



# Low Capacitance ESD Protection for High-Speed Serial Interfaces

## CM1263-02SE

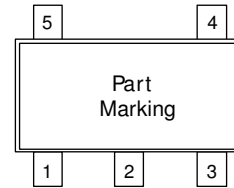
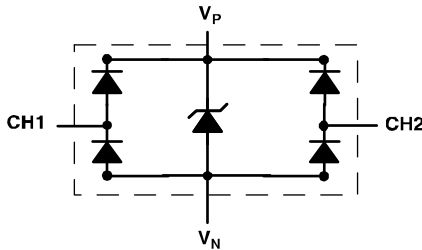
### Features

- 2 channels of ESD protection
- 0.85 pF loading capacitance per channel typical
- Provides ESD protection to IEC61000-4-2 Level 4:
  - ±8kV contact discharge
  - ±15kV air discharge
- RoHS compliant, lead-free finish
- 5-pin SOT-553 package

### Applications

- LCD and camera data lines in wireless handsets that use high-speed serial interfaces such as MDDI, MIPI, MVI and MPL
- I/O port protection for mobile handsets, notebook computers, PDAs etc.
- Wireless handsets
- Handheld PCs/PDAs
- LCD and camera modules

### Electrical Schematic/Packaging



## PIN DESCRIPTIONS

Pin	DESCRIPTION
1	$V_P$
2	$V_N$
3	NC
4	(CH1) ESD Channel #1
5	(CH2) ESD Channel #2

## Ordering Information

PART NUMBERING INFORMATION			
PIN	PACKAGE	LEAD-FREE FINISH	Part Marking
5	SOT-553	CM1263-02SE	L63

Note 1: Parts are shipped in Tape and Reel form unless otherwise specified.

## Specifications

ABSOLUTE MAXIMUM RATINGS		
PARAMETER	RATING	UNITS
Operating Supply Voltage ( $V_p - V_N$ )	6.0	V
Operating Temperature Range	-40 to +85	°C
Storage Temperature Range	-65 to +150	°C
DC Voltage at any channel input	$(V_N - 0.5)$ to $(V_p + 0.5)$	V

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## ELECTRICAL OPERATING CHARACTERISTICS (SEE NOTE 1)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
$V_P$	Operating Supply Voltage ( $V_P-V_N$ )			3.3	5.5	V
$I_P$	Operating Supply Current	$(V_P-V_N)=3.3V$			8.0	$\mu A$
$V_F$	Diode Forward Voltage Top Diode Bottom Diode	$I_F=8mA$ ; $T_A=25^\circ C$	0.60 0.60	0.80 0.80	0.95 0.95	V V
$I_{LEAK}$	Channel Leakage Current	$T_A=25^\circ C$ ; $V_P=5V$ , $V_N=0V$ , $V_{TEST}=0$ to $5V$		0.1	1.0	$\mu A$
$C_{IN}$	Channel Input Capacitance	At 1 MHz, $V_P=3.3V$ , $V_N=0V$ , $V_{IN}=1.65V$		0.85	1.2	pF
$\Delta C_{IN}$	Channel Input Capacitance Matching	At 1 MHz, $V_P=3.3V$ , $V_N=0V$ , $V_{IN}=1.65V$		0.02		pF
$V_{ESD}$	ESD Protection Peak Discharge Voltage at any channel input, in system: a) Contact discharge per IEC 61000-4-2 standard and b) Air discharge per IEC 61000-4-2 standard	$T_A=25^\circ C$ ; Notes 2 and 3  $T_A=25^\circ C$ ; Note 3	$\pm 8$  $\pm 15$			kV  kV
$V_{CL}$	Channel Clamp Voltage Positive Transients Negative Transients	$T_A=25^\circ C$ , $I_{PP} = 1A$ , $t_p = 8/20\mu S$ ; Note 3		+9.96 -1.6		V V
$R_{DYN}$	Dynamic Resistance Positive Transients Negative Transients	$I_{PP} = 1A$ , $t_p = 8/20\mu S$ Any I/O pin to Ground; Note 3		0.96 0.5		$\Omega$ $\Omega$

Note 1: All parameters specified at  $T_A = -40^\circ C$  to  $+85^\circ C$  unless otherwise noted.

Note 2: Standard IEC 61000-4-2 with  $C_{Discharge} = 150pF$ ,  $R_{Discharge} = 330\Omega$ ,  $V_P = 3.3V$ ,  $V_N$  grounded.

