

Absolute Maximum Ratings

Symbol	Parameter	Value	Units
I_{PP}	Peak Current ($t_p=8/20\mu s$)	4.5	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.

Thermal Information

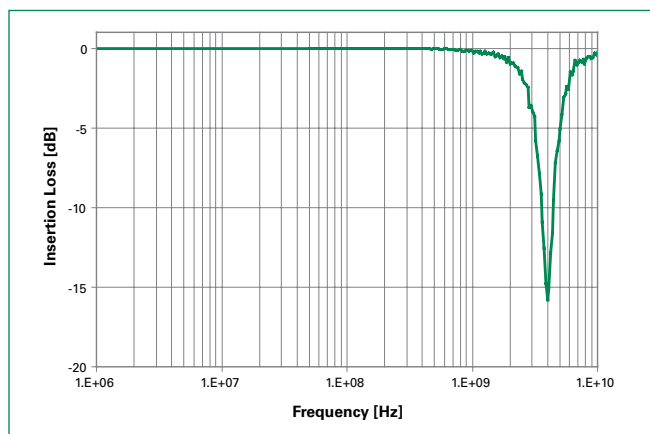
Parameter	Rating	Units
Storage Temperature Range	-55 to 150	°C
Maximum Junction Temperature	150	°C
Maximum Lead Temperature (Soldering 20-40s)	260	°C

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

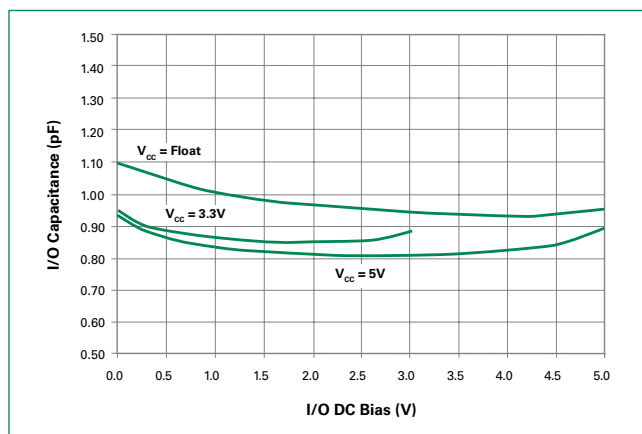
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Reverse Standoff Voltage	V_{RWM}	$I_R \leq 1\mu A$			6.0	V
Reverse Leakage Current	I_{LEAK}	$V_R=5V$			0.5	μA
Clamp Voltage ¹	V_C	$I_{PP}=1A, t_p=8/20\mu s, Fwd$		9.5	11.0	V
		$I_{PP}=2A, t_p=8/20\mu s, Fwd$		10.6	13.0	V
ESD Withstand Voltage ¹	V_{ESD}	IEC61000-4-2 (Contact)	± 12			kV
		IEC61000-4-2 (Air)	± 15			kV
Diode Capacitance ¹	$C_{I/O-GND}$	Reverse Bias=0V	0.95	1.1	1.25	pF
		Reverse Bias=1.65V	0.7	0.85	1.0	pF
Diode Capacitance ¹	$C_{I/O-I/O}$	Reverse Bias=0V		0.5		pF

