

FEATURES

- | 56W Peak Pulse Power per Line (tp=8/20μs)
- | Protects four I/O lines
- | Operating voltage: 3.3V
- | Low Capacitance:0.5pF typical (I/O to GND)
- | Low Clamping Voltage

APPLICATIONS

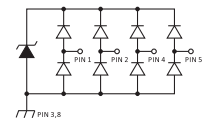
- | HDMI 1.4/HDMI 2.0 Interfaces
- | USB 3.0/USB 3.1 Interfaces
- | Video Graphics Cards
- | Notebooks,Desktops and Servers
- | Portable Instrumentation
- | Industrial Controls
- | Peripherals



DFN2510P10

3324P

Marking



Schematic Symbol

IEC COMPATIBILITY

- | IEC61000-4-2 (ESD) ±25kV (air), ±20kV (contact)
- | IEC61000-4-4 (EFT) 40A (5/50ns)

APPROVALS

| | |
|-------------|------------------------------------|
| RoHS | Compliance with 2011/65/EU |
| HF | Compliance with IEC61249-2-21:2003 |

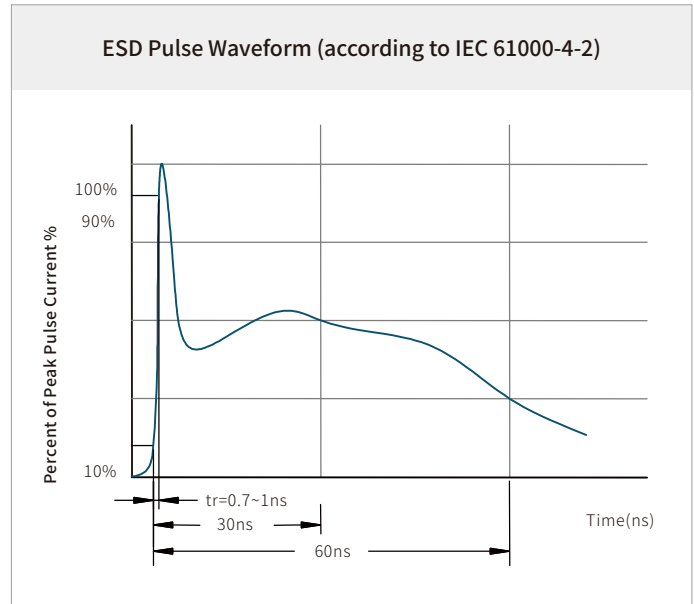
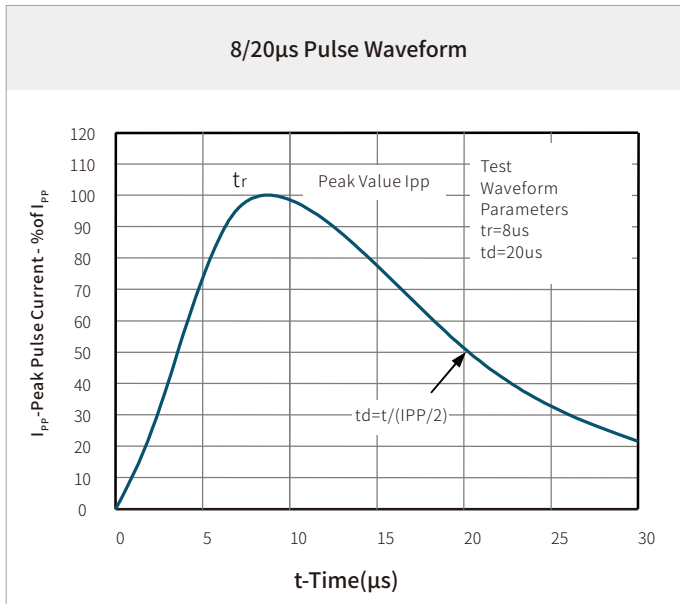
THERMAL CONSIDERATIONS

| Symbol | Parameter | Value | Unit |
|-----------|---------------------------------------|-------------|-------|
| P_{PP} | Peak Pulse Power (tp=8/20μs waveform) | 56 | Watts |
| T_J | Operating Temperature Range | -55 to +125 | °C |
| T_{STG} | Storage Temperature Range | -55 to +125 | °C |