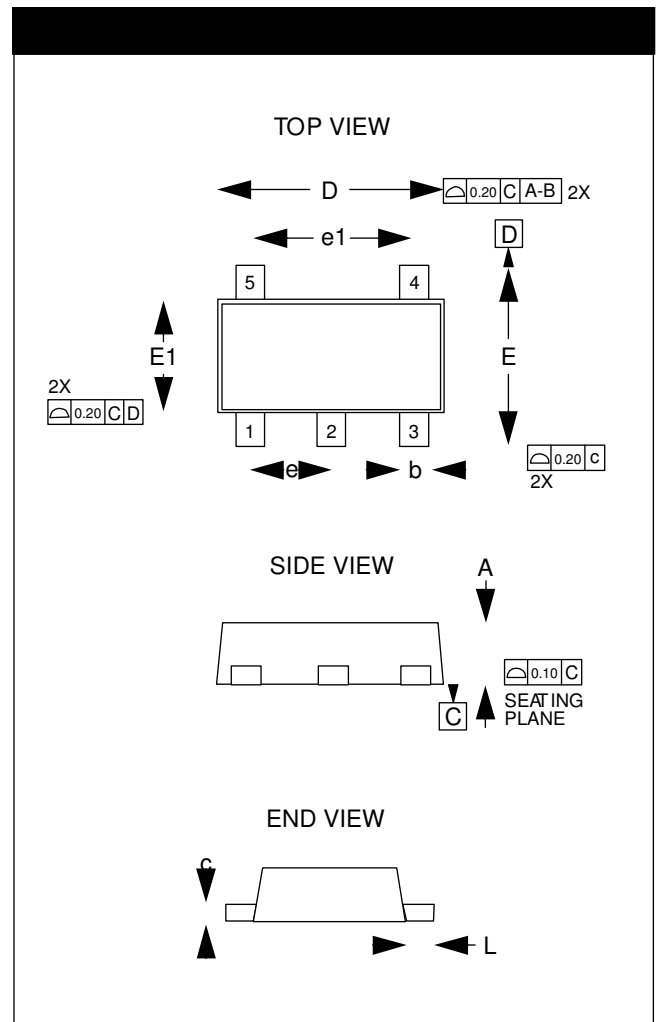
Note 3: These measurements performed with no external capacitor on  $V_P$  ( $V_P$  floating).

## Mechanical Details

### SOT-553 Mechanical Specifications, 5 pin

The CM1263-02SE is supplied in a 5-pin SOT-553 package. Dimensions are presented below.

PACKAGE DIMENSIONS						
Package	SOT-553					
Leads	5					
Dim.	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.50	0.55	0.60	0.020	0.022	0.024
b	0.17	0.22	0.27	0.007	0.009	0.011
c	0.08	0.13	0.18	0.003	0.005	0.007
D	1.60 BSC			0.063 BSC		
E	1.50	1.60	1.70	0.060	0.063	0.067
E1	1.20 BSC			0.047 BSC		
e	0.50 BSC			0.020 BSC		
e1	1.00 BSC			0.040 BSC		
L	0.20 BSC			0.008 BSC		
# per tape and reel	5000 pieces					
Controlling dimension: millimeters						

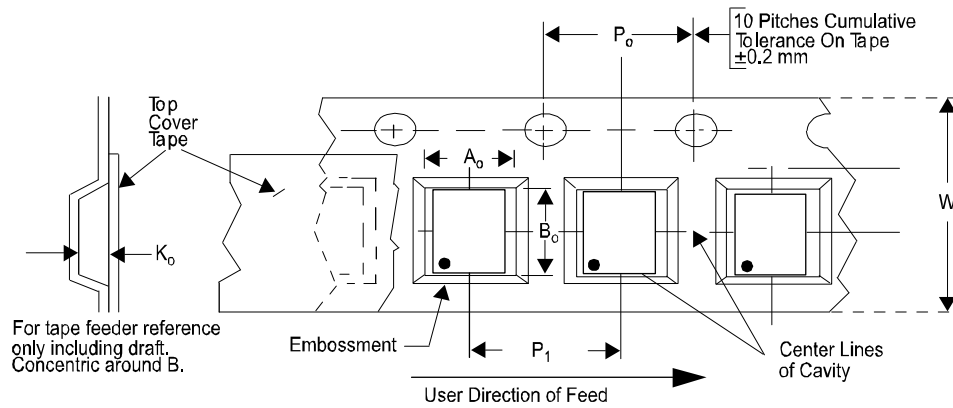



Package Dimensions for SOT-553

# CM1263-02SE

## Tape and Reel Specifications

PART NUMBER	PACKAGE SIZE (mm)	POCKET SIZE (mm) $B_0 \times A_0 \times K_0$	TAPE WIDTH W	REEL DIAMETER	QTY PER REEL	$P_0$	$P_1$
CM1263-02SE	1.60 X 1.60 X 0.55	1.78 X 1.78 X 0.69	8mm	178mm (7")	5000	4mm	4mm



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