

Features

- Monolithic 6-line EMI symmetrical I/O low-pass filter
- ESD Protect for input and output of each line
- 0.4mm pin pitch
- Provide ESD protection for each I/O to
IEC 61000-4-2 (ESD) $\pm 18\text{kV}$ (air/contact)
IEC 61000-4-4 (EFT) 40A (5/50ns)
IEC 61000-4-5 (Lightning) 4A (8/20 μs)
- For low operating voltage applications: 5V and below.
- Fast turn-on and Low clamping voltage
- Solid-state silicon-avalanche and active circuit triggering technology
- Dual Flat No-lead (DFN) packaging and small PCB space occupying: $\leq 3.4\text{ mm}^2$
- High reliability provided by monolithic integration
- *Lead free package*
- *Green Part*

Applications

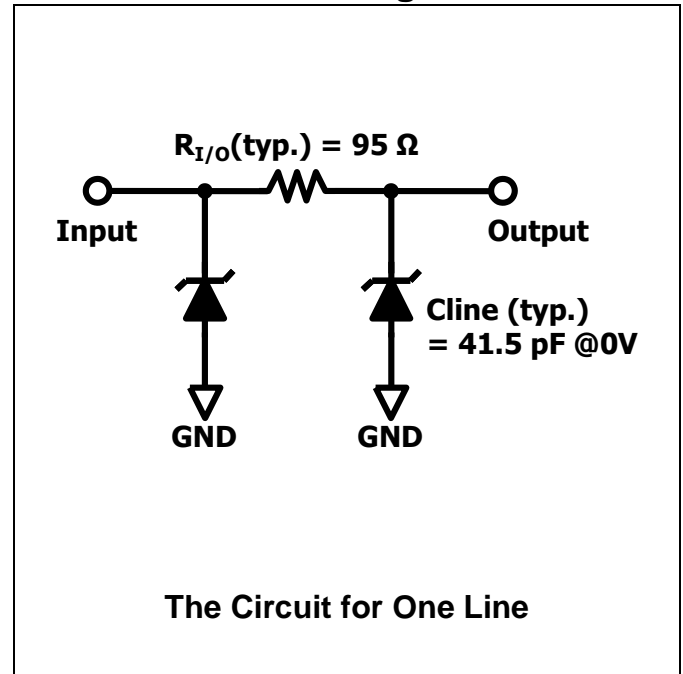
- LCD and camera data lines
- Hand Held Portable Applications: EMI filtering and ESD protection for I/O ports and keypads

Description

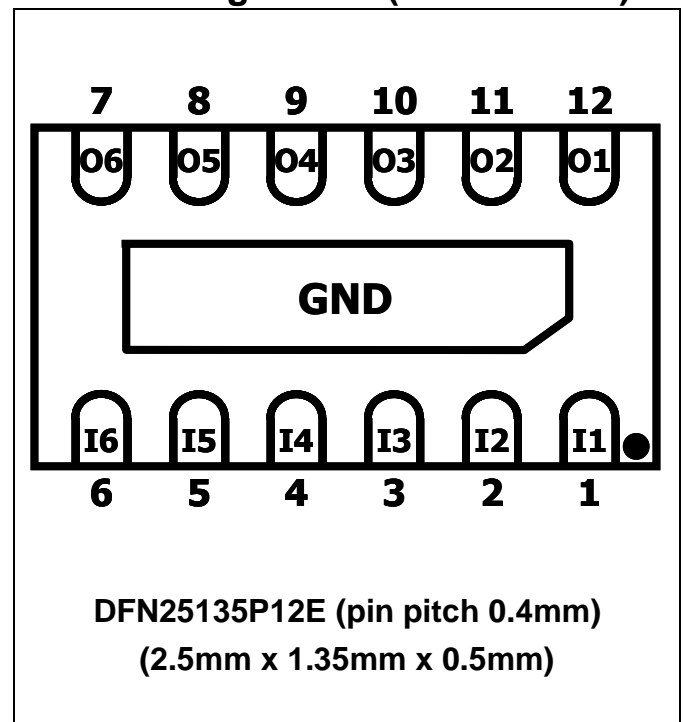
The AZM-LCD06-06F is a 6-line monolithically and highly integrated EMI symmetrical I/O low-pass filter designed to suppress EMI noise in all systems subjected to electromagnetic interferences.