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

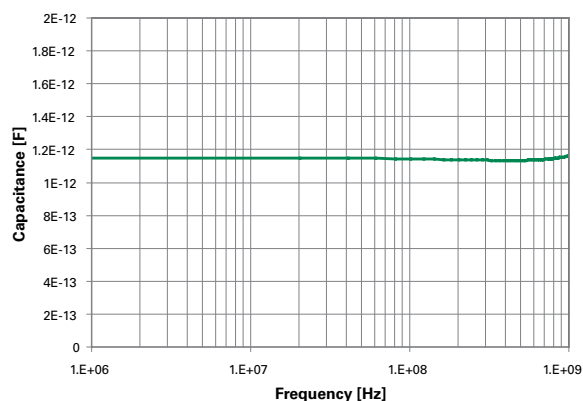
Insertion Loss (S21) I/O to GND



Capacitance vs. Bias Voltage



Capacitance vs. Frequency

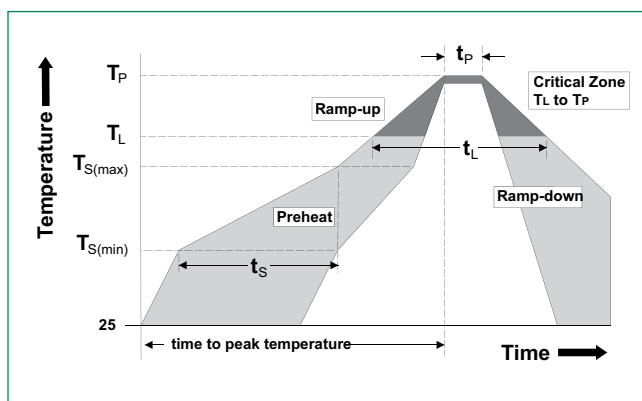


Product Characteristics

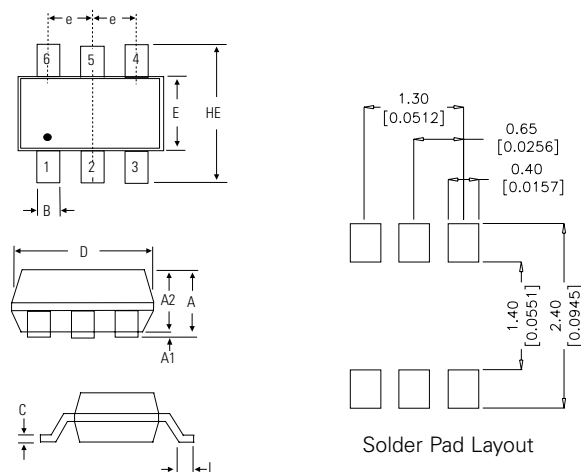
Lead Plating	SC70: Matte Tin μDFN: Pre-Plated Frame
Lead Material	Copper Alloy
Lead Coplanarity	0.0004 inches (0.102mm)
Substitute Material	Silicon
Body Material	Molded Epoxy
Flammability	UL Recognized compound meeting flammability rating V-0

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

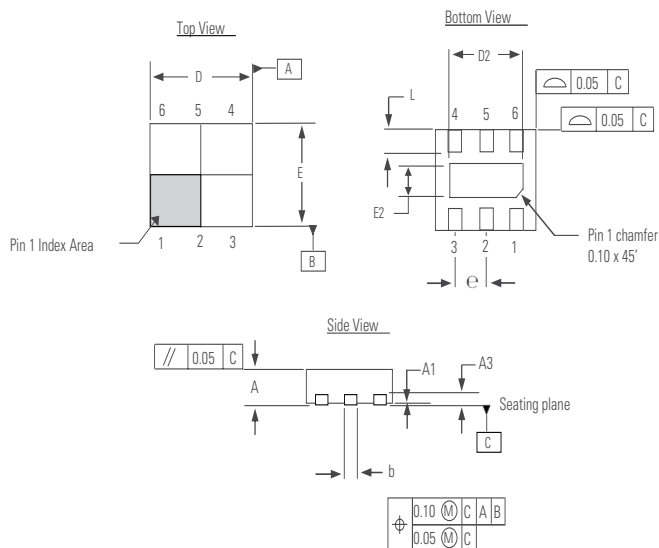


Package Dimensions — SC70-6



Package	SC70-6			
Pins	6			
JEDEC	MO-203			
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.80	1.10	0.031	0.043
A1	0.00	0.10	0.000	0.004
A2	0.70	1.00	0.028	0.039
B	0.15	0.30	0.006	0.012
c	0.08	0.25	0.003	0.010
D	1.85	2.25	0.073	0.089
E	1.15	1.35	0.045	0.053
e	0.65 BSC		0.026 BSC	
HE	2.00	2.40	0.079	0.094
L	0.26	0.46	0.010	0.018

Package Dimensions — μ DFN-6 (1.6x1.6x0.5mm)



Package	μ DFN-6 (1.6x1.6x0.5mm)			
JEDEC	MO-229			
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.45	0.55	0.018	0.022
A1	0.00	0.05	0.000	0.002
A3	0.127 Ref		0.005 Ref	
b	0.20	0.30	0.008	0.012
D	1.50	1.70	0.060	0.067
D2	1.05	1.30	0.042	0.052
E	1.50	1.70	0.060	0.067
E2	0.40	0.65	0.016	0.026
e	0.50 Ref		0.020 Ref	
L	0.25	0.40	0.010	0.016

