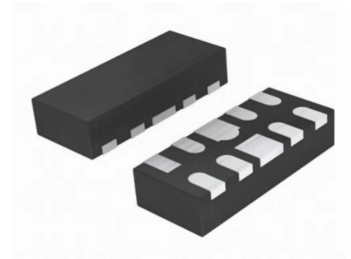


Descriptions

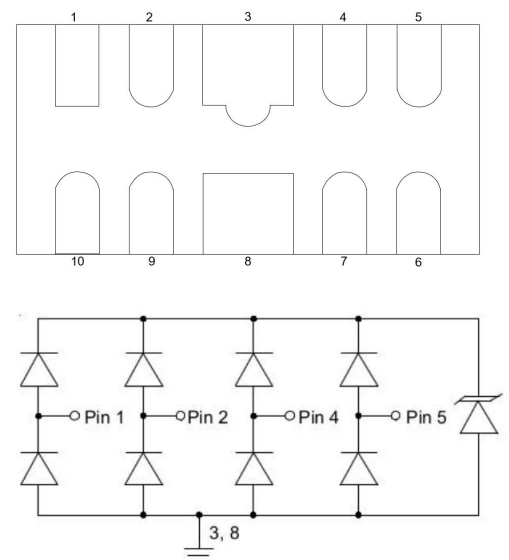
The UP1.5P0524A05P04 integrates 4 channels of ultra low capacitance rail-to-rail diodes and an additional Zener diode to provide protection for electronic equipment that may experience destructive electrostatic discharges (ESD). This robust device can safely absorb repetitive ESD strikes above the maximum level specified in the IEC61000-4-2 international standard ($\pm 30\text{kV}$ Contact discharge, $\pm 30\text{kV}$ Air discharge) without performance degradation. The extremely low loading capacitance also makes it ideal for protecting high speed signal pins such as HDMI, USB3.0, USB2.0, and IEEE 1394.



Features

- ◆ IEC61000-4-2 ESD $\pm 30\text{kV}$ (Air), $\pm 30\text{kV}$ (Contact) compliance
- ◆ IEC61000-4-5 (surge): 5A (8/20 μs)
- ◆ Protects Four Uni-directional line
- ◆ Response time $< 1\text{ns}$
- ◆ Ultra low capacitance: 0.8PF typical
- ◆ Reverse stand-off voltage is 5V
- ◆ Lower leakage current
- ◆ Excellent clamping voltages
- ◆ Solid-state silicon avalanche technology
- ◆ Solder reflow temperature: Pure Tin-Sn, 260-270 $^{\circ}\text{C}$
- ◆ Plastic package has underwriters laboratory flammability 94V-0
- ◆ Meet Lead Free/RoHS compliant

Schematic



Applications

- ◆ Cellular Handsets and Accessories
- ◆ Personal Digital Assistants (PDA's)
- ◆ Notebooks & Handhelds
- ◆ Portable Instrumentation
- ◆ Digital Cameras、HDMI、USB
- ◆ MP3

Dimensions (DFN2510-10)

Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.48	0.55	0.019	0.021
A1	0.00	0.05	0.000	0.022
A3	0.125Ref		0.005Ref	
b	0.15	0.25	0.006	0.012
b1	0.35	0.45	0.014	0.018
D	2.40	2.60	0.094	0.102
E	0.90	1.10	0.035	0.043
e	0.50BSC		0.020BSC	
L	0.30	0.43	0.012	0.016

Maximum Rating and Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PPM}	150	W
ESD voltage (Contact discharge)	V_{ESD}	± 30	KV
ESD voltage (Air discharge)		± 30	
Peak Forward Voltage ($I_F = 1\text{A}$, $t_p=8/20\mu\text{s}$)	V_{FP}	1.5	V
Operating junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				5	V
Reverse breakdown voltage	V_{BR}	$I_{BR}=1.0\text{mA}$	6.0			V
Reverse leakage current	I_R	$V_R=5\text{V}$			1.5	μA
Clamping voltage ($t_p=8/20\mu\text{s}$)	V_C	$I_{PP}=1.0\text{A}$			7.8	V
Clamping voltage ($t_p=8/20\mu\text{s}$)	V_C	$I_{PP}=5.0\text{A}$			34	V
Peak Pulse Current($t_p=8/20\mu\text{s}$)	I_{PP}				5	A
Off state junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$, any I/O pin to ground		0.8		pF

Ratings and Characteristic Curves (T_A=25°C unless otherwise noted)