ELECTRICAL CHARACTERISTICS

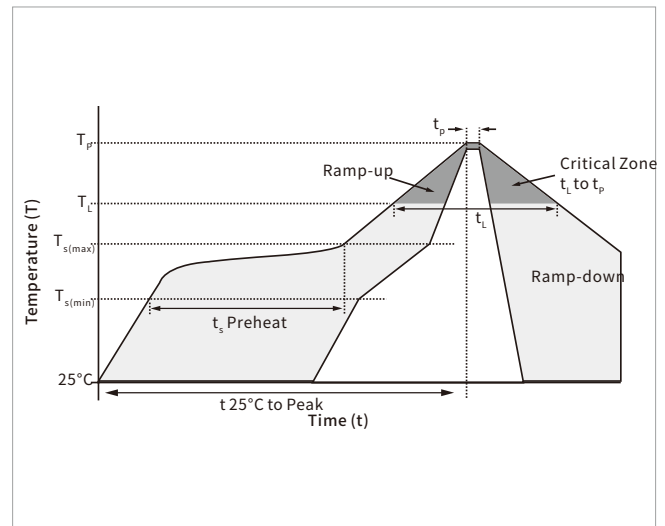
| Symbol | Parameter | Condition | Min. | Typ. | Max. | Unit |
|-----------|--------------------------------|------------------------|------|------|------|------|
| V_{RWM} | Reverse Stand-off Voltage | | | | 3.3 | V |
| V_{BR} | Reverse Breakdown Voltage | $I_T=1mA$ | 4.2 | | | V |
| I_R | Reverse Leakage Current | $V_{RWM}=3.3V$ | | | 1 | μA |
| V_C | Clamping Voltage | $I_{PP}=1A, tp=8/20us$ | | | 10 | V |
| V_C | Clamping Voltage | $I_{PP}=4A, tp=8/20us$ | | | 14 | V |
| I_{PP} | Peak Pulse Current | tp=8/20us | | | 4 | A |
| C_J | Off State Junction Capacitance | $V_R=0V, f=1MHz$ | | 0.6 | | pF |

CHARACTERISTIC CURVES

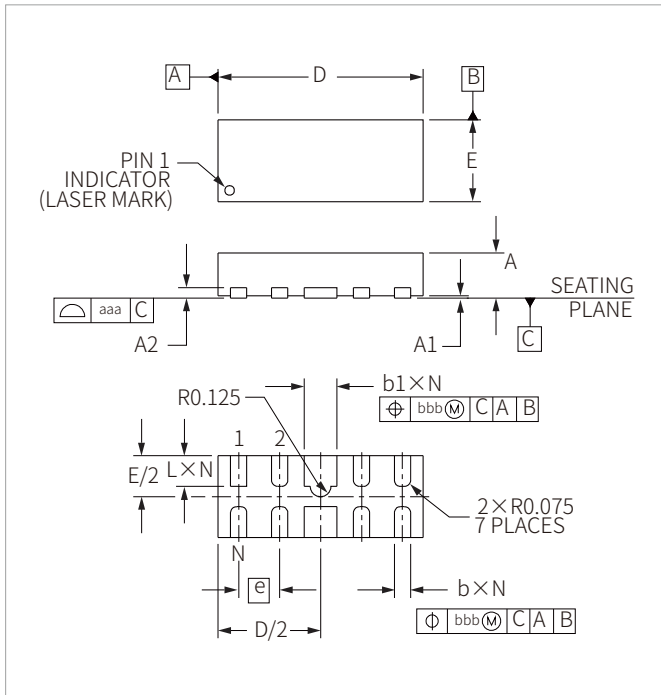


SOLDERING PARAMETERS

| Reflow Condition | | Lead-free assembly |
|--|----------------------------------|--------------------|
| Pre Heat | Temperature Max ($T_{s(min)}$) | 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 |
| | Time (min to max) (t_L) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 260°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 |

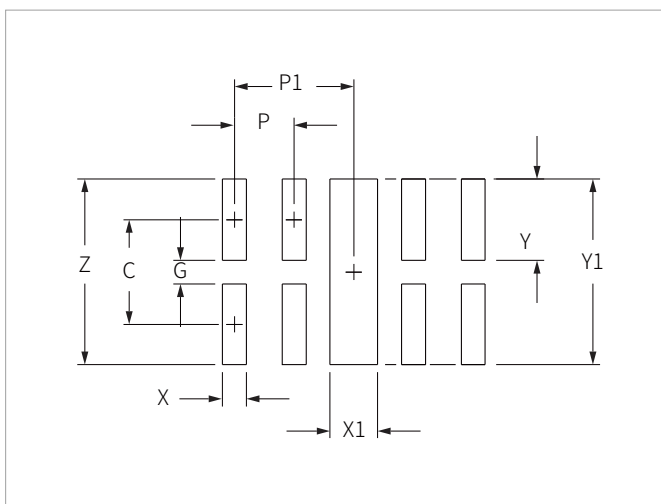


DFN2510P10 PACKAGE INFORMATION



| Ref. | Millimeters | | Inches | |
|------|-------------|------|----------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.40 | 0.65 | 0.016 | 0.026 |
| A1 | 0 | 0.05 | 0 | 0.002 |
| A2 | (0.13) | | (0.005) | |
| b | 0.15 | 0.25 | 0.006 | 0.010 |
| 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 | 0.45 | 0.012 | 0.018 |
| N | 8 | | 8 | |
| aaa | 0.08 | | 0.003 | |
| bbb | 0.10 | | 0.004 | |

RECOMMENDED PAD LAYOUT DIMENSIONS



| Ref. | Millimeters | Inches |
|------|-------------|--------|
| C | 0.87 | 0.034 |
| G | 0.20 | 0.008 |
| P | 0.50 | 0.020 |
| P1 | 1.00 | 0.039 |
| X | 0.20 | 0.008 |
| X1 | 0.40 | 0.016 |
| Y | 0.68 | 0.027 |
| Y1 | 1.55 | 0.061 |
| Z | 1.55 | 0.061 |

ORDERING INFORMATION

| Part Number | Component Package | QTY/Reel | Reel Size |
|-------------|-------------------|----------|-----------|
| ULC3324P | DFN2510P10 | 3000PCS | 7" |

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