EMI5201D4

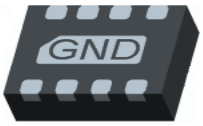
4-Lines EMI Filter with Integrated ESD Protection

Descriptions

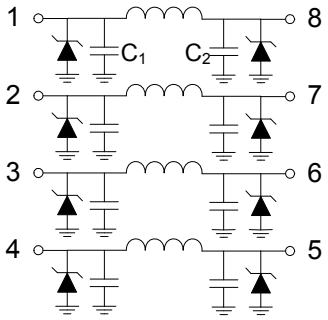
The EMI5201D4 is a low pass filter array with integrated ESD protection diodes. The device is a 3-pole inductor – capacitor with a typical inductor value of 17nH and a capacitor value of 12pF, to achieve attenuation greater than -21dB from 800MHz to 6.0GHz.

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.

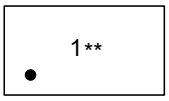
The EMI5201D4 is available in DFN1713-8L package. Standard products are Pb-free and Halogen-free.



DFN1713-8L



Pin configuration (Top view)



DFN1713-8L

1 = Device code

**** = Week(01~52)**

Marking

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 4 lines.

Applications

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

Order information

Device	Package	Shipping
EMI5201D4-8/TR	DFN1713-8L	3000/Tape&Reel

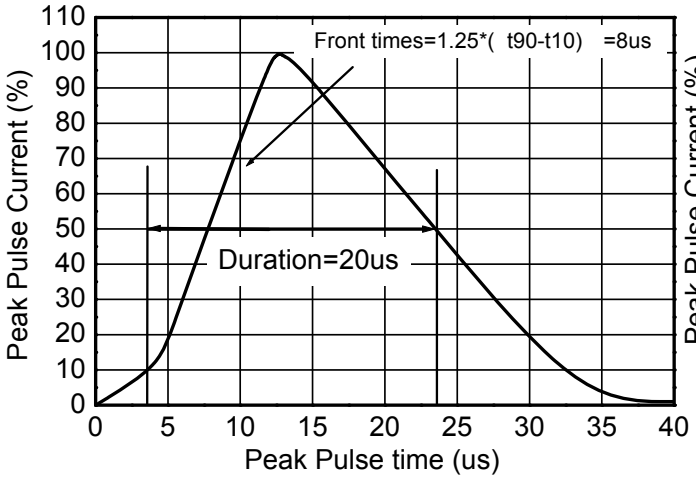
Absolute maximum ratings

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

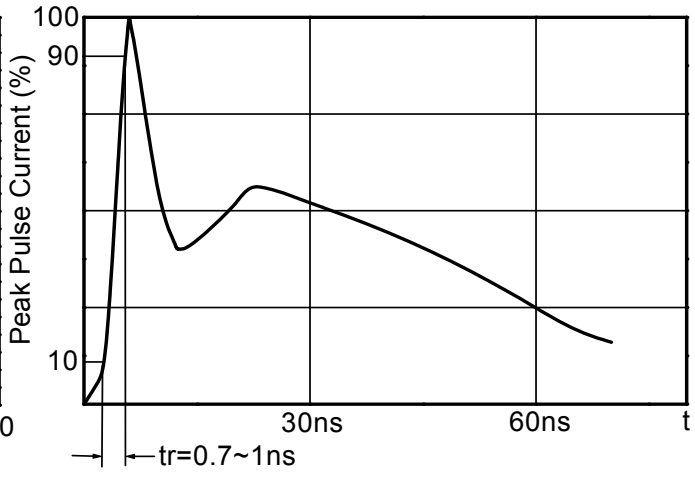
Electronics characteristics (Ta=25 °C, unless otherwise noted)

Parameter	Sym-bol	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 _ source and 50 _ load termination