In addition to suppress EMI noise, the AZM-LCD06-06F also includes an ESD protection circuitry at each I/O of each line, which prevents the device from destruction or interference when subjected to ESD stress up to IEC 61000-4-2, Level 4 ($\pm 15\text{kV}$ air, $\pm 8\text{kV}$ contact discharge).

Circuit Diagram



Pin Configuration (Bottom Side)



SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS (T _A = 25°C, unless otherwise specified)			
PARAMETER	SYMBOL	RATING	UNITS
Operating DC Voltage (each I/O to GND)	V _{DC}	5.5	V
Peak Pulse Current (tp=8/20μs)	I _{PP} (Note 1)	4	A
Each I/O to GND, ESD per IEC 61000-4-2 (Air/contact)	V _{ESD}	±18	kV
Lead Soldering Temperature	T _{SOL}	260 (10 sec.)	°C
Operating Temperature	T _{OP}	-55 to +125	°C
Storage Temperature	T _{STO}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS						
PARAMETER	SYMBOL	CONDITIONS	MINI	TYP	MAX	UNITS
Reverse Stand-Off Voltage	V _{RWM}	T=25 °C, each I/O to GND.			5	V
Reverse Leakage Current	I _{Leak}	V _{RWM} = 5V, T=25 °C, each line to GND.			1	μA
Reverse Breakdown Voltage	V _{BV}	I _{BV} = 1mA, T=25 °C, each line to GND.	5.5		9	V
Forward Voltage	V _F	I _F = 15mA, T=25 °C, GND to Each I/O.		0.85		V
Surge Clamping Voltage (Note 1)	V _{CL-surge}	I _{PP} = 4A, tp=8/20μs, T=25 °C, Each I/O to GND.		7.7		V
ESD Clamping Voltage (Note 2)	V _{CL-ESD}	IEC 61000-4-2 +8kV (I _{TLP} = 16A), Contact mode, T=25 °C, each I/O to GND.		9.0		V
ESD Dynamic Turn-on Resistance	R _{dynamic}	IEC 61000-4-2 0~+8kV, Contact mode, T=25 °C, each I/O to GND.		0.13		Ω
Series Resistance between Input and Output	R _{I/O}	T=25 °C.		95		Ω
Input Capacitance per Line (0V)	C _{Line_0V}	V _R = 0V, f = 1MHz, T=25 °C, each line to GND.	30	41.5	53	pF
Input Capacitance per Line (2.5V)	C _{Line_2.5V}	V _R = 2.5V, f = 1MHz, T=25 °C, each line to GND.	18	25	32	pF

Note 1: The Peak Pulse Current measured conditions: tp= 8/20μs, 2Ω source impedance.

Note 2: ESD Clamping Voltage was measured by Transmission Line Pulsing (TLP) System.

TLP conditions: Z₀= 50Ω, t_p= 100ns, t_r= 1ns.

Typical Characteristics

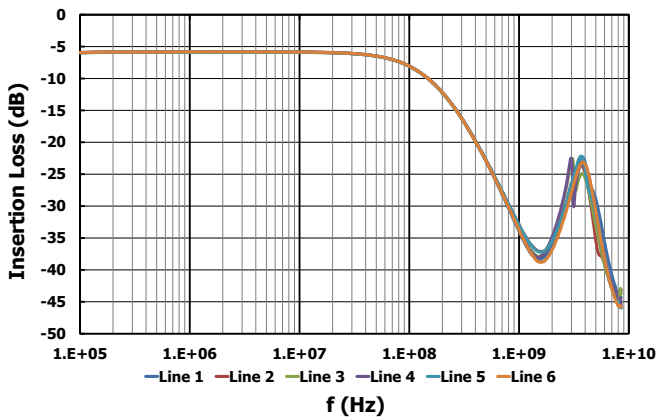


Figure 1. S21 (dB) Attenuation Measurement.

