# SMF05C
## ESD Protection Diode Array

## Features

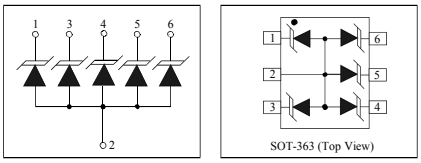
- ◇ 100W (8/20μs) Peak Pulse Power
- ◇ ESD and Latch-Up Protection
- ◇ SOT-363 Package
- ◇ RoHS Compliant
- ◇ Matte Tin Lead finish (Pb-Free
  Protect Five I/O Lines
- ◇ Meet IEC61000-4-2 Level 4:
  Contact Discharge > 20kV Air
  Discharge > 20kV

5C

## Applications

- ◇ Peripherals
- ◇ Audio Players
- ◇ Digital Cameras
- ◇ Cordless Phones
- ◇ Portable Instrumentation
- ◇ Notebooks and Handhelds
- ◇ Personal Digital Assistants (PDA's)
- ◇ Cellular Handsets and Accessories






Schematic & PIN Configuration

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

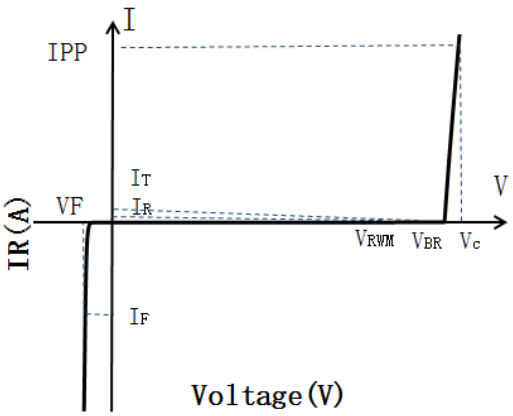
| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $P_{PK}$ | Peak Pulse Power | 100 | W |
| $I_{PP}$ | Peak Pulse Current | 6 | A |
| $V_{ESD}$ (Contact) | Contact ESD Voltage per IEC61000-4-2 | 20 | kV |
| $V_{ESD}$ (Air) | Air ESD Voltage per IEC61000-4-2 | 20 | kV |
| TJ | Junction Temperature | -55 to +125 | ℃ |
| TSTG | Storage Temperature | -55 to +150 | ℃ |

## Electrical Characteristics ($T_a$=25℃unless otherwise noted)

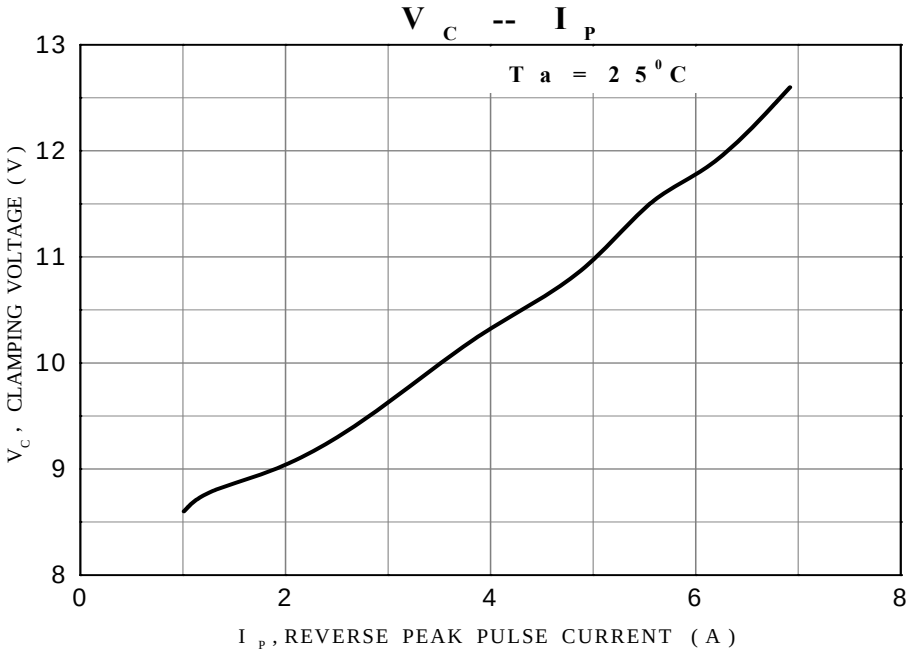
| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| VRWM | Reverse Working Peak Voltage | | | | 5 | V |
| VBR | Reverse Breakdown Voltage | IT = 1mA | 6 | | 8 | V |
| IR | Reverse Leakage Current | VRWM = 5V | | | 5 | μA |
| VC | Clamping Voltage | IPP = 1A (8/20μs) | | | 10 | V |
| VC | Clamping Voltage | IPP = 6A (8/20μs) | | | 18 | V |
| CJ | Capacitance | VR = 0V, f = 1MHz | | 50 | | pF |