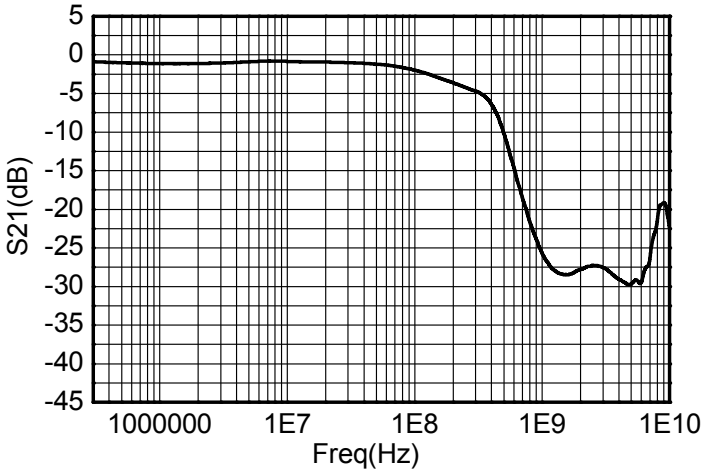


8/20us waveform

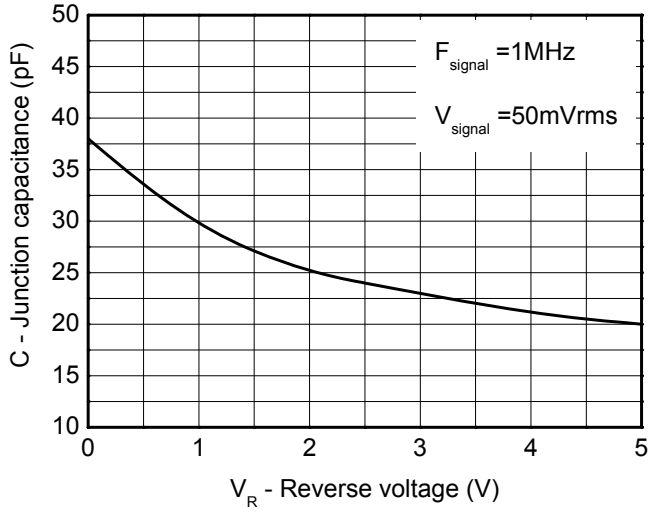


IEC61000-4-2 waveform

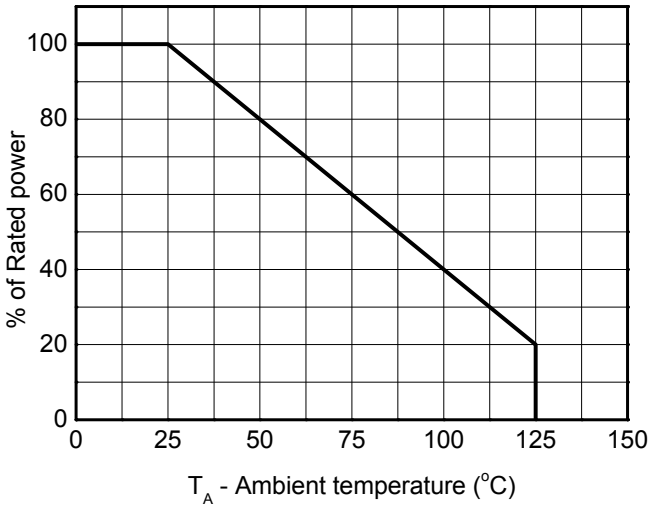
Typical characteristics (Ta=25 C, unless otherwise noted)



