

## FEATURES

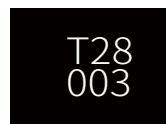
- | 4800Watts peak pulse power ( $t_p = 8/20\mu s$ )
- | Solid-state silicon-avalanche technology
- | Low leakage current
- | Working voltage: 28V
- | Low clamping voltage

## APPLICATIONS

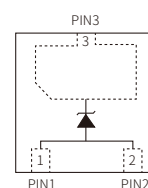
- | Power Management
- | Industrial Application
- | Power Supply Protection
- | Cell phone handsets and accessories
- | Personal digital assistants(PDA's)
- | Notebooks, desktops, and servers
- | Portable instrumentation
- | Peripherals
- | Cordless phones



DFN2020-3L



Marking



Schematic Symbol

## IEC COMPATIBILITY

- | IEC61000-4-2 (ESD)  $\pm 30kV$  (air),  $\pm 30kV$  (contact)
- | IEC61000-4-4 (EFT) 40A (5/50ns)

## APPROVALS

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

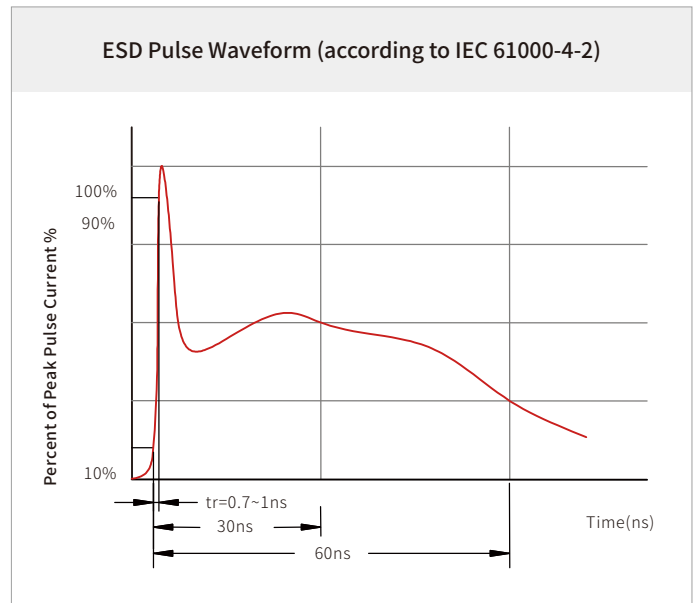
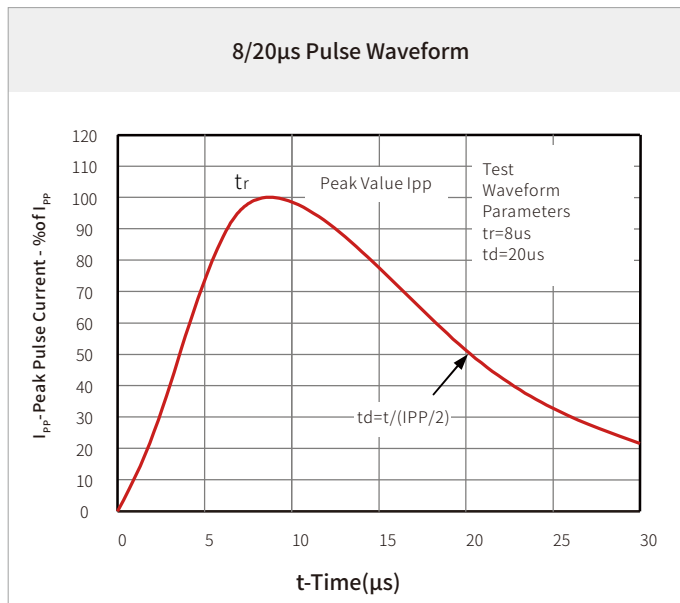
## THERMAL CONSIDERATIONS

| Symbol    | Parameter                                    | Value       | Unit        |
|-----------|----------------------------------------------|-------------|-------------|
| $P_{pp}$  | Peak Pulse Power ( $t_p=8/20\mu s$ waveform) | 4800        | Watts       |
| $T_J$     | Operating Temperature Range                  | -55 to +150 | $^{\circ}C$ |
| $T_{STG}$ | Storage Temperature Range                    | -55 to +150 | $^{\circ}C$ |

