EMIF01-5250SC5

Application Specific Discretes
A.S.D.™

EMI FILTER
WITH ESD PROTECTION

MAIN APPLICATIONS

Where EMI filtering in ESD sensitive equipment is required :

- Mobile phone : handsets and accessories
- RF communications

DESCRIPTION

The EMIF01-5250SC5 is a highly integrated T-filter designed to suppress EMI / RFI noise on I/O ports of mobile phones or RF communication equipment.

This filter includes ESD protection circuitry which prevents device destruction when subjected to ESD discharges.

The comprehensive layout of the EMIF01-5250SC5 filter allows design flexibility on high density boards.

FEATURES

- T-filtering functions for 2 wires.
- ESD protection of 15 kV (air discharge) per IEC61000-4-2
- Breakdown voltage : V_{BR} = 6 V min.
- Low leakage current < 1 µA

BENEFITS

- EMI / RFI noise suppression.
- Enhanced ESD protection : IEC1000-4-2 level 4
- One of the smallest protection circuits available
- High flexibility in the design of high density boards

COMPLIES WITH THE FOLLOWING STANDARDS :

IEC61000-4-2	15kV	(air discharge)
	8 kV	(contact discharge)

SOT23-5L (SC-59A)

FUNCTIONAL DIAGRAM

R = 52 Ω tolerance (15%

C = 50 pF tolerance (15%

D = Zener diode

Cz = Capacitance of the zener diode

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ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C)

Symbol	Parameter and test conditions	Value	Unit
V_{PP}	ESD discharge IEC61000-4-2, air discharge ESD discharge IEC61000-4-2, contact discharge	15 8	kV
T_j	Junction temperature	150	°C
T_{op}	Operating temperature range	-30 to + 85	°C
T_{stg}	Storage temperature range	-55 to +150	°C
T_L	Lead temperature for soldering during 10s	260	°C

ELECTRICAL CHARACTERISTICS of the ZENER DIODE (Tamb = 25 °C)

Symbol	Parameter
V_{BR}	Breakdown voltage
I_{RM}	Leakage current
Rd	Dynamic impedance
C_Z	Zener capacitance
trr	Reverse recovery time

Symbol	Test conditions	Min.	Typ.	Max.	Unit
V_{BR}	I_R = 1 mA	6	7	8	V
I_{RM}	V_{RM} = 3V			1	µA
Rd	I_{pp} = 10 A, t_p = 2.5 µs		0.55		Ω
Cz	0 V bias, V_{RMS} = 30 mV, F = 1 MHz		90		pF
trr	I_F = 10 mA, dI_F/dt = 20 A/µs, R_L = 100 Ω, Tj = 25 °C		40		ns

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ATTENUATION BEHAVIOR

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ESD BEHAVIOR

Fig 2 : ESD measurement conditions

Fig 3 : ESD behavior on IEC61000-4-2 air discharge at input (typical value)

Fig 4 : ESD behavior on IEC61000-4-2 air discharge at output (typical value)

Figures 3 and 4 show the EMIF01-5250SC5 response to air and contact discharge conditions respectively at input and output pins. These figures indicate that the response is spontaneous and the output level is kept at safe operating voltages.

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ORDER CODE

EMIF 01 - 5250 SC5

- EMIF → ELECTRO MAGNETIC INTERFERENCE FILTER
- 01 → NUMERICAL CODE
- 5250 → R & C values
- SC5 → PACKAGE : SOT23 -5L

MARKING

Type & order code	Marking	Packaging	Base qty (pcs)
EMIF01-5250SC5	EMIF	tape & reel	3000

PACKAGE MECHANICAL DATA

SOT23-5L

REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.90		1.45	0.035		0.057
A1	0		0.10	0		0.004
A2	0.90		1.30	0.035		0.0512
b	0.35		0.50	0.0137		0.02
c	0.09		0.20	0.004		0.008
D	2.80		3.00	0.11		0.118
E	1.50		1.75	0.059		0.0689
e		0.95			0.0374	
H	2.60		3.00	0.102		0.118
L	0.10		0.60	0.004		0.024
θ			10°			10°

FOOT PRINT

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