



**L30ESD5V0C3-2 - L30ESD24VC3-2**

**ESD PROTECTION DEVICE**

**STAND-OFF VOLTAGE – 5.0 ~ 24 Volts  
POWER DISSIPATION - 300 Watts**

**FEATURES**

- 2 Unidirectional ESD protection.
- Max. peak pulse power : P<sub>pp</sub> = 300W at t<sub>p</sub> = 8/20 us
- ESD protection > 25KV per per MIL-STD-883C, Method 3015-6; Class 3
- IEC 61000-4-2, level 4 ( ESD ), >± 15KV(air) ; >± 8KV(contact).
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

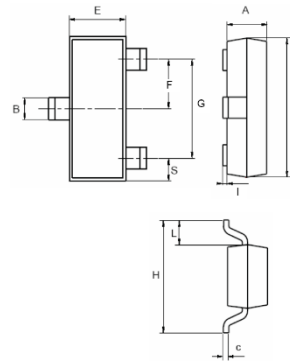
**MECHANICAL DATA**

- Package material: "Green" molding compound UL flammability classification 94V-0 (No Br, Sb, Cl)
- Terminals: Lead Free Plating (Matte Tin Finish)
- Component in accordance to RoHs 2011/65/EU

**APPLICATION**

- Computers and peripherals
- Communication system
- Portable electronic high speed data line
- Cellular handsets and accessories

**SOT23**



SOT-23		
DIM.	MIN.	MAX.
A	0.89	1.05
B	0.30	0.51
C	0.085	0.18
D	2.75	3.04
E	1.20	1.60
F	0.85	1.05
G	1.70	2.10
H	2.10	2.75
I	0.0	0.1
L	0.60 typ.	
S	0.35	0.65

All Dimensions in millimeter

PIN ASSIGNMENT	
1,2	Cathode
3	Ground

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25°C ambient temperature unless otherwise specified.

**ABSOLUTE RATINGS**

PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power ( t <sub>p</sub> = 8/20 us)	P <sub>PK</sub>	250	W
Peak pulse current ( t <sub>p</sub> = 8/20 us)	I <sub>pp</sub>	17	A
Operating junction temperature range	T <sub>J</sub>	-55 to +125	°C
Storage temperature range	T <sub>STG</sub>	-55 to +150	°C
Soldering temperature, t <sub>max</sub> =10s	T <sub>L</sub>	260	°C

- Notes:**
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

### L30ESD5V0C3-2 ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX	UNIT
Reverse stand-off voltage	$V_{RWM}$	--	--	--	5	V
Breakdown voltage	$V_{BR}$	$I_R = 1 \text{ mA}$	6.4	--	7.2	V
Reverse leakage current	$I_{RM}$	$V_{DRM} = 5 \text{ V}$	--	--	1	$\mu\text{A}$
Junction capacitance	$C_J$	$V_R = 0\text{V}, f = 1\text{MHz}$	--	156	160	pF
Clamping voltage	$V_C$	$I_{PP} = 1\text{A}, t_p = 8/20 \text{ uS}$	--	--	9.8	V
		$I_{PP} = 15\text{A}, t_p = 8/20 \text{ uS}$			20	

### L30ESD12VC3-2 ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX	UNIT
Reverse stand-off voltage	$V_{RWM}$	--	--	--	12	V
Breakdown voltage	$V_{BR}$	$I_R = 1 \text{ mA}$	14.2	--	15.8	V
Reverse leakage current	$I_{RM}$	$V_{DRM} = 12 \text{ V}$	--	--	1	$\mu\text{A}$
Junction capacitance	$C_J$	$V_R = 0\text{V}, f = 1\text{MHz}$	--	78	100	pF
Clamping voltage	$V_C$	$I_{PP} = 1\text{A}, t_p = 8/20 \text{ uS}$	--	--	19	V
		$I_{PP} = 12\text{A}, t_p = 8/20 \text{ uS}$			25	