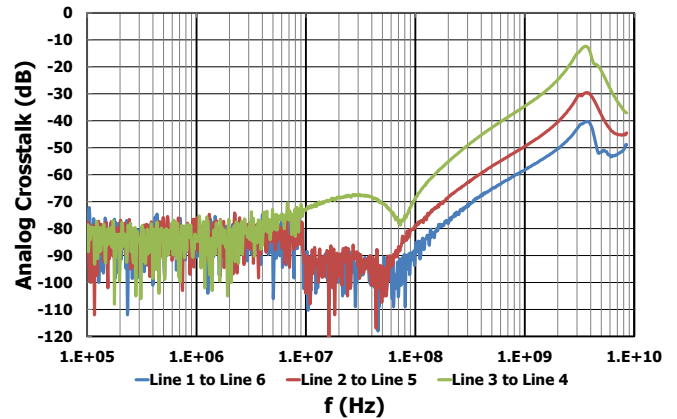


Figure 2. Analog Crosstalk Measurement.

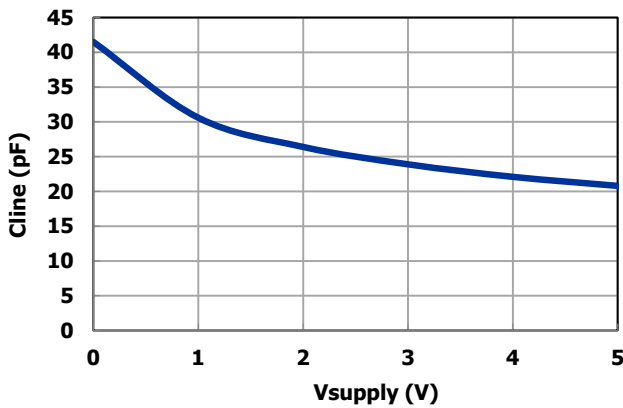


Figure 3. Line Capacitance versus Applied Voltage (typical values).

