

Absolute Maximum Ratings

Symbol	Parameter	Value	Units
I_{PP}	Peak Current ($t_p=8/20\mu s$)	3.0	A
T_{OP}	Operating Temperature	-40 to 125	°C
T_{STOR}	Storage Temperature	-55 to 150	°C

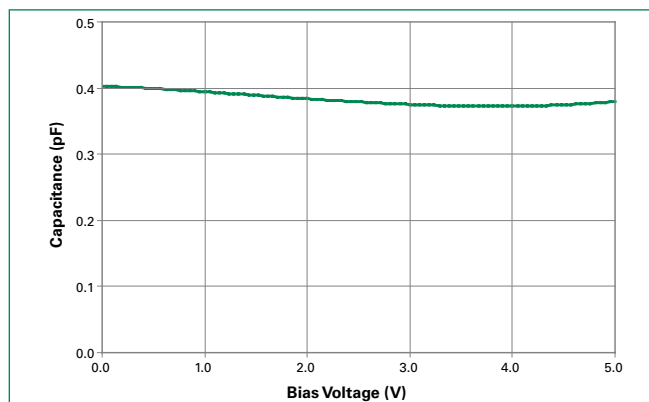
CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

Electrical Characteristics ($T_{OP}=25^{\circ}C$)

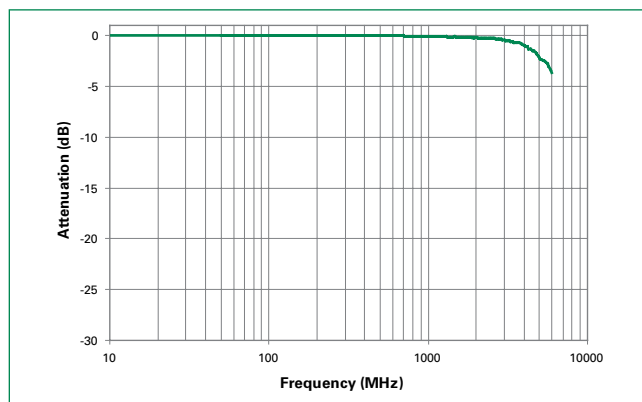
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Reverse Standoff Voltage	V_{RWM}	$I_R \leq 1\mu A$			6.0	V
Reverse Leakage Current	I_{LEAK}	$V_R=5V$, Any I/O to GND		0.1	0.5	μA
Clamp Voltage ¹	V_C	$I_{PP}=1A$, $t_p=8/20\mu s$, Fwd		11.0		V
		$I_{PP}=2A$, $t_p=8/20\mu s$, Fwd		12.5		V
Dynamic Resistance	R_{DYN}	$(V_{C2}-V_{C1}) / (I_{PP2}-I_{PP1})$		1.5		Ω
ESD Withstand Voltage ¹	V_{ESD}	IEC61000-4-2 (Contact)	± 8			kV
		IEC61000-4-2 (Air)	± 15			kV
Diode Capacitance ¹	$C_{I/O-GND}$	Reverse Bias=0V		0.4		pF

Note: ¹ Parameter is guaranteed by design and/or device characterization.

