

Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[STMicroelectronics](#)
[EMIF02-MIC02F2](#)

For any questions, you can email us directly:

sales@integrated-circuit.com



IPAD™

EMIF02-MIC02F1

2 LINES EMI FILTER AND ESD PROTECTION

MAIN PRODUCT CHARACTERISTICS:

Where EMI filtering in ESD sensitive equipment is required :

- Mobile phones and communication systems
- Computers, printers and MCU Boards

DESCRIPTION

The EMIF02-MIC02 is a highly integrated devices designed to suppress EMI/RFI noise in all systems subjected to electromagnetic interferences. The EMIF02 flip chip packaging means the package size is equal to the die size.

This filter includes an ESD protection circuitry which prevents the device from destruction when subjected to ESD surges up 15kV.

BENEFITS

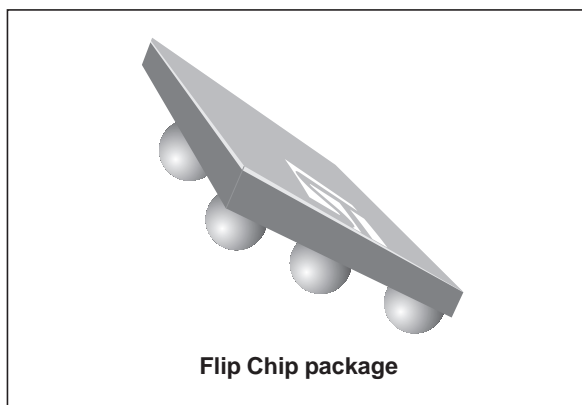
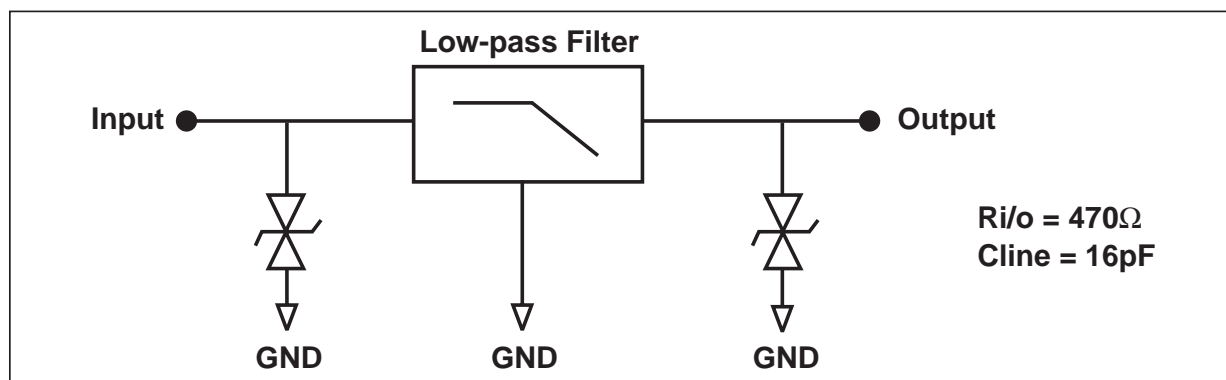
- EMI symmetrical (I/O) low-pass filter
- High efficiency in EMI filtering
- Very low PCB space consuming: 1.07mm x 1.57mm
- Very thin package: 0.65 mm
- High efficiency in ESD suppression
- High reliability offered by monolithic integration
- High reducing of parasitic elements through integration & wafer level packaging.

COMPLIES WITH THE FOLLOWING STANDARDS: IEC61000-4-2

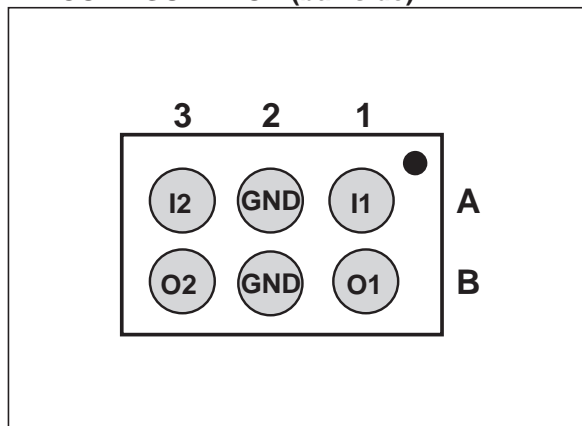
Level 4	on input pins	15kV	(air discharge)
		8 kV	(contact discharge)
Level 1	on output pins	2kV	(air discharge)
		2kV	(contact discharge)

MIL STD 883E - Method 3015-6 Class 3

BASIC CELL CONFIGURATION



PIN CONFIGURATION (ball side)



TM : IPAD is a trademark of STMicroelectronics.

