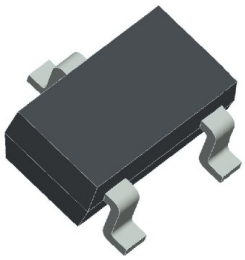
200W Dual Line CAN Bus Protector

DESCRIPTION

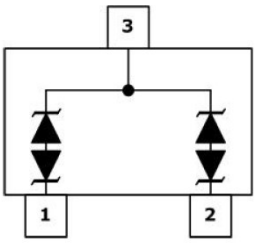
The LSM24QC has been designed to protect the CAN transceiver in high-speed and fault tolerant networks from ESD and other harmful transient voltage events. This device provides bidirectional protection for each data line with a single compact SOT-23 package, giving the system designer a low cost option for improving system reliability and meeting stringent EMI requirements.

PACKAGE OUTLINE

SOT-23



PIN CONFIGURATION



FEATURES

✧IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
✧IEC61000-4-4 (EFT) 40A (5/50ηs)
✧IEC61000-4-5 (Lighting) 3A (8/20μs)
✧200 Watts Peak Pulse Power per (tp=8/20μs)
✧Working voltages : 24V
✧Low clamping voltage
✧Low leakage current

MACHANICAL DATA

✧SOT-23 package
✧Flammability Rating: UL 94V-0
✧Packaging: Tape and Reel
✧High temperature soldering guaranted:260℃/10s
✧Reel size: 7 inch

APPLICATIONS

✧Industrial Control Networks
✧Smart Distribution Systems
✧Automotive Networks
✧Low and High-Speed CAN
✧Fault Tolerant CAN

ORDERING INFORMATION

✧Device: LSM24QC
✧Package: SOT-23
✧Marking: C24
✧Material: Halogen free
✧Packing: Tape & Reel
✧Quantity per reel: 3,000pcs

ABSOLUTE MAXIMUM RATINGABSOLUTE MAXIMUM RATING

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±30 ±20	kV
P_{PP}	Peak Pulse Power (8/20μs)	200	W
T_{OPT}	Operating Temperature	-55/+150	°C
T_{STG}	Storage Temperature	-55/+150	°C
T_L	Lead Soldering Temperature	260 (10 sec.)	°C

ELECTRICAL CHARACTERISTICS (Tamb=25° C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage	Pin 1,2 to Pin3			24	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA Pin 1,2 to Pin3	26		32	V
I_R	Reverse Leakage Current	V_{RWM} = 24V Pin 1,2 to Pin3			1	μA
V_{C1}	Clamping Voltage 1	I_{PP} = 1A, t_p = 8/20μs Pin 1,2 to Pin3			36	V
V_{C2}	Clamping Voltage 2	I_{PP} = 3A, t_p = 8/20μs Pin 1,2 to Pin3			50	V
C_J	Junction Capacitance	V_R = 0V, f = 1MHz Pin 1,2 to Pin3		13	17	pF

ELECTRICAL CHARACTERISTICS CURVE

Fig 1 8/20μs Waveform per IEC61000-4-5

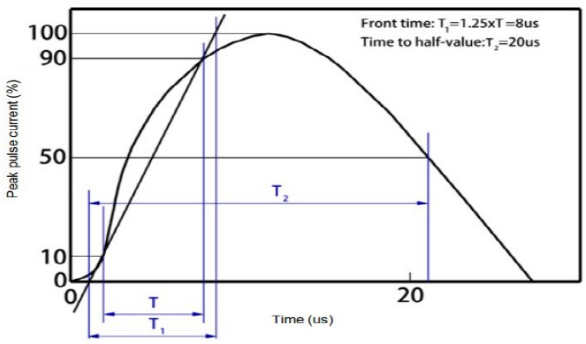


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

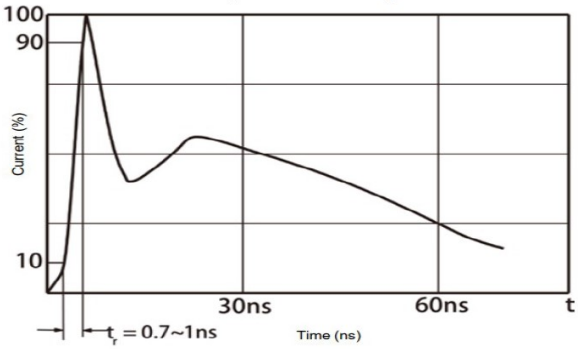


Fig 3 Voltage vs Capacitance

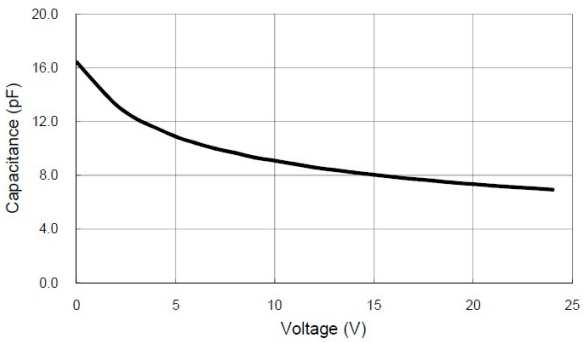
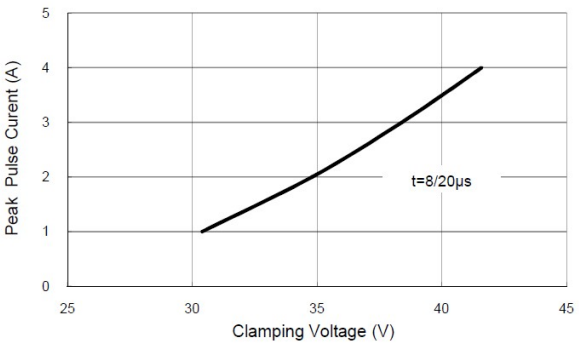
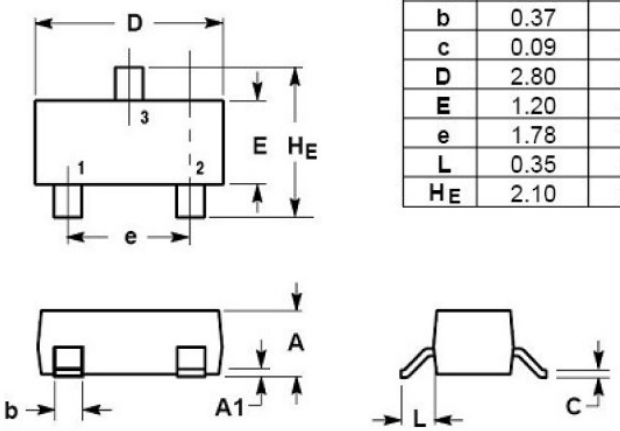


Fig 4 Clamping Voltage vs Peak Pulse Current



SOT-23 PACKAGE OUTLINE DIMENSIONS



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.029
H_E	2.10	2.40	2.64	0.083	0.094	0.104

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