Figure 1. Peak Pulse Power Rating Curve

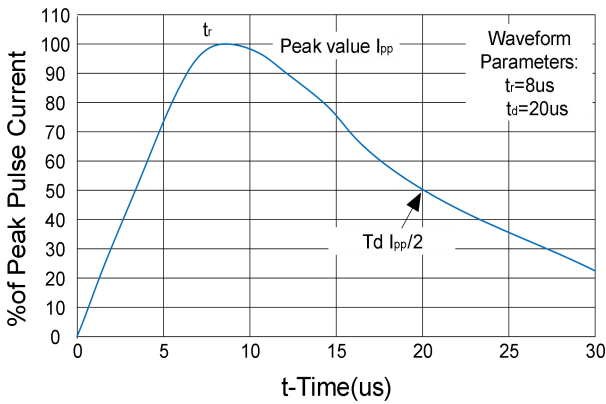


Figure 2. Pulse Derating Curve

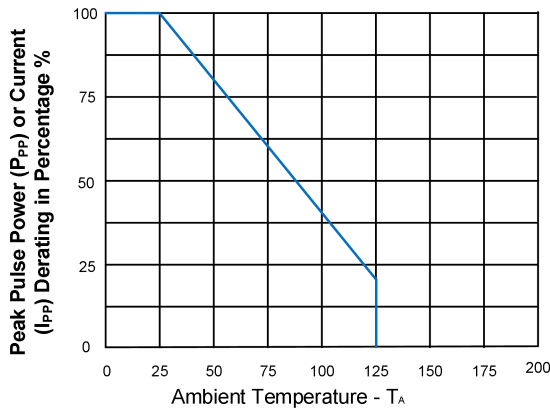


Figure 3. Typical Junction Capacitance

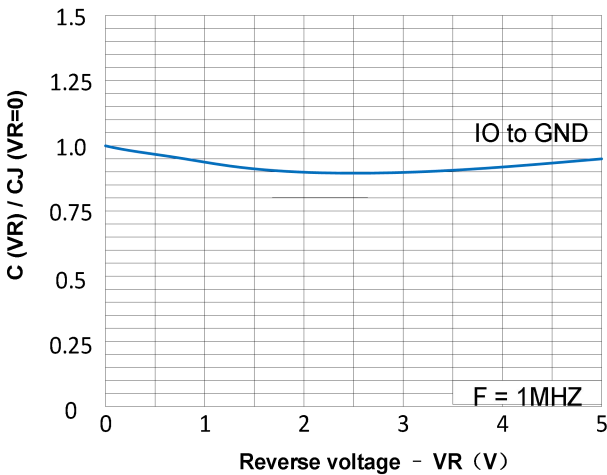
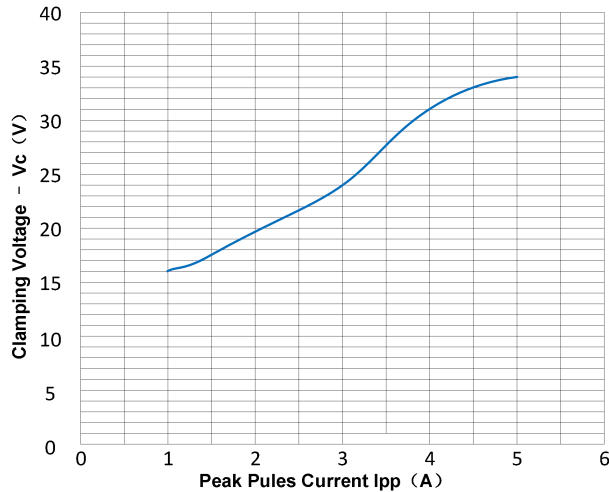
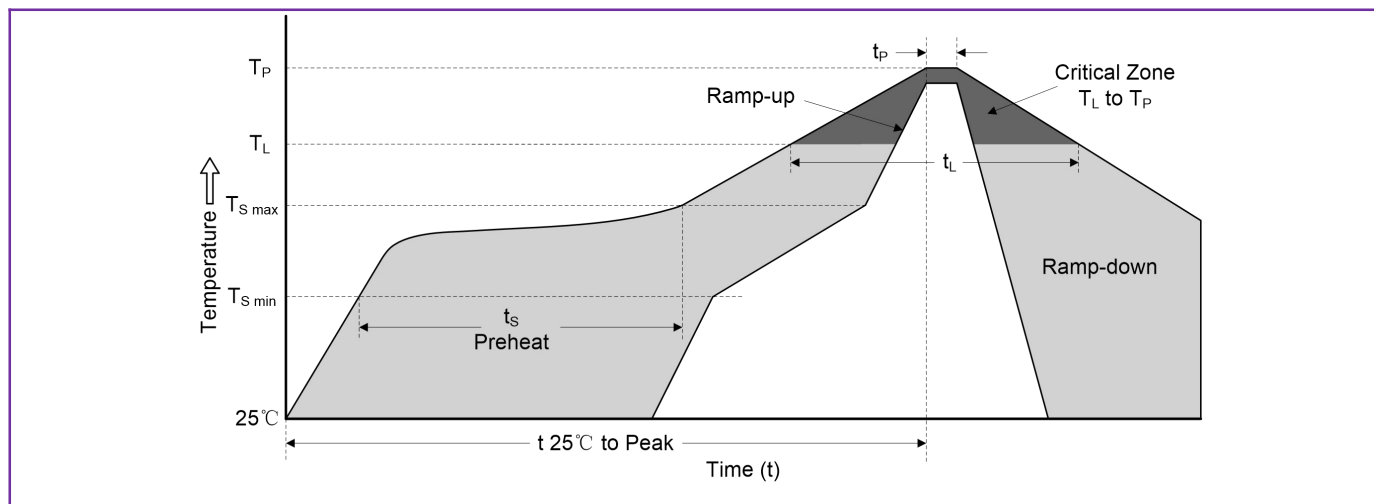


Figure 4. Clamping Voltage Vs I_{PP}



Reflow Soldering Parameters



Reflow Condition		Lead-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 seconds
Average ramp-up rate (T_L to T_P)		3°C/second max.
$T_{S\ max}$ to T_L -Ramp-up Rate		3°C/second max.
Reflow	-Temperature (T_L) (Liquidus)	217°C
	-Time (min to max) (t_s)	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

Part number	QTY/Reel	Reel Size
UP1.5P0524A05P04	3000PCS	7Inch