

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



# Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China









**Micro Commercial Components** 



Micro Commercial Components 20736 Marilla Street Chatsworth CA 91311

Phone: (818) 701-4933

Fax: (818) 701-4939

## **Features**

- Halogen free available upon request by adding suffix "-HF"
- For sensitive ESD protection
- Excellent clamping capability
- Low leakage
- ESD rating of class 3(>16KV)per Human Body Mode
- For space saving application
- Fast response, response time less than 1ns.
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant /Halogen-Free Version available("P" Suffix designates RoHS Compliant. HF suffix designates Halogen-Free.See ordering information)

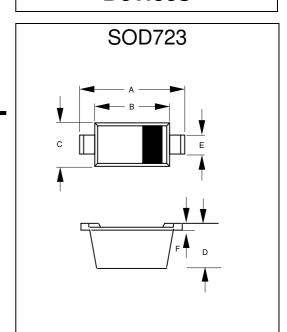
## Maximum Ratings

- Operating Junction &StorageTemperature: -55°C to +150°C
- Maximum Thermal Resistance: 833°C/W Junction To Ambient

Parameter		Symbol	Limits	unit
IEC61000-4-2(ESD)	Air		$\pm 30$	1/1/
	Contact		$\pm 30$	KV
ESD Voltage per human bod		16	KV	
per machine m		400	V	
Power Dissipation	Pd	150	mw	

# ESD3V3D7 Thru ESD12VD7

## 3.3V~12Volts ESD Protection Devices

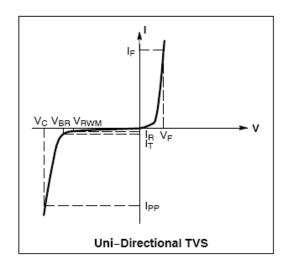


DIMENSIONS					
	INCHES		М		
DIM	MIN	MAX	MIN	MAX	NOTE
Α	.051	.059	1.30	1.50	
В	.035	.043	0.90	1.10	
С	.022	.026	0.55	0.65	
D	.021	.026	0.525	0.65	
Е	.010	.014	0.25	0.35	
F	.003	.006	0.08	0.15	
				·	



#### **ELECTRICAL CHARACTERISTICS** (T<sub>A</sub> = 25°C unless otherwise noted)

Symbol	Parameter			
I <sub>PP</sub>	Maximum Reverse Peak Pulse Current			
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>			
$V_{RWM}$	Working Peak Reverse Voltage			
I <sub>R</sub>	Maximum Reverse Leakage Current @ V <sub>RWM</sub>			
$V_{BR}$	Breakdown Voltage @ I <sub>T</sub>			
I <sub>T</sub>	Test Current			
I <sub>F</sub>	Forward Current			
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub>			
P <sub>pk</sub>	Peak Power Dissipation			
С	Max. Capacitance @V <sub>R</sub> =0 and f =1MHz			



#### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted, V<sub>F</sub> = 0.9 V Max. @ I<sub>F</sub> = 10mA for all types)

	Device Device Marking	V <sub>RWM</sub> (V)	I <sub>R</sub> (μ <b>A</b> )	V <sub>BR</sub> (V) @	I <sub>T</sub> I <sub>PP</sub> (A) *	I <sub>PP</sub> (A) <sup>+</sup>	V <sub>c</sub> (V) @Мах І <sub>РР</sub> *	P <sub>pk</sub> + (W)	C (pF)
Device			$@V_{\text{\tiny RWM}}$	I <sub>⊤</sub> (Note 2)				- μκ ()	- (p- )
	Warking	Max	Max	Min		Max	Max	Max	Тур
ESD3V3D7	E0	3.3	2.5	5.0	1.0	10.4	11.9	113	80
ESD5V0D7	E2	5.0	1.0	6.2	1.0	8.8	13.3	117	65
ESD12VD7	E3	12	1.0	13.5	1.0	5.4	23.7	128	30

<sup>+</sup>Surge current waveform per Figure 1.

#### **TYPICAL CHARACTERISTICS**

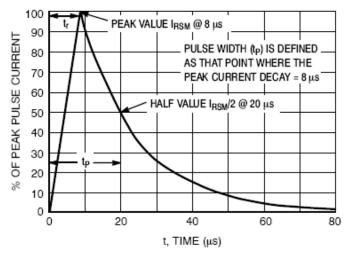
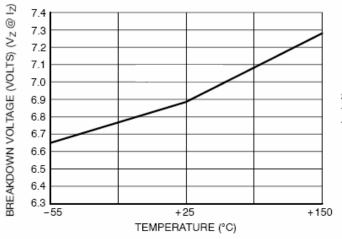


Figure 1. 8 x 20 µs Pulse Waveform

<sup>2.</sup>  $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of 25°C.





20 18 16 14 12 10 8 6 4 2 0 -55 +25 +150 TEMPERATURE (°C)

Figure 2. Typical Breakdown Voltage versus Temperature

Figure 3. Typical Leakage Current versus Temperature



#### **Micro Commercial Components**

### **Ordering Information:**

Device	Packing		
Part Number-TP	Tape&Reel: 8Kpcs/Reel		
Part Number-TP-HF	Tape&Reel: 8Kpcs/Reel; Halogen free		

#### \*\*\*IMPORTANT NOTICE\*\*\*

**Micro Commercial Components Corp.** reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. **Micro Commercial Components Corp.** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp.** and all the companies whose products are represented on our website, harmless against all damages.

#### \*\*\*LIFE SUPPORT\*\*\*

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

#### \*\*\*CUSTOMER AWARENESS\*\*\*

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources. MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.