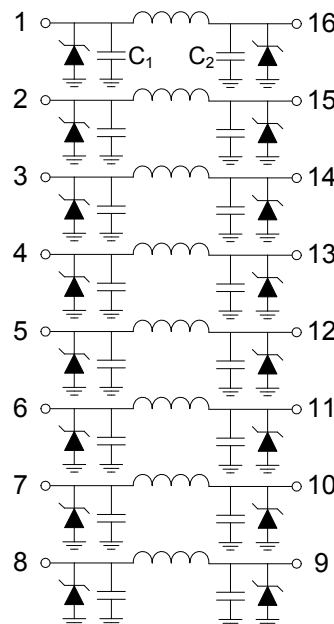
- Working voltage : 5V
- Transient ESD protection
IEC61000-4-2, Level 4 : ±15kV air
: ±12kV contact
- Bidirectional EMI/RFI filter with integrated ESD protection diodes
- Filter performance: greater than -21dB attenuation from 800MHz to 6.0GHz
- Inductor of 17nH (typical)
- Capacitor of 12pF (typical at VR=2.5V)
- Protection for 8 lines.

Applications

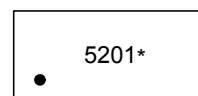
- Wireless Handsets
- EMI Flitering for LCD and Camera Data Lines
- EMI Flitering for and Protection for I/O Ports and Keypads



DFN3313-16L



Pin configuration (Top view)



DFN3313-16L

5201 = Device code
* = Month(A~Z)

Marking

Order information

Device	Package	Shipping
EMI5201D8-16/TR	DFN3313-16L	3000/Tape&Reel

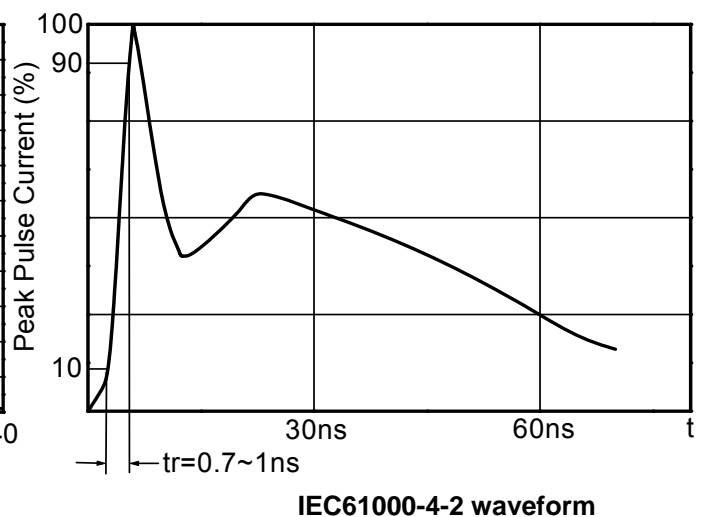
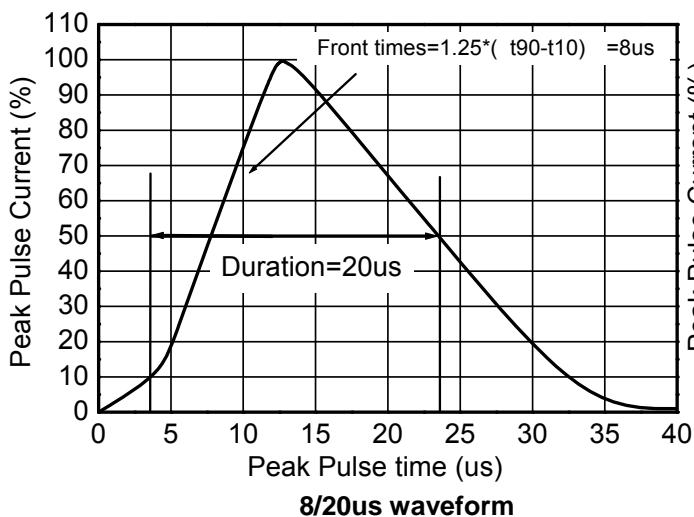
Absolute maximum ratings

Parameter	Symbol	Rating	Unit
ESD voltage IEC61000-4-2 air	V _{ESD}	±15	kV
ESD voltage IEC61000-4-2 contact		±12	
Junction temperature	T _J	125	°C
Operating temperature	T _{OP}	-40~85	°C
Lead temperature	T _L	260	°C
Storage temperature	T _{STG}	-55~150	°C