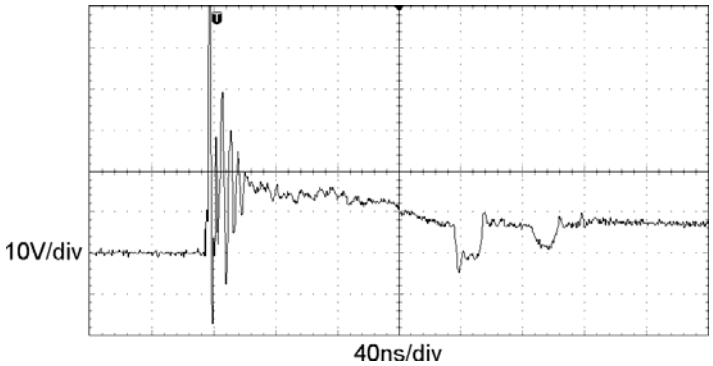
Typical Insertion Loss Curve



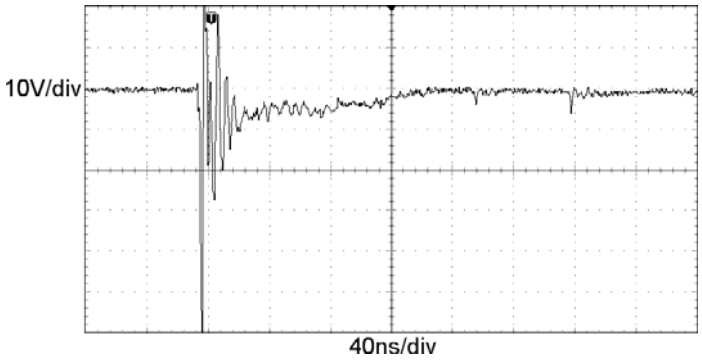
Capacitance vs. Reveres voltage



Power derating vs. Temperature



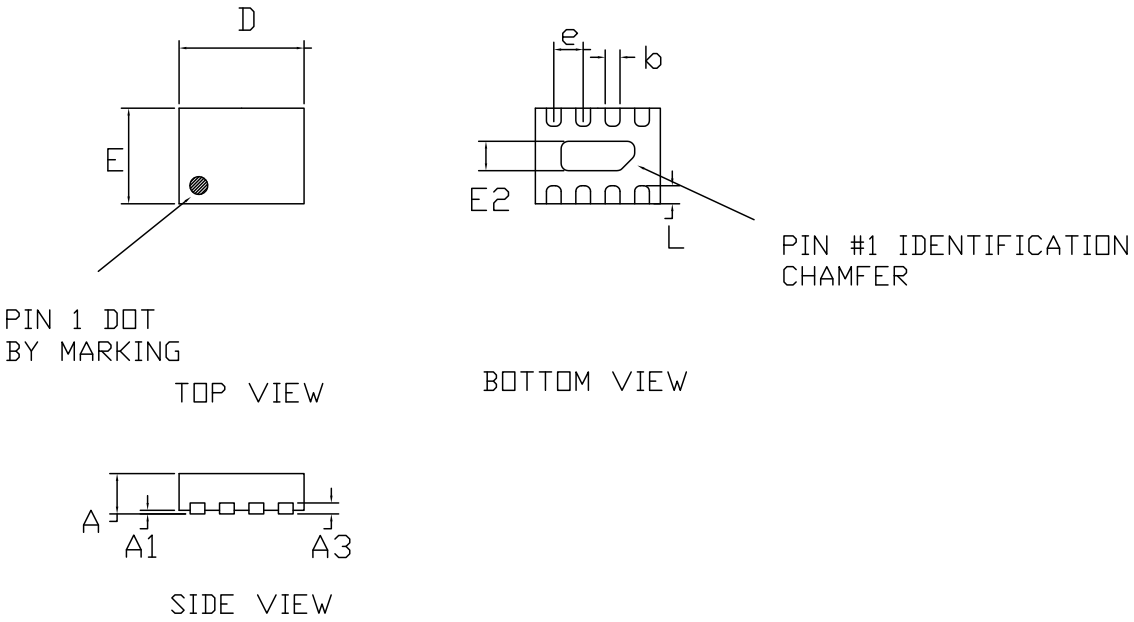
ESD clamping voltage
(IEC61000-4-2 +8kV contact)



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

Package outline dimensions

DFN1713-8L



Symbol	Dimensions In Millimeters		
	Min.	Nom	Max.
A	>0.50	0.55	0.60
A1	0.00	-	0.05
A3	0.15REF		
D	1.65	1.70	1.75
E	1.30	1.35	1.40
b	0.15	0.20	0.25
L	0.17	0.27	0.37
D2	0.85	1.00	1.10
E2	0.25	0.40	0.50
e	0.40BSC		

Recommend PCB Layout (Unit: mm)