## ELECTRICAL CHARACTERISTICS

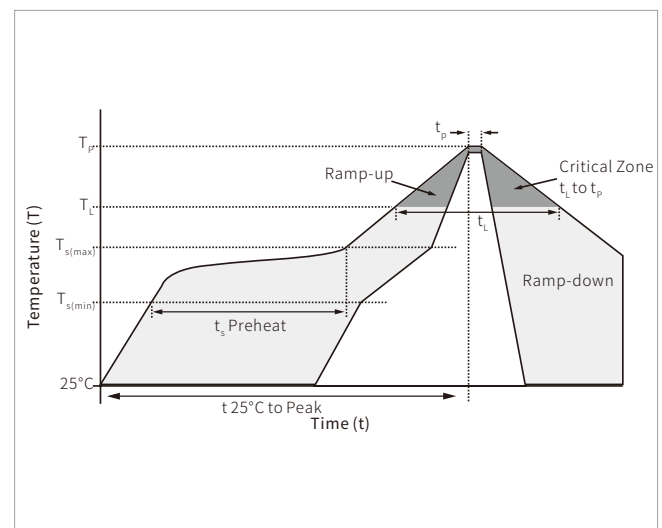
| Symbol    | Parameter                      | Condition                   | Min. | Typ. | Max. | Unit    |
|-----------|--------------------------------|-----------------------------|------|------|------|---------|
| $V_{RWM}$ | Reverse Stand-off Voltage      |                             |      |      | 28   | V       |
| $V_{BR}$  | Reverse Breakdown Voltage      | $I_T=1mA$                   | 29   |      |      | V       |
| $I_R$     | Reverse Leakage Current        | $V_{RWM}=28V$               |      |      | 1    | $\mu A$ |
| $V_C$     | Clamping Voltage               | $I_{PP}=30A, t_p=8/20\mu s$ |      |      | 48   | V       |
| $V_C$     | Clamping Voltage               | $I_{PP}=80A, t_p=8/20\mu s$ |      |      | 60   | V       |
| $I_{PP}$  | Peak Pulse Current             | $t_p=8/20\mu s$             |      |      | 80   | A       |
| $C_J$     | Off State Junction Capacitance | $V_R=0V, f=1MHz$            |      |      | 700  | pF      |

## CHARACTERISTIC CURVES

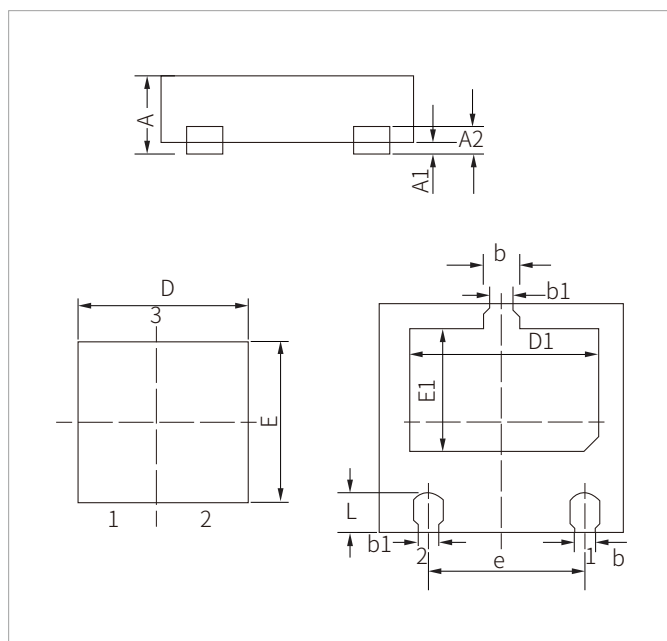


## SOLDERING PARAMETERS

| 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              |

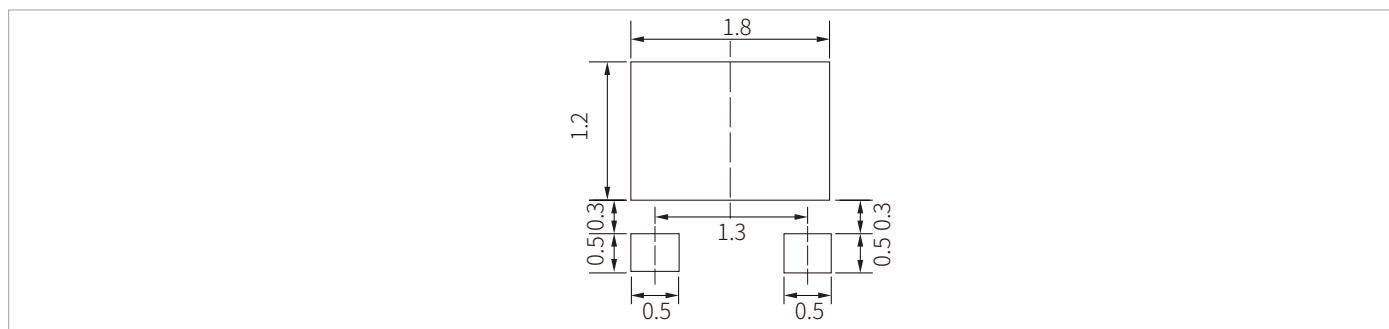


## DFN2020-3L PACKAGE INFORMATION



| Ref. | Millimeters |      |      |
|------|-------------|------|------|
|      | Min.        | Typ. | Max. |
| A    | 0.45        | 0.55 | 0.65 |
| A1   | -           | 0.00 | 0.05 |
| A2   | 0.152BSC    |      |      |
| D    | 1.80        | 2.00 | 2.20 |
| E    | 1.80        | 2.00 | 2.20 |
| b    | 0.15        | 0.20 | 0.25 |
| b1   | 0.25        | 0.30 | 0.35 |
| D1   | 1.45        | 1.50 | 1.55 |
| E1   | 1.00        | 1.05 | 1.10 |
| e    | 1.30BSC     |      |      |
| L    | 0.35        | 0.40 | 0.45 |

## RECOMMENDED PAD LAYOUT DIMENSIONS



## ORDERING INFORMATION

| Part Number    | Component Package | QTY/Reel | Reel Size |
|----------------|-------------------|----------|-----------|
| SE22F3P480U28A | DFN2020-3L        | 3000PCS  | 7"        |

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