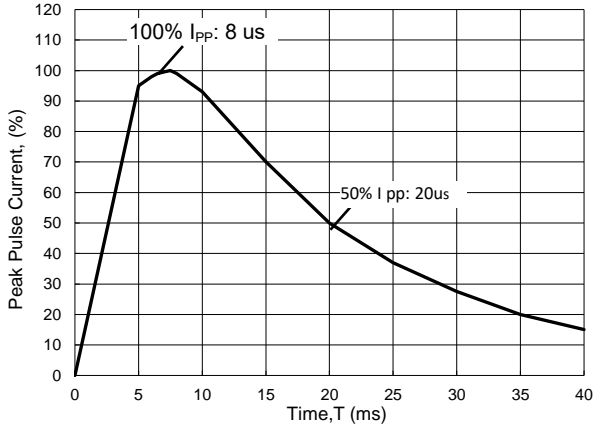
### L30ESD24VC3-2 ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX	UNIT
Reverse stand-off voltage	$V_{RWM}$	--	--	--	24	V
Breakdown voltage	$V_{BR}$	$I_R = 1 \text{ mA}$	26.7	--	29.6	V
Reverse leakage current	$I_{RM}$	$V_{DRM} = 24 \text{ V}$	--	--	1	$\mu\text{A}$
Junction capacitance	$C_J$	$V_R = 0\text{V}, f = 1\text{MHz}$	--	30	60	pF
Clamping voltage	$V_C$	$I_{PP} = 1\text{A}, t_p = 8/20 \text{ uS}$	--	--	36	V
		$I_{PP} = 4\text{A}, t_p = 8/20 \text{ uS}$			43	

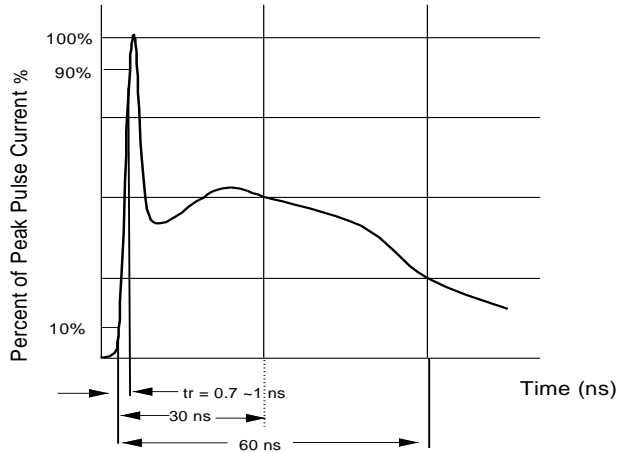
**RATING AND CHARACTERISTIC CURVES**

**L30ESD5V0C3-2 - L30ESD24VC3-2**

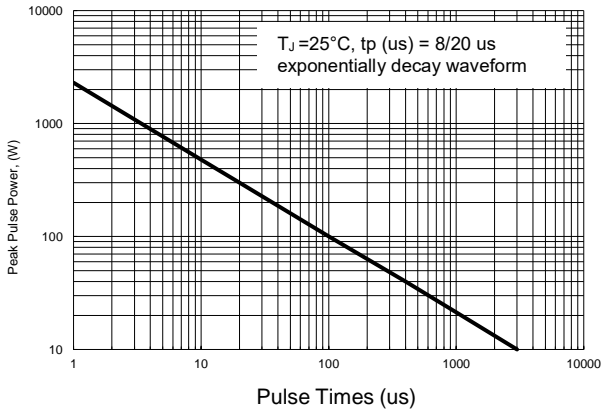
**FIG.1- 8/20us pulse waveform according to IEC 61000-4-5**