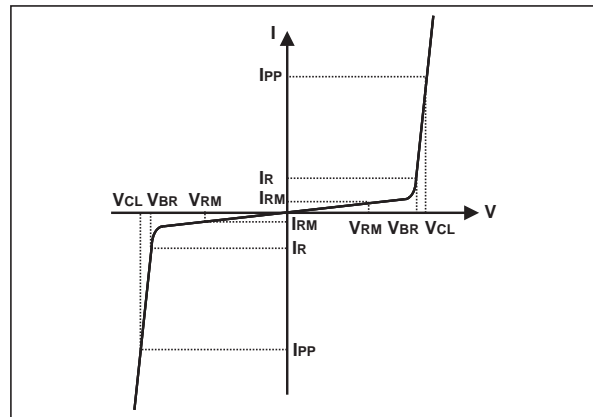
EMIF02-MIC02F1

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter and test conditions	Value	Unit
T_j	Maximum junction temperature	125	°C
T_{op}	Operating temperature range	-40 to + 85	°C
T_{stg}	Storage temperature range	-55 to 150	°C

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$)

Symbol	Parameter
V_{BR}	Breakdown voltage
I_{RM}	Leakage current @ V_{RM}
V_{RM}	Stand-off voltage
V_{CL}	Clamping voltage
R_d	Dynamic impedance
I_{PP}	Peak pulse current
$R_{I/O}$	Series resistance between Input & Output
C_{line}	Input capacitance per line



Symbol	Test conditions	Min.	Typ.	Max.	Unit
V_{BR}	$I_R = 1\text{ mA}$	14	16		V
I_{RM}	$V_{RM} = 12\text{V per line}$			500	nA
$R_{I/O}$		423	470	517	Ω
C_{line}	@ 0V		16		pF

Fig. 1: S21(dB) attenuation measurement and Aplac simulation.

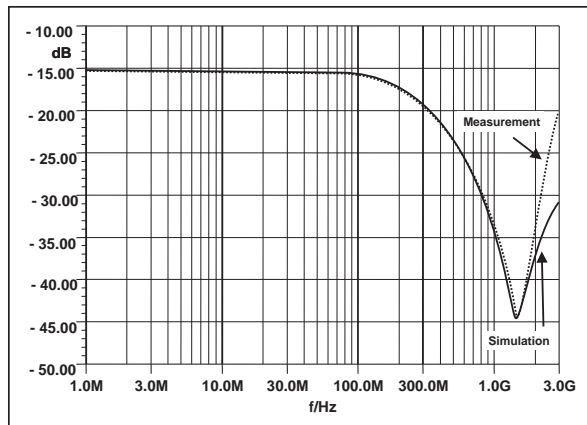
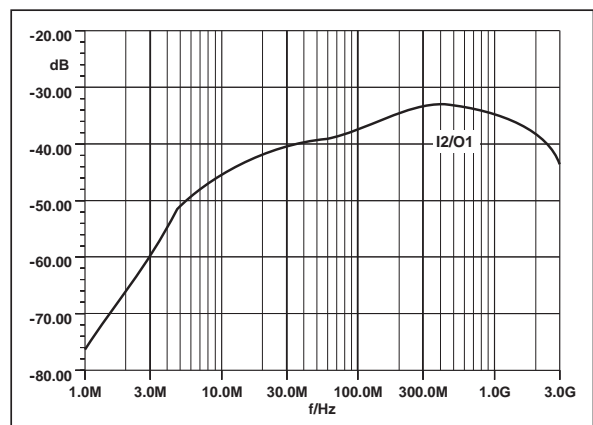


Fig. 2: Analog crosstalk measurements.



EMIF02-MIC02F1

Fig. 3: Digital crosstalk measurement.

