# ESD2117

## 1-channel Low Voltage ESD/TVS Unidirectional Diodes

**Features**

- Compact die protects from ESD discharges
- Small form-factor 21 x 17 mils sq
- Silicon chip thickness of 7.5 mils
- ESD protection to 8kV contact discharge per IEC 61000-4-2
- This product is in full RoHS compliance

**Applications**

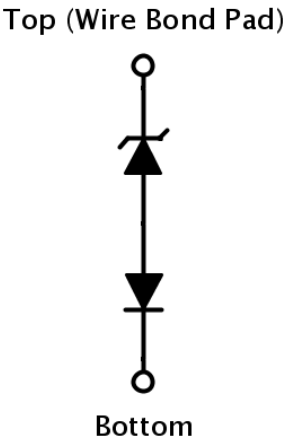
- Power LEDs
- High Brightness LEDs
- RF & Microwave Modules
- Multi-chip Modules
- Hybrid Microelectronics

**Product Description**

The ESD2117 provides a high level of protection for sensitive parts that may be subjected to electrostatic discharge (ESD). The tiny form-factor and single wire-bond feature makes this device ideal for applications that have very confined spaces and miniature packaging. This product is designed with a large cross-sectional area junction for conducting high transient currents. It provides superior electrical characteristics such as lower clamping voltage and literally no device degradation when compared to Multilayer Varistors (MLV). This device is designed and characterized to safely dissipate ESD strikes of 8kV, when tested to the stringent MIL-STD-883 conditions. Gross die count on a 4" (100mm) wafer is 31k units.

| ELECTRICAL CHARACTERISTICS @ 25°C | | | | | | |
|---|---|---|---|---|---|---|
| **SYMBOL** | **PARAMETER** | **CONDITIONS** | **MIN** | **TYP** | **MAX** | **UNIT** |
| $P_{PP}$ | Peak Pulse Power | $t_P$ = 8/20 µs | - | - | 350 | W |
| $I_{PP}$ | Peak Pulse Current | $t_P$ = 8/20 µs | - | - | 20 | A |
| $T_j$ | Junction Temperature | | - | - | 150 | °C |
| $V_{RWM}$ | Reverse Working Voltage | | - | - | 2.8 | V |
| $V_T$ | Trigger Voltage | $I_T$ = 2µA | 3.0 | - | - | V |
| $V_{BR}$ | Reverse Breakdown Voltage | $I_{BR}$ = 50mA | 2.8 | - | 4.5 | V |
| $I_R$ | Leakage Current | $V_R$ = 2.8V | - | - | 0.1 | µA |
| $V_{CL}$ | Clamping Voltage | $t_P$ = 8/20 µs, $I_{PP}$ = 1A | - | - | 5 | V |
| $C_j$ | Junction Capacitance | $V_R$ = 0V, f = 1MHz | - | 45 | 100 | pF |
| $V_{ESD}$ | ESD Withstand Voltage | ESD per IEC 61000-4-2 (Contact)<br>ESD per IEC 61000-4-2 (Air) | 8.0<br>15.0 | -<br>- | -<br>- | kV |

## ESD2117 Electrical Schematic

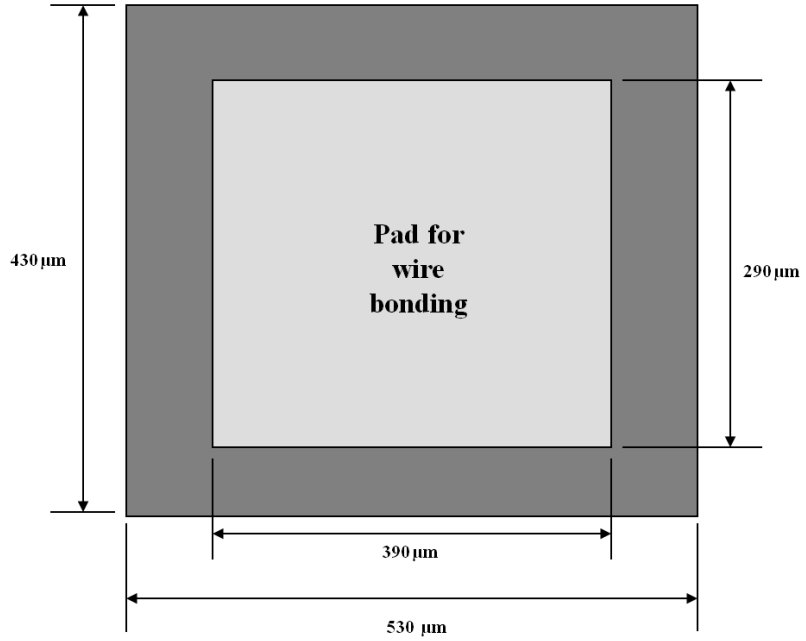



## Ordering Information

| Part No. | | | | | |
|---|---|---|---|---|---|
| **Part Family** | **Signal Clamp** | **Chip Thickness** | **Ship Method** | **Front Metal Pad for Wire-bonding** | **Back Metal for Die Attach** |
| ESD2117- | 3V = 3 Volts | 7 = 7.5 mils | W = Shipped as unsawn 4 in. wafer<br>B = Diced and shipped on Mylar/tape | A = Aluminum | 1 = Ag |

***Part Number Example: ESD2117-3V7BA1 is an ESD chip with 3V Clamp and 7.5 mil thickness, shipped as diced wafers on Mylar tape; the device has Aluminum top pads and Silver back-metal.***

**ESD2117 Sawn Die Dimensions**




**Wafer Array: Saw step size is 590um x 490um**