GS24VH20UAQ

surge current protection with suitable capacitance

General Description

The **GS24VH20UAQ** is designed to protect voltage sensitive components form damage or latch-up due to surge current . Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to surge current protection for board level. Because of its small size and bi-directional design, it is ideal for use in cellular phones and portable applications that require audio line protection.

Applications

Mobile Internet Devices (MID) and portable devices

Personal digital assistants (PDA's)

Cellular handsets and accessories

Features

Small Body Outline Dimensions: nom 0.078″ x 0.078″ (2.0x2.0 mm)

Low Clamping Voltage:V_C=46V@I_{PP}=140A

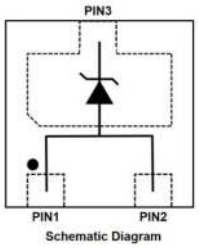
Reverse Working (Stand-off) Voltage: 24 V

Low Leakage

Response Time is Typically < 1 ns

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Absolute Maximum Rating

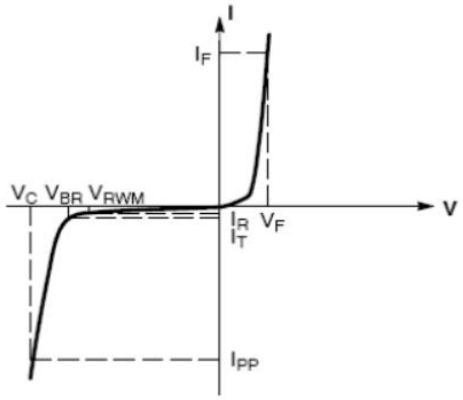
Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Contact		±30	kV
Peak Power Per 8 x 20μs Waveform	P_{PK}	6440	W
Junction Temperature Range	T_J	-55 to +125	°C
Storage Temperature Range	T_{stg}	-55 to +150	
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	°C

Electrical Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				24	V
Diode Forward Voltage	V_F	I_F=10mA			1.2	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	24.8			V
Reverse Leakage Current	I_R	V_{RWM}=24V			1.0	uA
Clamping Voltage	V_C	I_{PP}=50A tp=8/20us			35	V
		I_{PP}=140A tp=8/20us			46	
Junction Capacitance	C_J	V_R=0V, f = 1MHz		380		pF

Electronics Parameter

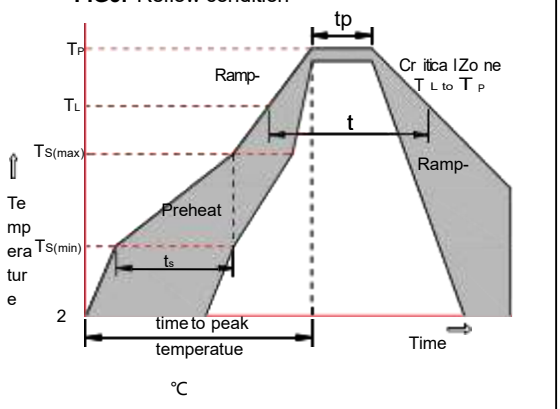
Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T
P_{PK}	Peak Power Dissipation
C	Max. Capacitance @ V_R = 0 and freq.=1 MHz



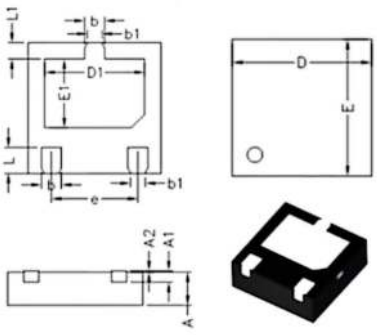
Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

FIG5: Reflow condition

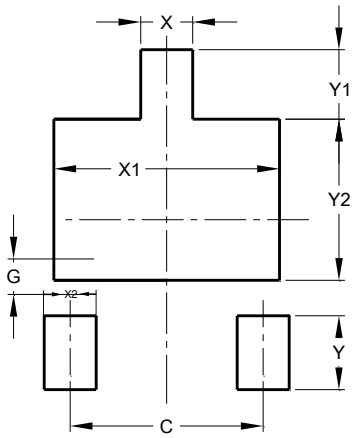


Package Dimensions & Suggested Pad Layout



DFN2020-3L

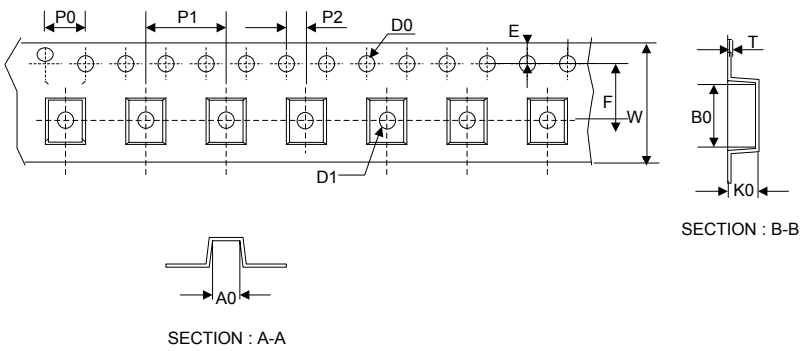
	Millimeters			Inches		
	Min. (mm)	Typ. (mm)	Max. (mm)	Min. (mm)	Typ. (mm)	Max. (mm)
D	1.95	2.00	2.05	0.076	0.078	0.080
E	1.95	2.00	2.05	0.076	0.078	0.080
D1	1.45	1.50	1.55	0.057	0.059	0.061
E1	1.00	1.05	1.10	0.039	0.041	0.043
L1	0.20	0.25	0.30	0.007	0.009	0.011
L	0.35	0.40	0.45	0.013	0.015	0.017
b1	0.22REF			0.025bsc		
b	0.25	0.30	0.35	0.009	0.011	0.013
e	1.30REF					
A1	0.150REF			0.005REF		
A2	0.00	0.02	0.05	0.000	-	0.001
A	0.45	0.50	0.55	0.017	0.019	0.021



Dimensions	Value (in mm)
C	1.30
G	0.26
X	0.40
X1	1.60
X2	0.40
Y	0.50
Y1	0.35
Y2	1.15

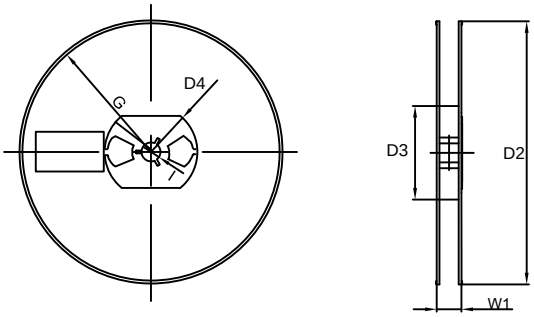
Tape & rell specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	4.00±0.20
P2	1.55±0.20
D0	1.55±0.20
D1	1.05±0.20
E	1.55±0.25
F	3.60±0.20
W	8.00±0.20
A0	2.60±0.20
B0	2.50±0.20
K0	1.00±0.20
T	0.20±0.20

7” Reel



D2	177.0±5.0
D3	55Min.
D4	R24.6±2.0
G	R82.0±2.0
I	13.0±2.0
W1	10.20±3.0

Quantity: 3000PCS