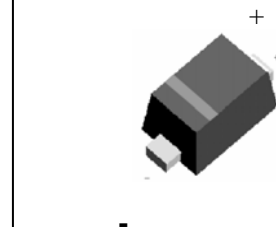


## **CESD3V3D7** ESD Protection Diodes

SOD-723



### DESCRIPTION

The CESD3V3D7 is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

### FEATURES

- Stand-off Voltage: 3.3 V–12 V
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- These are Pb-Free Devices

### Maximum Ratings @T<sub>A</sub>=25°C

Parameter	Symbol	Limits	Unit
IEC61000-4-2(ESD) Air Contact		±30 ±30	KV
ESD voltage per human body model Per machine model		16	KV
		400	V
Total power dissipation on FR-5 board (Note 1)	<b>P<sub>D</sub></b>	100	mW
Thermal Resistance Junction-to-Ambient	R <sub>θJA</sub>	1250	°C/W
Lead Solder Temperature – Maximum (10 Second Duration)	<b>T<sub>L</sub></b>	260	°C
Junction and Storage temperature range	<b>T<sub>J</sub>, T<sub>stg</sub></b>	-55 ~ +150	°C

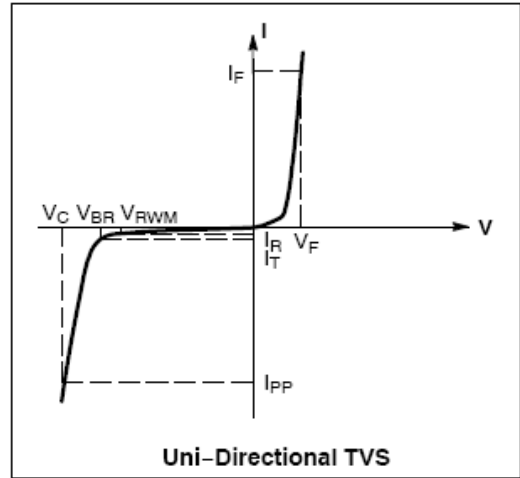
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only.

Functional operation above the Recommended. Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0 x 0.75 x 0.62 in.

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$
$P_{pk}$	Peak Power Dissipation
C	Max. Capacitance @ $V_R=0$ and $f=1\text{MHz}$

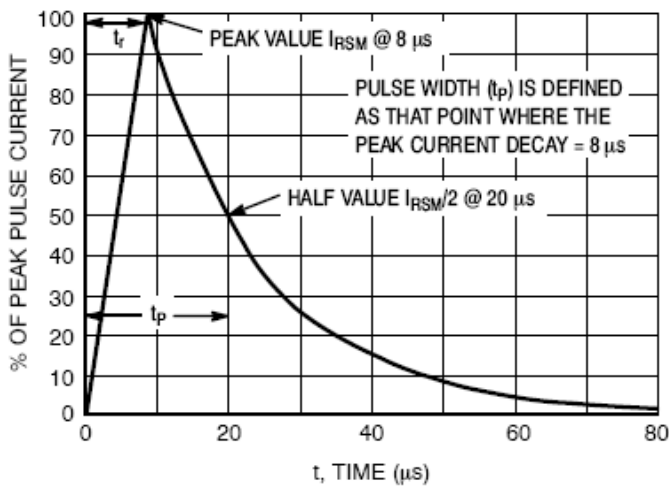

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted,  $V_F = 0.9\text{ V Max.}$  @  $I_F = 10\text{mA}$  for all types)

Device*	Device Marking	$V_{RWM}$ (V)	$I_R$ ( $\mu\text{A}$ ) @ $V_{RWM}$	$V_{BR}$ (V) @ $I_T$ (Note 2)		$I_T$	$I_{PP}$ (A) +	$V_C$ (V) @Max $I_{PP}$ +	$P_{pk}$ + (W)	C (pF)
		Max	Max	Min	Max	mA	Max	Max	Max	Typ
<b>CESD3V3D7</b>	E0	3.3	2.5	5.0	5.9	1.0	10.4	11.9	113	80
<b>CESD5V0D7</b>	E2	5.0	1.0	6.2	7.3	1.0	8.8	13.3	117	65
<b>CESD12VD7</b>	E3	12	1.0	13.5	15.6	1.0	5.4	23.7	128	30

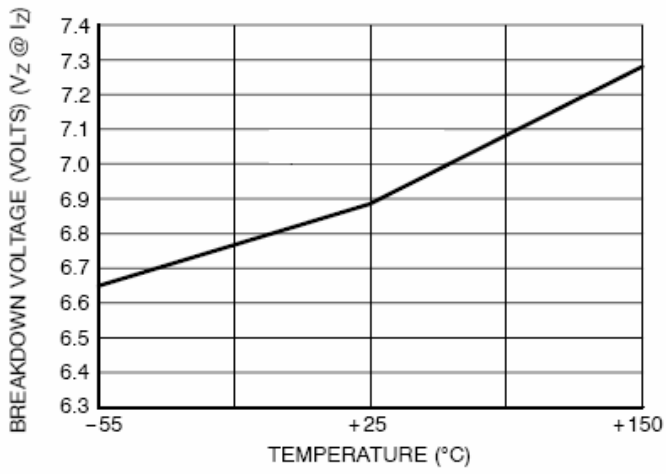
\*Other voltages available upon request.

+Surge current waveform per Figure 1.

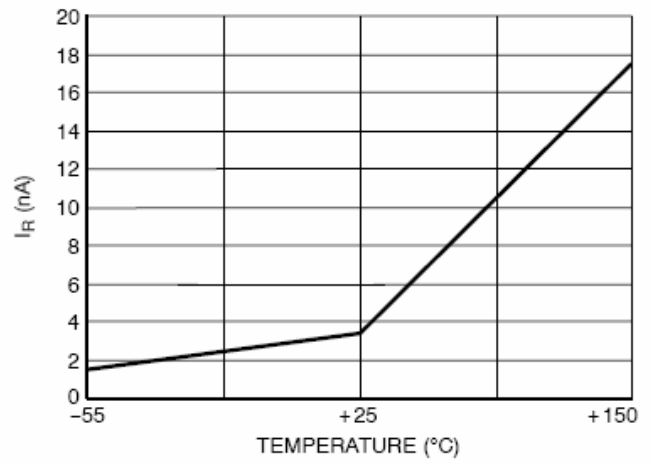
2.  $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of  $25^\circ\text{C}$ .

**TYPICAL CHARACTERISTICS**


**Figure 1. 8 x 20  $\mu\text{s}$  Pulse Waveform**



**Figure 2. Typical Breakdown Voltage versus Temperature**



**Figure 3. Typical Leakage Current versus Temperature**