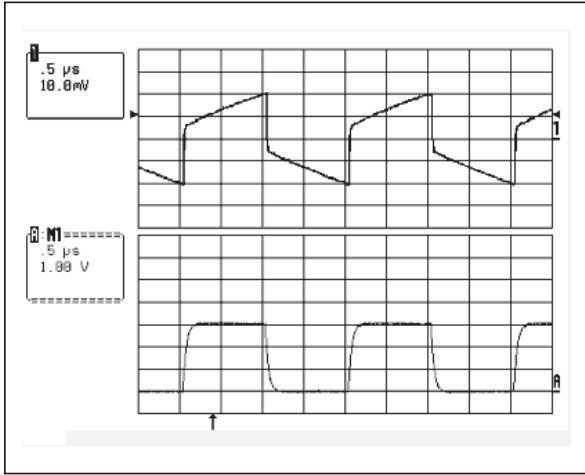


Fig. 4: ESD response to IEC61000-4-2 (+15kV air discharge) on one input V(in) and on one output (Vout).

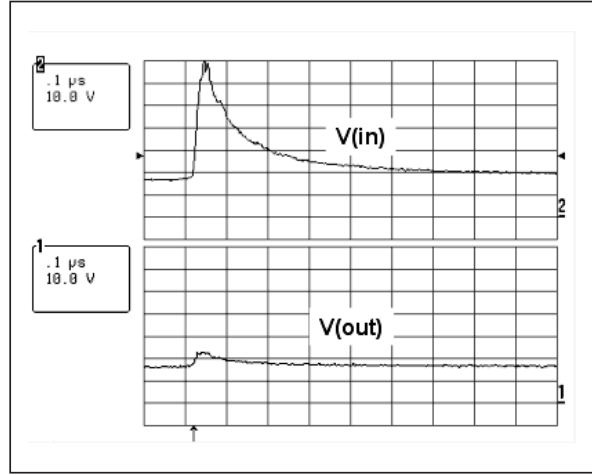


Fig. 5: ESD response to IEC61000-4-2 (-15kV air discharge) on one input V(in) and on one output (Vout).

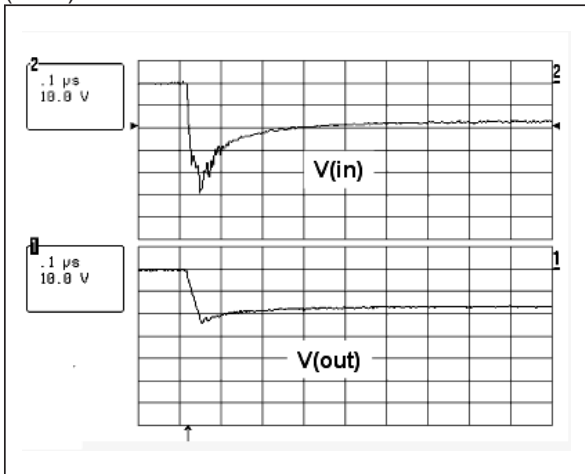
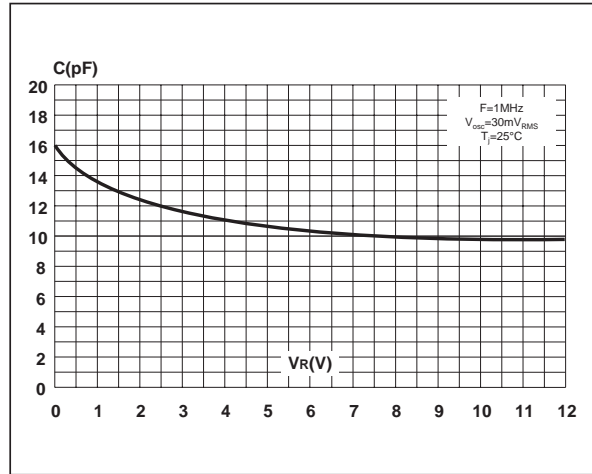
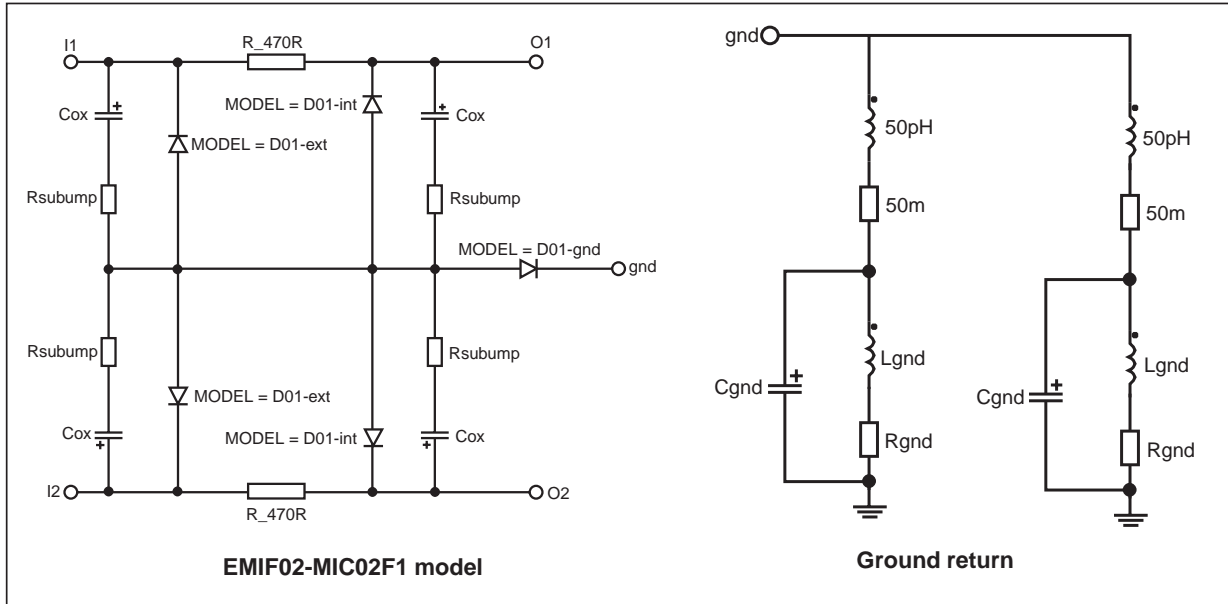