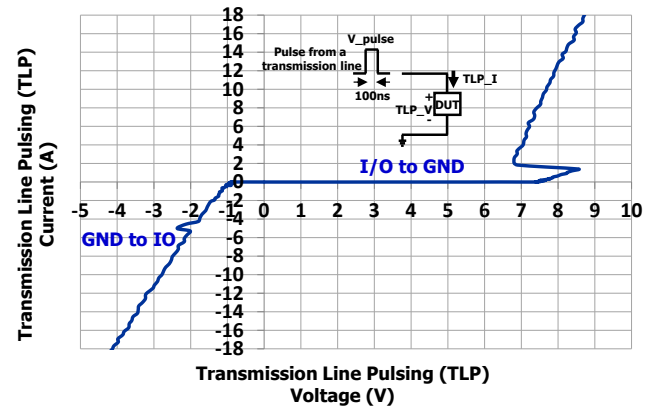
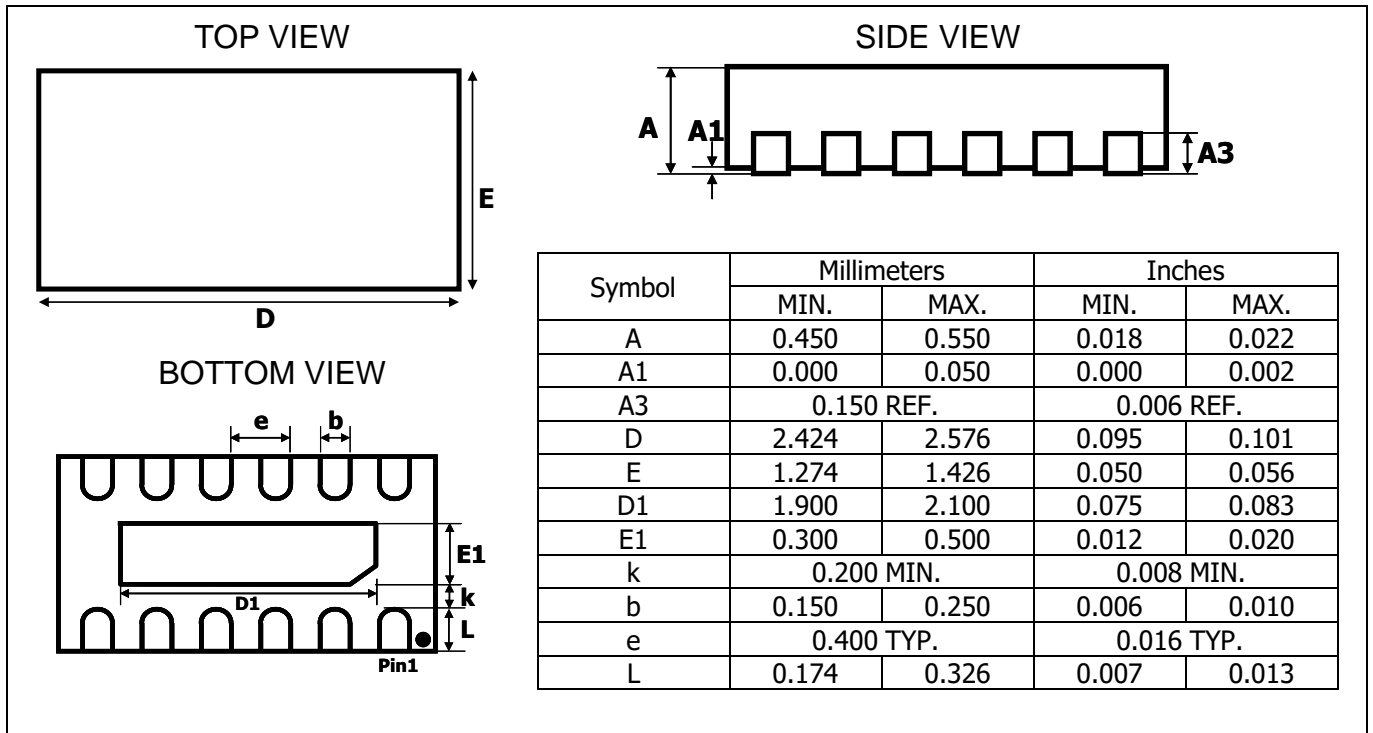


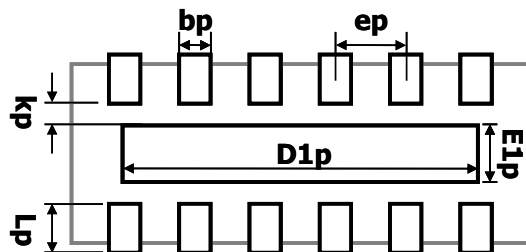
Figure 4. Transmission Line Pulsing (TLP) Measurement for Each I/O of Each Line.

Mechanical Details

DFN25135P12E PACKAGE DIAGRAMS



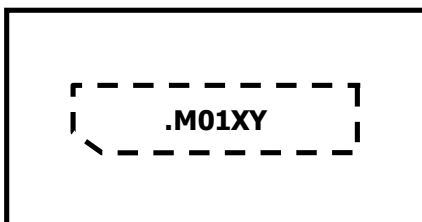
LAND LAYOUT



Symbol	Millimeters	Inches
D1p	2.200	0.087
E1p	0.400	0.016
kp	0.190	0.007
bp	0.220	0.009
ep	0.400	0.016
Lp	0.500	0.020

Notes: This LAND LAYOUT is for reference purposes only. Please consult your manufacturing partners to ensure what your company's PCB design guidelines are met.

Marking Code



. = Pin1 orientation
M01 = Device Code
X = Date Code
Y = Control Code

Part Number	Marking Code
AZM-LCD06-06F.R7G (Green Part)	.M01XY

Note: Green means Pb-free, RoHS, and Halogen free compliant.



Ordering Information

PN#	Material	Type	Reel size	MOQ	MOQ/internal box	MOQ/carton
AZM-LCD06-06F.R7G	Green	T/R	7 inches	3,000/reel	4 reels =12,000/box	6 boxes =72,000/carton

Revision History

Revision	Modification Description
Revision 2020/08/10	Formal Release.