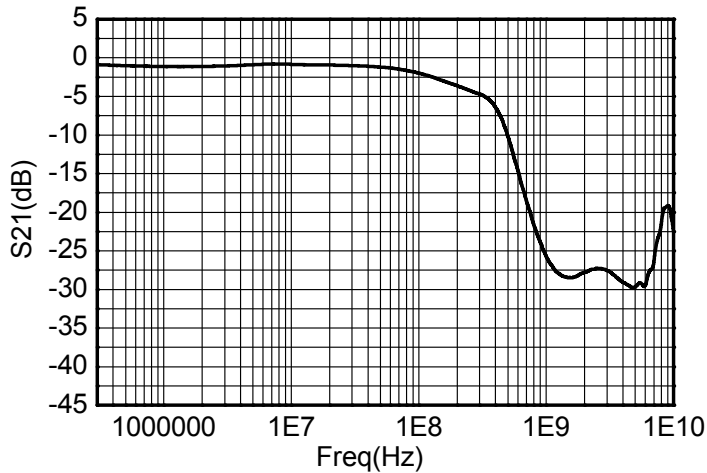
Electronics characteristics (Ta=25 °C, unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse maximum working voltage	V _{RWM}				5.0	V
Reverse leakage current	I _R	V _{RWM} =5V			1.0	uA
Reverse breakdown voltage	V _{BR}	I _T =1.0mA	6.2	6.9	7.6	V
Forward voltage	V _F	I _F =20mA	0.55	0.9	1.25	V
Resistance	R			10		Ω
Inductance	L			17		nH
Diode Capacitance	C ₁ =C ₂	F=1MHz, V _R =2.5V 50mVAC		12		pF
Line Capacitance	C _T	C ₁ + C ₂	20	24	28	pF
3dB Cut-Off Frequency ¹	f _{3dB}	Above this frequency. Appreciable attenuation occurs		250		MHz
Stop Band Attenuation		800 MHz to 6.0 GHz		21		dB

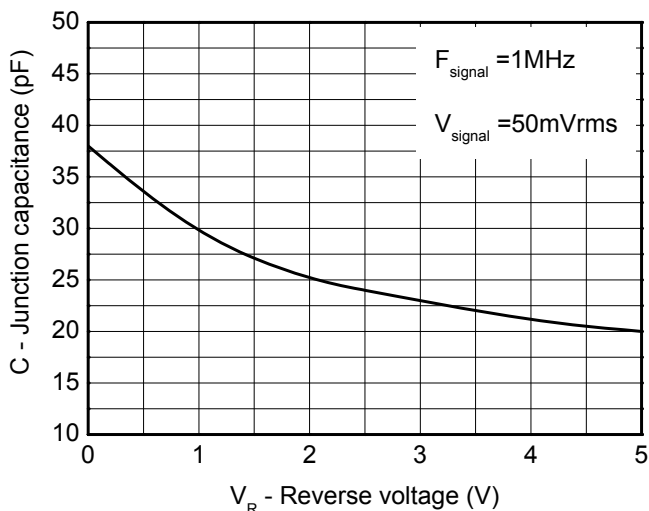
1. 50 Ω source and 50 Ω load termination



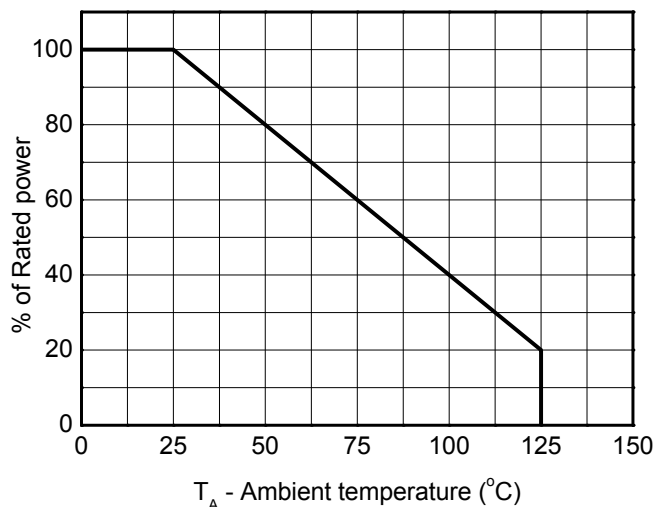
Typical characteristics (Ta=25°C, unless otherwise noted)