Fig. 6: Line capacitance versus applied voltage.



EMIF02-MIC02F1

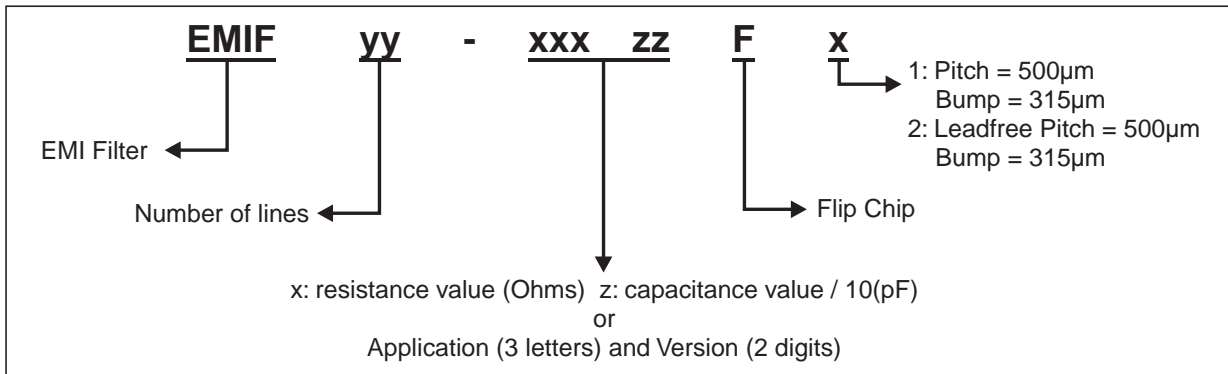
Aplac model.



Aplac parameters.

