

DESCRIPTION

The SM24QC 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.

FEATURES

- ✧ IEC61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lighting) 3A (8/20 μs)
- ✧ 200 Watts Peak Pulse Power per (tp=8/20 μs)
- ✧ 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 guaranteed: 260°C/10s
- ✧ Reel size: 7 inch

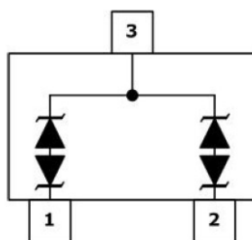
ORDERING INFORMATION

- ✧ Device: SM24QC
- ✧ Package: SOT-23
- ✧ Marking: C24
- ✧ Material: Halogen free
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 3,000pcs

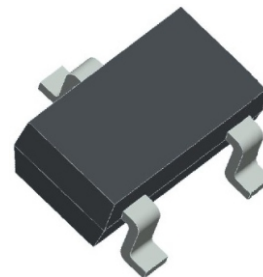
APPLICATIONS

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

PIN CONFIGURATION



PACKAGE OUTLINE



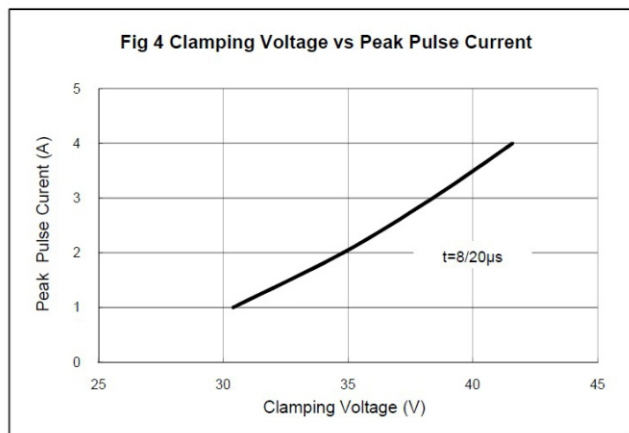
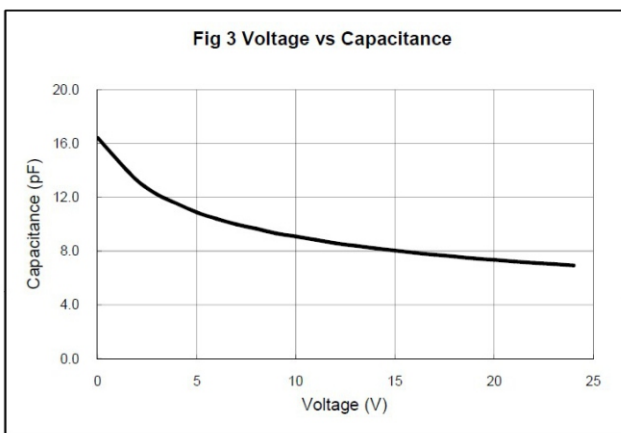
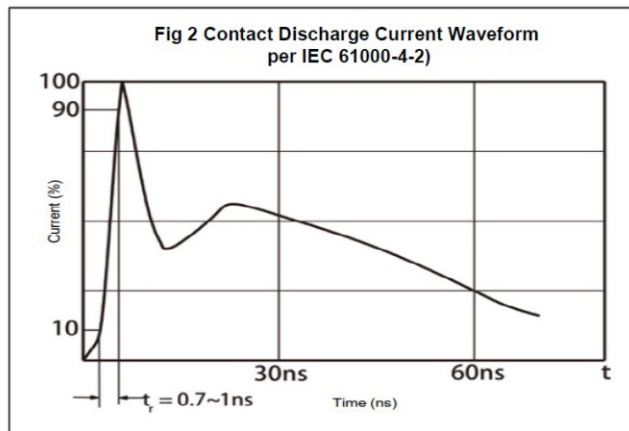
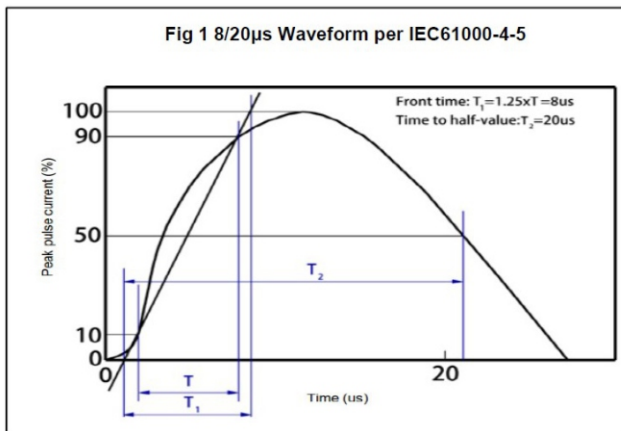
ABSOLUTE MAXIMUM RATING

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 (8/20 μ s)	200	W
T_{OPT}	Operating Temperature	-55/+150	$^{\circ}$ C
T_{STG}	Storage Temperature	-55/+150	$^{\circ}$ C
T_L	Lead Soldering Temperature	260 (10 sec.)	$^{\circ}$ C

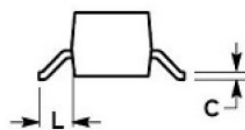
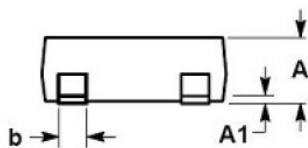
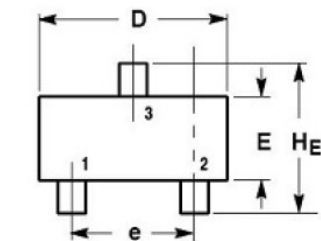
ELECTRICAL CHARACTERISTICS (Tamb=25 $^{\circ}$ C)

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	$I_{PP} = 1A, t_p = 8/20\mu s$ Pin 1,2 to Pin3			36	V
V_{C2}	Clamping Voltage 2	$I_{PP} = 3A, t_p = 8/20\mu s$ 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



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
HE	2.10	2.40	2.64	0.083	0.094	0.104