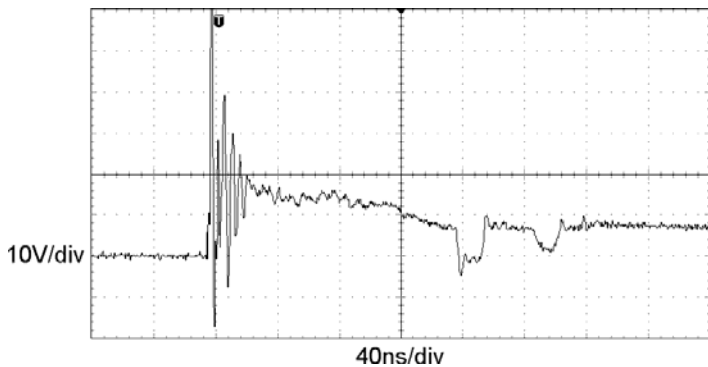
Typical Insertion Loss Curve



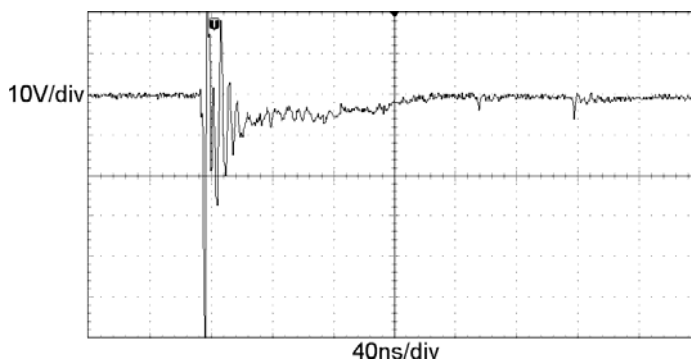
Capacitance vs. Reverse voltage



Power derating vs. Temperature



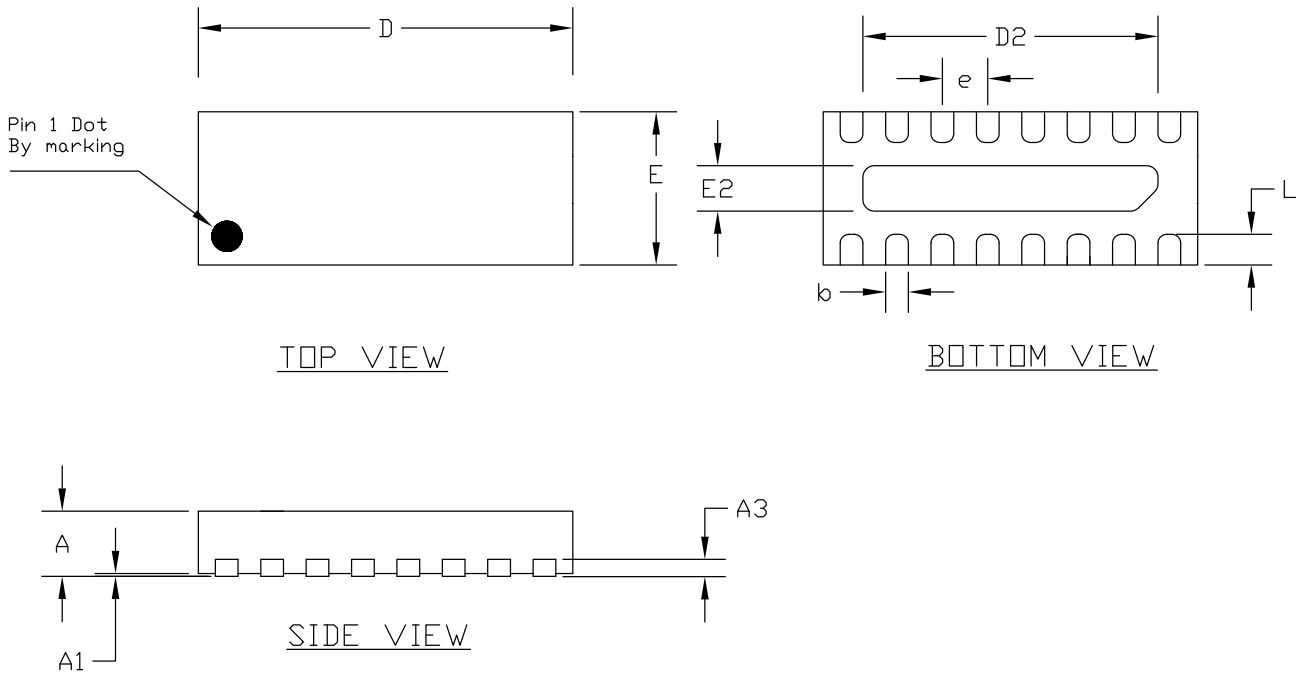
ESD clamping voltage
(IEC61000-4-2 +8kV contact)



ESD clamping voltage
(IEC61000-4-2 -8kV contact)

Package outline dimensions

DFN3313-16L



Symbol	Dimensions In Millimeters		
	Min.	Nom	Max.
A	>0.50	0.55	0.60
A1	0.00	-	0.05
A3	0.15REF		
D	3.25	3.30	3.35
E	1.30	1.35	1.40
D2	2.45	2.60	2.70
E2	0.25	0.40	0.50
L	0.17	0.27	0.37
b	0.15	0.20	.025
e	0.40BSC		

Recommend PCB Layout (Unit: mm)