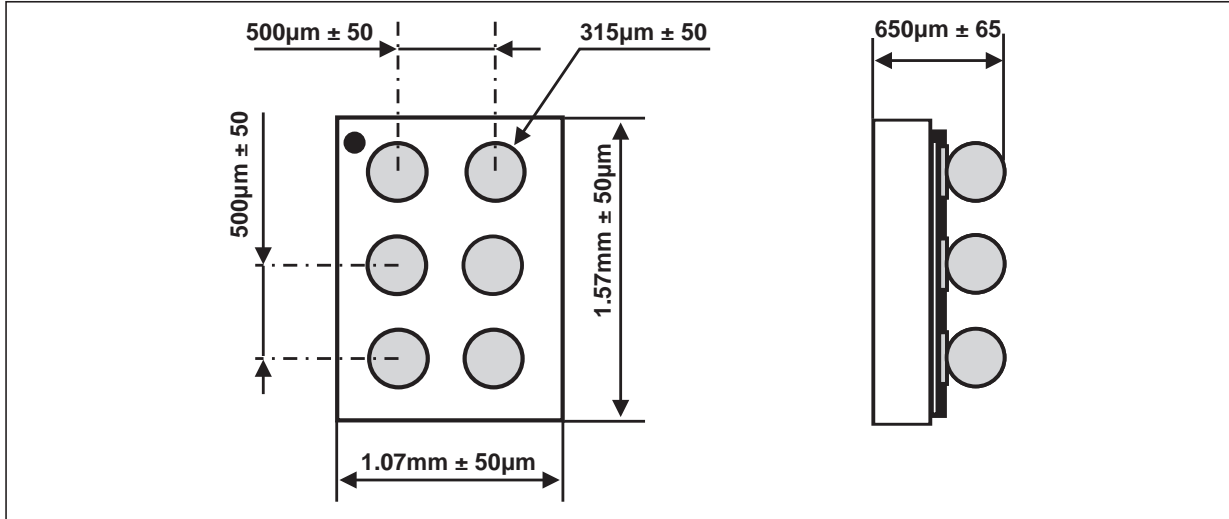
Model D01-ext	Model D01-int	Model D01-gnd	aplacvar Ls 400pH
BV = 7	BV = 7	BV = 7	aplacvar Rs 100m
CJO = Cz_ext	CJO = Cz_int	CJO = Cz_gnd	aplacvar R_470R 482.6
IBV = 1u	IBV = 1u	IBV = 1u	aplacvar Cz_ext 8.73pF
IKF = 1000	IKF = 1000	IKF = 1000	aplacvar Rs_ext 850m
IS = 10f	IS = 10f	IS = 10f	aplacvar Cz_int 2.9pF
ISR = 100p	ISR = 100p	ISR = 100p	aplacvar Rs_int 850m
N = 1	N = 1	N = 1	aplacvar Cz_gnd 215.61pF
M = 0.3333	M = 0.3333	M = 0.3333	aplacvar Rs_gnd 470m
RS = Rs_ext	RS = Rs_int	RS = Rs_gnd	aplacvar Rgnd 10m
VJ = 0.6	VJ = 0.6	VJ = 0.6	aplacvar Lgnd 48pH
TT = 50n	TT = 50n	TT = 50n	aplacvar Cgnd 0.15pF
			aplacvar Cox 3.05pF
			aplacvar Rsubump 200m