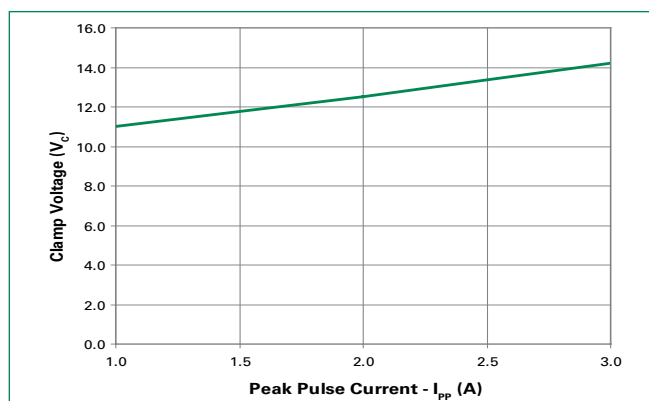
Capacitance vs. Bias Voltage



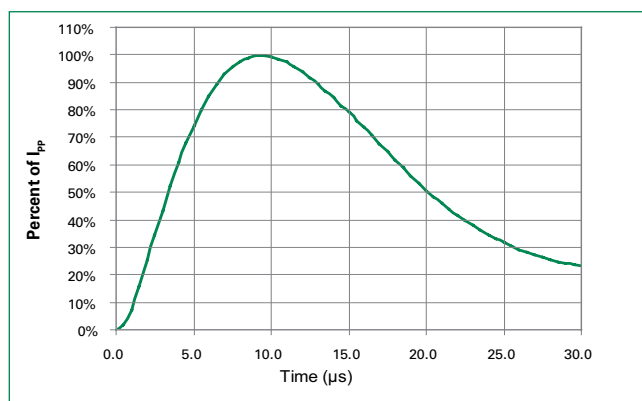
Insertion Loss (S21) I/O to GND



Clamping Voltage vs. I_{PP}

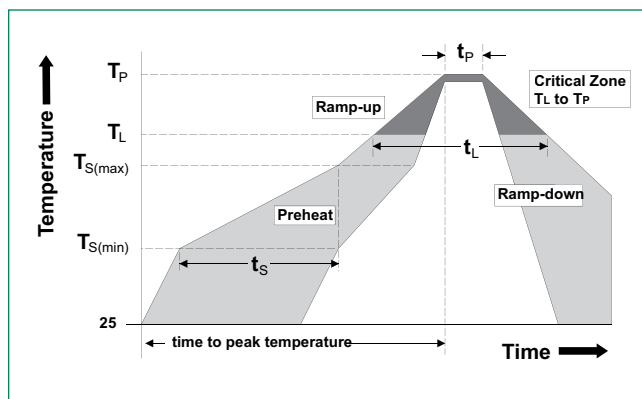


Pulse Waveform

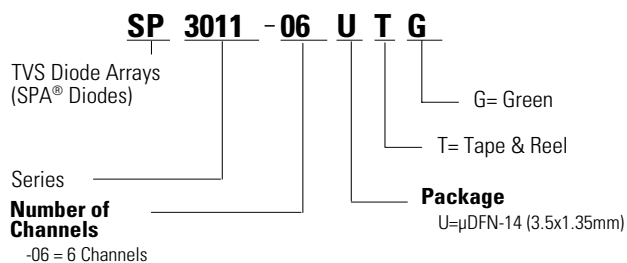


Soldering Parameters

Reflow Condition		Pb – Free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus) Temp (T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes Max.
Do not exceed		260°C



Part Numbering System



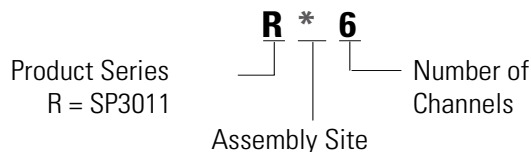
Product Characteristics

Lead Plating	Pre-Plated Frame
Lead Material	Copper Alloy
Lead Coplanarity	0.0004 inches (0.102mm)
Substitute Material	Silicon
Body Material	Molded Epoxy
Flammability	UL 94 V-0

Notes :

1. All dimensions are in millimeters
2. Dimensions include solder plating.
3. Dimensions are exclusive of mold flash & metal burr.
4. Blo is facing up for mold and facing down for trim/form, i.e. reverse trim/form.
5. Package surface matte finish VDI 11-13.

Part Marking System



Ordering Information

Part Number	Package	Min. Order Qty.
SP3011-06UTG	μDFN-14	3000

Figure 1: Dimensions and Pin Locations for the 10-Pin Header. The diagram illustrates the physical dimensions and pin configurations for a 10-pin header. Key dimensions include P1, P2, P0, D0, D1, W, E, F, A0, B0, T, and K0. The pin locations are marked with '+' and '-' signs. The side view shows the pin height and the 12° MAX angle. The top view shows the user feeding direction and the pin 1 location.

Top View

D

E

A

B

PIN 1 Index Area

1 2 3 4

[illegible]

Notes:

1. Dimension and tolerancing conform to ASME Y14.5M-1994.
2. Controlling dimensions: Millimeter. Converted Inch dimensions are not necessarily exact.

Symbol	Millimeter			Inches		
D	3.29	3.30	3.31	0.1295	0.1299	0.1300
E	1.44	1.45	1.46	0.0567	0.0571	0.0572
b	0.29	0.30	0.31	0.0114	0.0118	0.0119
L	0.39	0.40	0.41	0.0154	0.0158	0.0159
e	0.50typ			0.020typ		
s	0.19	0.20	0.21	0.0075	0.0078	0.0080
s1	0.64	0.65	0.66	0.0252	0.0256	0.0258

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Specifications are subject to change without notice.
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