Part Numbering System

SP 3002 -04 * T G

TVS Diode Arrays (SPA® Diodes)

Series

Number of Channels
-04 = 4 channel

Package
J = SC70-6
U = μ DFN-6

G = Green
T = Tape & Reel

Ordering Information

Part Number	Package	Marking	Min. Order Qty.
SP3002-04JTG	SC70-6	E * 4	3000
SP3002-04UTG	μ DFN-6 (1.6x1.6x0.5mm)	E * 4	3000

Part Marking System

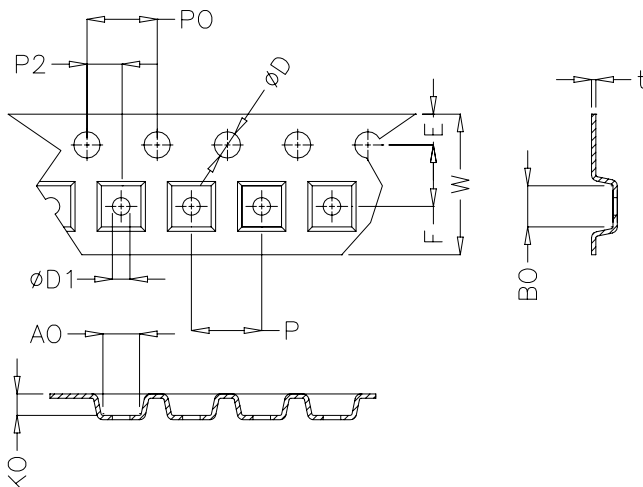
E * 4

Product Series
E = SP3002 series

Number of Channels
4

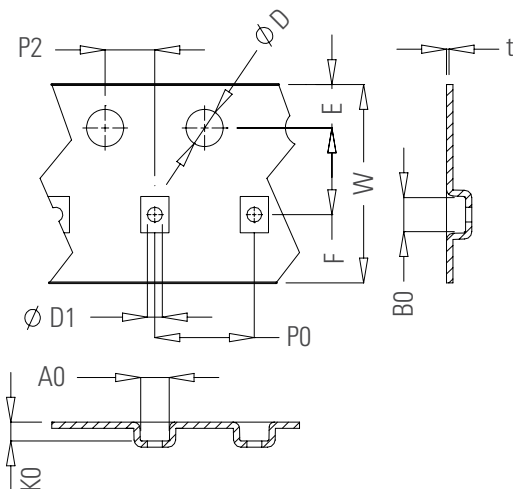
Assembly Site
(varies)

Embossed Carrier Tape & Reel Specification — SC70-6



Symbol	Millimetres		Inches	
	Min	Max	Min	Max
E	1.65	1.85	0.064	0.073
F	3.45	3.55	0.135	0.139
P2	1.95	2.05	0.077	0.081
D	1.40	1.60	0.055	0.063
D1	1.00	1.25	0.039	0.049
P0	3.90	4.10	0.154	0.161
10P0	40.0 ± 0.20		1.574 ± 0.008	
W	7.70	8.10	0.303	0.318
P	3.90	4.10	0.153	0.161
A0	2.14	2.34	0.084	0.092
B0	2.24	2.44	0.088	0.096
K0	1.12	1.32	0.044	0.052
t	0.27 Max		0.010 Max	

Embossed Carrier Tape & Reel Specification — µDFN-6 (1.6x1.6x0.5mm)



Symbol	Millimetres		Inches	
	Min	Max	Min	Max
E	1.65	1.85	0.06	0.07
F	3.45	3.55	0.14	0.14
D1	1.00	1.25	0.04	0.05
D	1.50 MIN		0.06 MIN	
P0	3.90	4.10	0.15	0.16
10P0	40.0 ± 0.20		1.57 ± 0.01	
W	7.90	8.30	0.31	0.33
P2	1.95	2.05	0.08	0.08
A0	1.78	1.88	0.07	0.07
B0	1.78	1.88	0.07	0.07
K0	0.84	0.94	0.03	0.04
t	0.25 TYP		0.01 TYP	