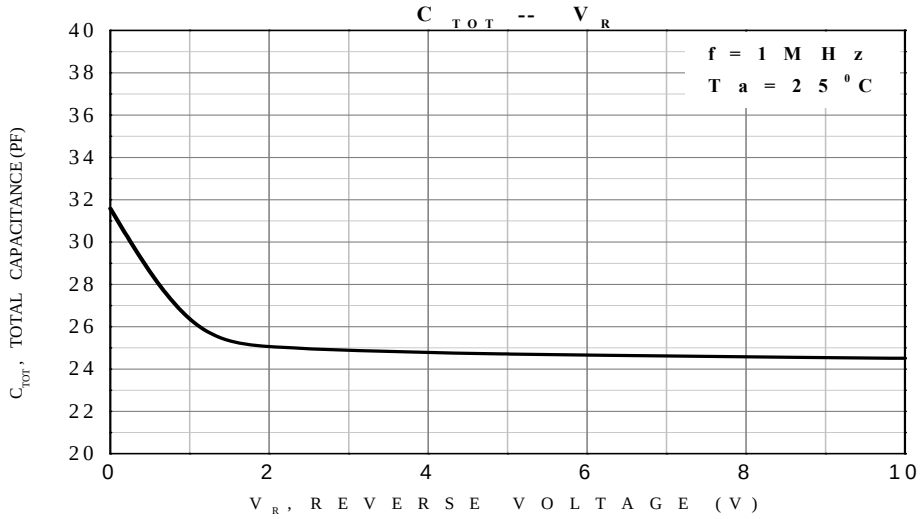
## Electrical Parameters (TA = 25°C unless otherwise noted)

| Symbol | Parameter |
|---|---|
| IT | Test Current |
| IPP | Maximum Reverse Peak Pulse Current |
| Vc | Clamping Voltage @Ic |