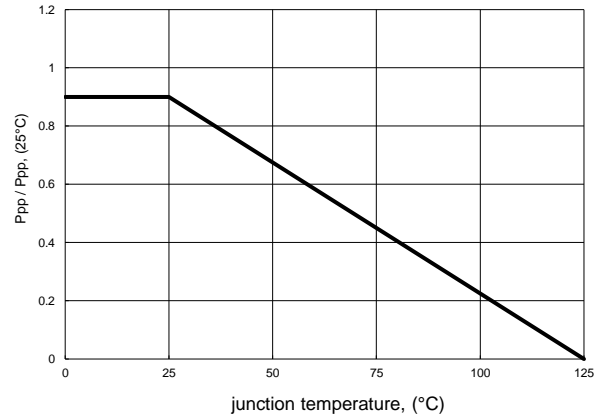
**FIG.2- ESD pulse waveform according to IEC 61000-4-2**



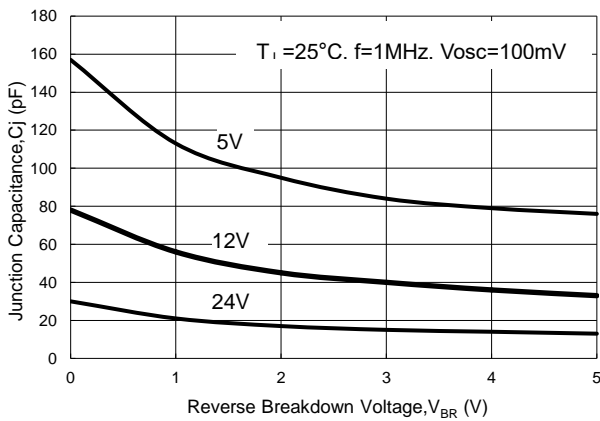
**FIG.3- Power Dissipation Versus Pulse Time**



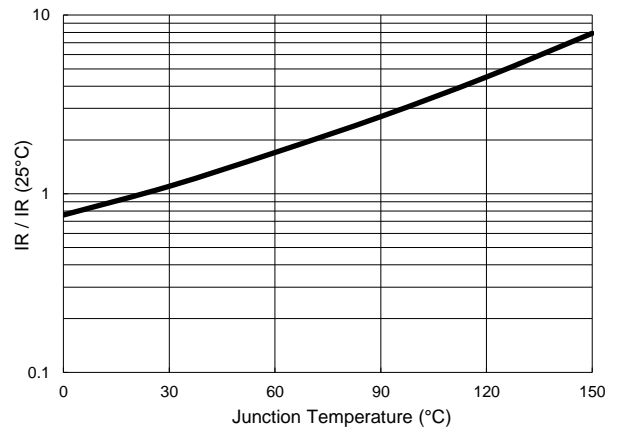
**FIG.4- Peak Pulse Power Versus T<sub>j</sub>**



**FIG.5- Typical Junction Capacitance**



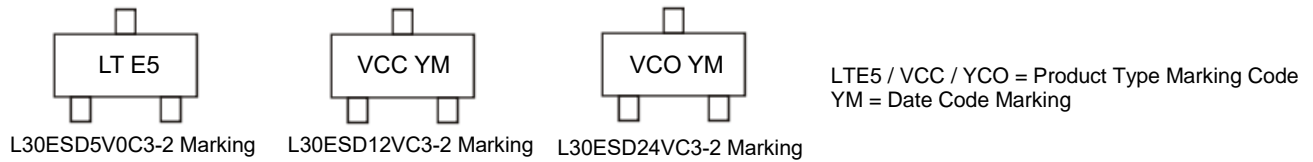
**FIG.6- Reverse Leakage Current Versus T<sub>j</sub>**



### Ordering Information :

Part Number	Package	Packing	
		Qty.	Carrier
L30ESD5V0C3-2	SOT23	3000pcs	Reel
L30ESD12VC3-2			
L30ESD24VC3-2			

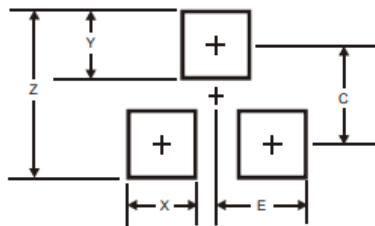
### Marking Information :



### Packaging Information :

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L30ESD5V0C3-2	3000	7	45000	180K
L30ESD12VC3-2				
L30ESD24VC3-2				

### Suggested Pad Layout :



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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