ORDER CODE

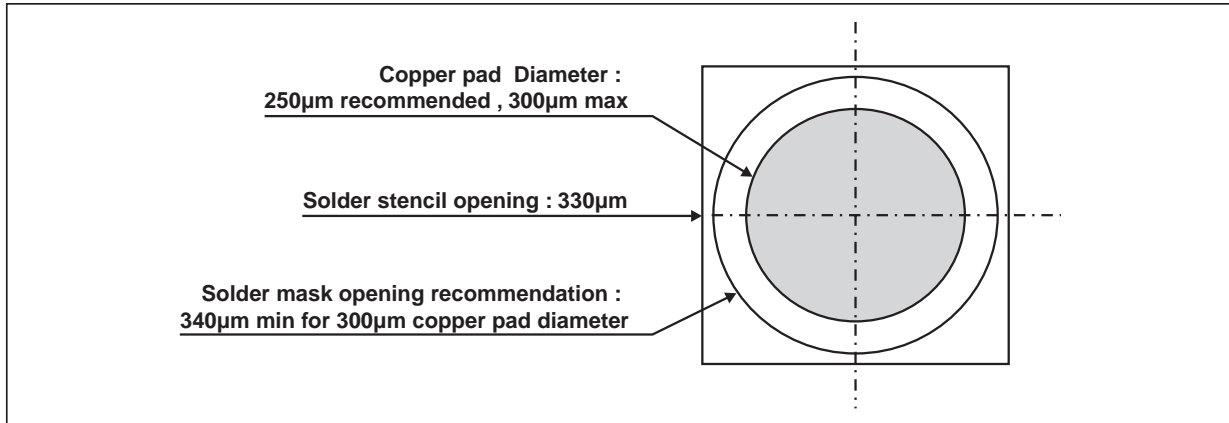


EMIF02-MIC02F1

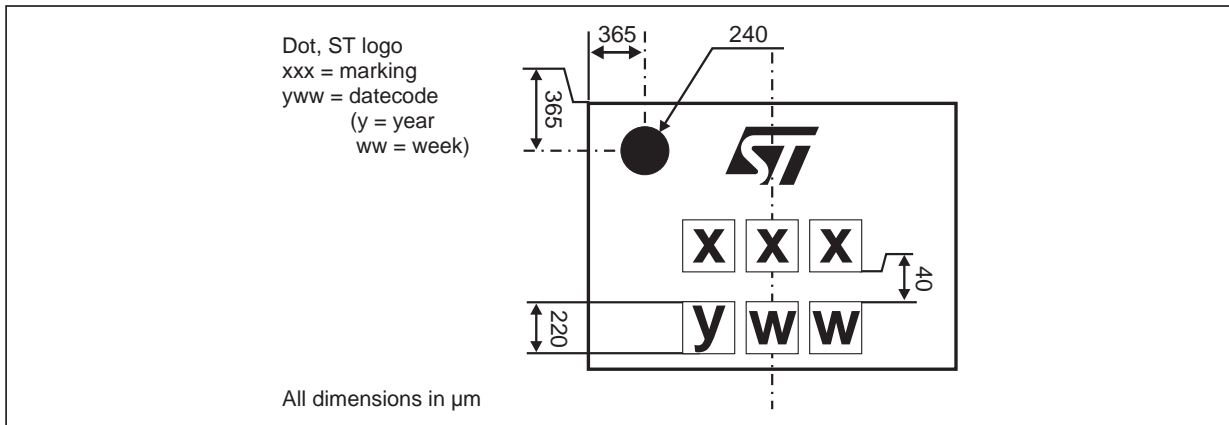
**PACKAGE MECHANICAL DATA
FLIP CHIP**



FOOT PRINT RECOMMENDATIONS

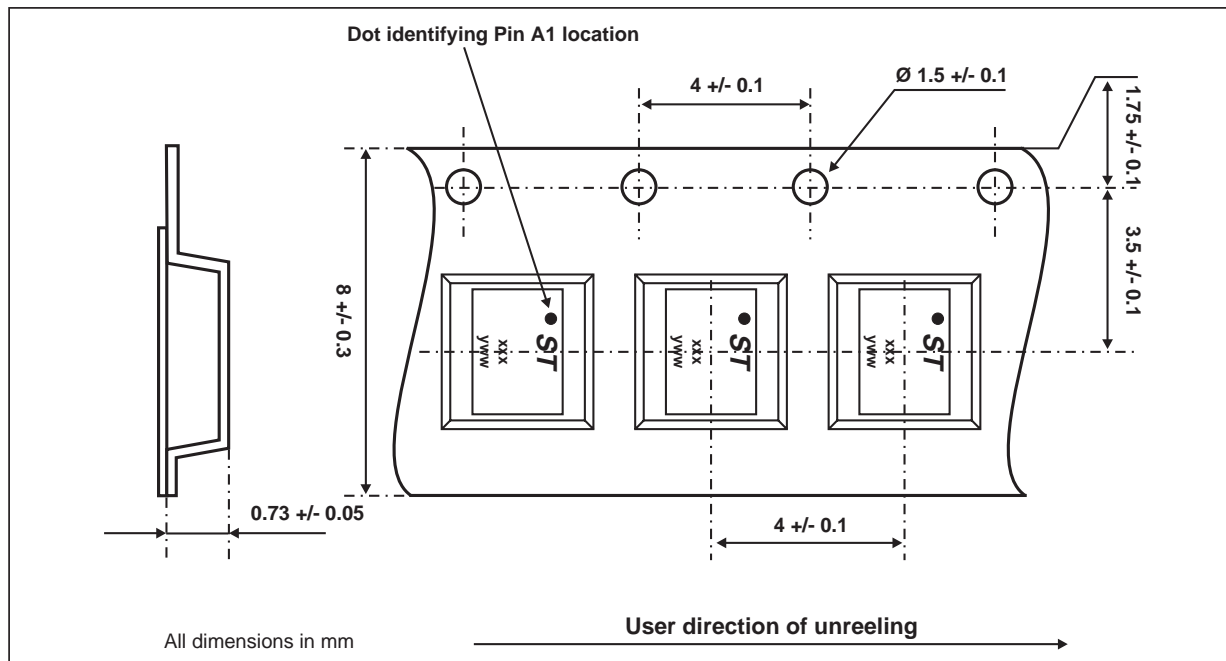


MARKING



EMIF02-MIC02F1

PACKING



OTHER INFORMATION

Ordering code	Marking	Package	Weight	Base qty	Delivery mode
EMIF02-MIC02F1	FJT	Flip Chip	2.3 mg	5000	Tape & reel (7")

Note: More packing informations are available in the application note AN1235: "Flip-Chip: Package description and recommendations for use"

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics.

All other names are the property of their respective owners.

© 2003 STMicroelectronics - All rights reserved.

STMicroelectronics GROUP OF COMPANIES

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States

www.st.com