## RATING AND CHARACTERISTIC CURVES

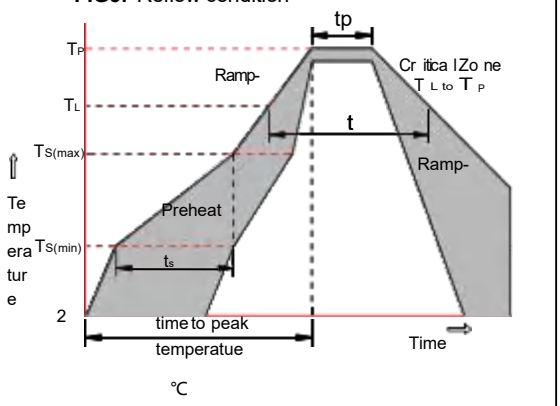


## Soldering parameters

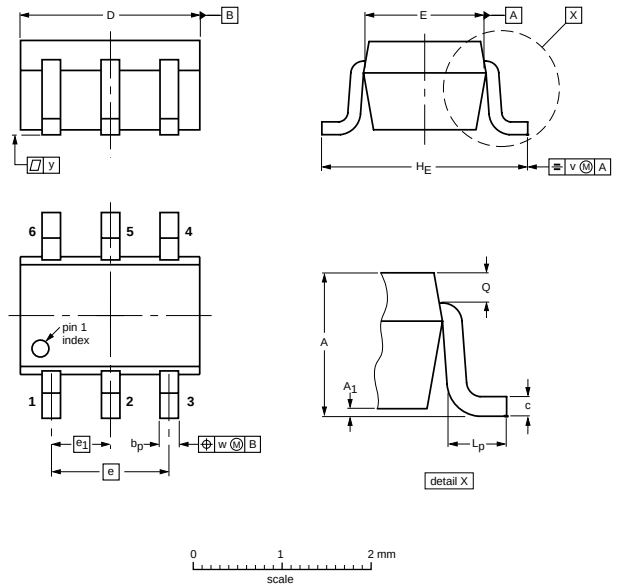
| Reflow Condition | | Pb-Free assembly (see as bellow) |
|---|---|---|
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150℃ |
| | -Temperature Max($T_{s(max)}$) | +200℃ |
| | -Time (Min to Max) (ts) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp ($T_L$) to peak) | | 3℃/sec. Max |
| $T_{s(max)}$ 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℃ |

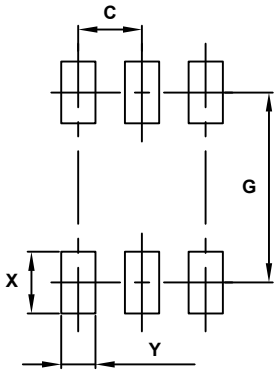
**FIG5:** Reflow condition




## Package Dimensions & Suggested Pad Layout

**SOT-363**



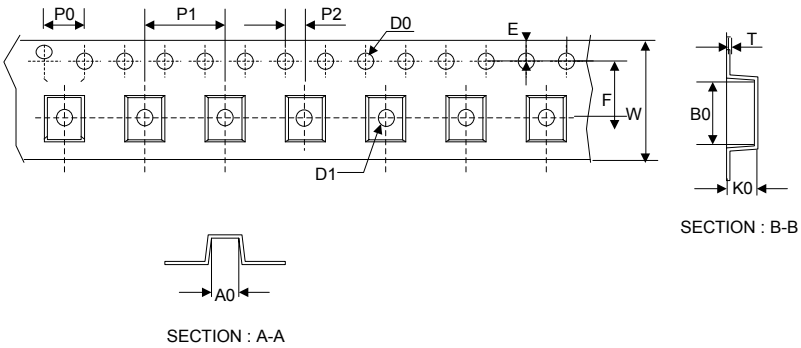

| Dimensions | Value (in mm) |
|---|---|
| C | 0.65 |
| G | 1.90 |
| X | 0.85 |
| Y | 0.40 |

DIMENSIONS (mm are the original dimensions)

| UNIT | A | $A_1$ max | $b_p$ | c | D | E | e | $e_1$ | $H_E$ | $L_p$ | Q | v | w | y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | 1.1<br>0.8 | 0.1 | 0.30<br>0.20 | 0.25<br>0.10 | 2.2<br>1.8 | 1.35<br>1.15 | 1.3 | 0.65 | 2.2<br>2.0 | 0.45<br>0.15 | 0.25<br>0.15 | 0.2 | 0.2 | 0.1 |

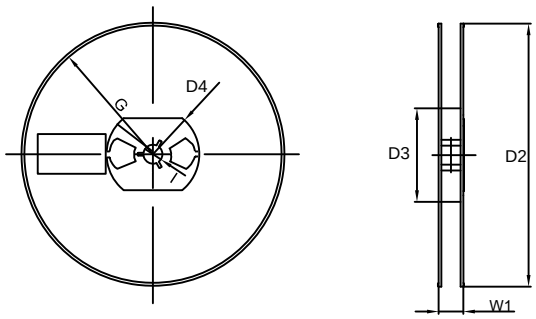
## Tape & rell specification

Tape




| Symbol | Dimension (mm) |
|---|---|
| P0 | 4.00±0.20 |
| P1 | 4.00±0.20 |
| P2 | 2.00±0.20 |
| D0 | 1.55±0.20 |
| D1 | 1.00±0.20 |
| E | 1.55±0.25 |
| F | 3.60±0.20 |
| W | 8.00±0.20 |
| A0 | 3.00±0.20 |
| B0 | 3.00±0.20 |
| K0 | 1.30±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 | |