# PFM220-S THRU PFM2200-S

## 2.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIERS -20V- 200V

## Features

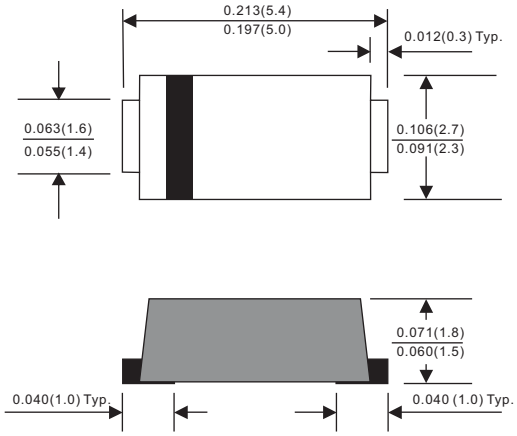
- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance.
- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- High surge capability.
- Guardring for overvoltage protection.
- Ultra high-speed switching.
- Silicon epitaxial planar chip, metal silicon junction.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- **Pb-Free package is available**

  RoHS product for packing code suffix "G"

  Halogen free product for packing code suffix "H"

## Package outline

SMA-S




Dimensions in inches and (millimeters)

## Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AC / SMA-S
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.05 gram

## Maximum ratings and Electrical Characteristics (AT $T_A$=25°C unless otherwise noted)

| PARAMETER | CONDITIONS | Symbol | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Forward rectified current | See Fig.1 | $I_O$ | | | 2.0 | A |
| Forward surge current | 8.3ms single half sine-wave (JEDEC methode) | $I_{FSM}$ | | | 50 | A |
| Reverse current | $V_R$ = $V_{RRM}$ $T_J$ = 25°C | $I_R$ | | | 0.5 | mA |
| | $V_R$ = $V_{RRM}$ $T_J$ = 125°C | | | | 10 | |
| Thermal resistance | Junction to ambient | $R_{\theta JA}$ | | 64 | | °C/W |
| | Junction to case | $R_{\theta JC}$ | | 32 | | °C/W |
| Diode junction capacitance | f=1MHz and applied 4V DC reverse voltage | $C_J$ | | 160 | | pF |
| Storage temperature | | $T_{STG}$ | -65 | | +150 | °C |

| SYMBOLS | $V_{RRM}$ *1 (V) | $V_{RMS}$ *2 (V) | $V_R$ *3 (V) | $V_F$ *4 (V) | Operating temperature $T_J$, (°C) |
|---|---|---|---|---|---|
| PFM220-S | 20 | 14 | 20 | 0.50 | -55 to +125 |
| PFM230-S | 30 | 21 | 30 | | |
| PFM240-S | 40 | 28 | 40 | | |
| PFM245-S | 45 | 31.5 | 45 | | |
| PFM250-S | 50 | 35 | 50 | 0.70 | -55 to +150 |
| PFM260-S | 60 | 42 | 60 | | |
| PFM280-S | 80 | 56 | 80 | 0.85 | |
| PFM2100-S | 100 | 70 | 100 | | |
| PFM2150-S | 150 | 105 | 150 | 0.90 | |
| PFM2200-S | 200 | 140 | 200 | 0.92 | |

*1 Repetitive Peak Reverse Voltage

*2 RMS Voltage

*3 Continuous Reverse Voltage

*4 Maximum Forward Voltage @$I_F$=2.0A

## Rating and characteristic curves (PFM220-S THRU PFM2200-S)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

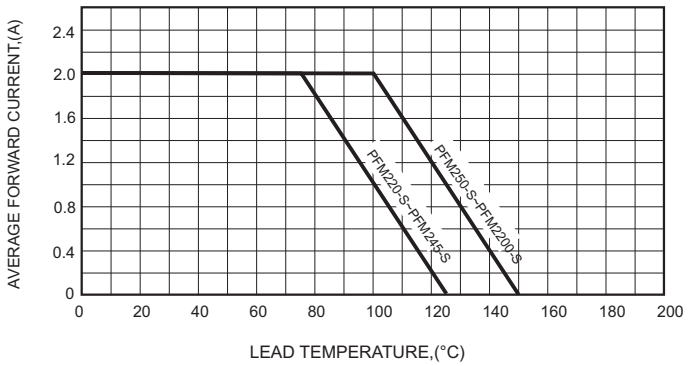



FIG.2-TYPICAL FORWARD CHARACTERISTICS

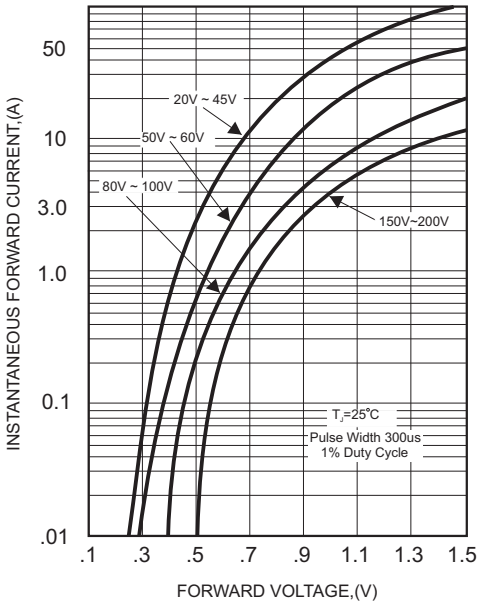



FIG.3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

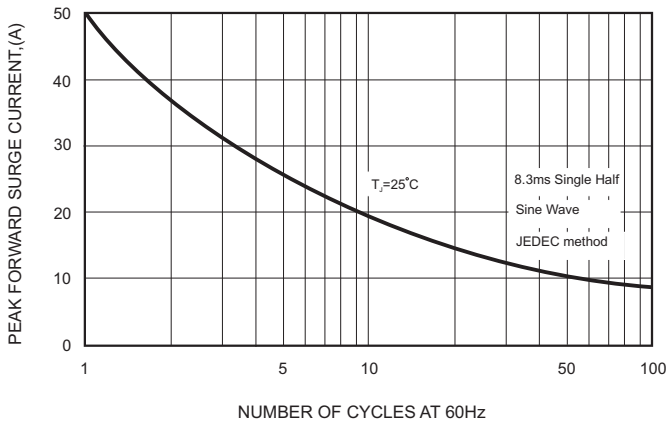



FIG.4-TYPICAL JUNCTION CAPACITANCE

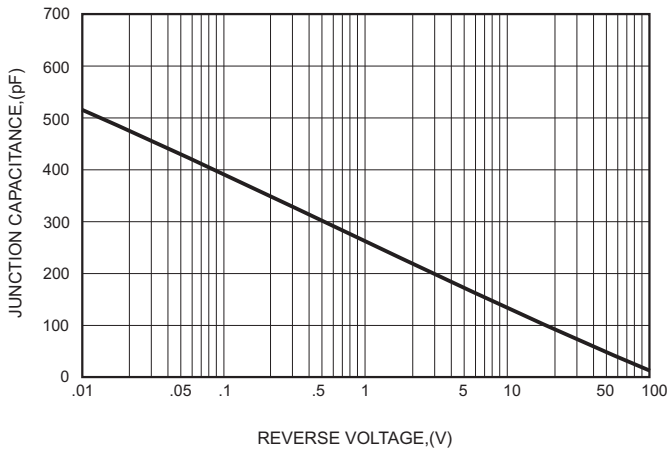
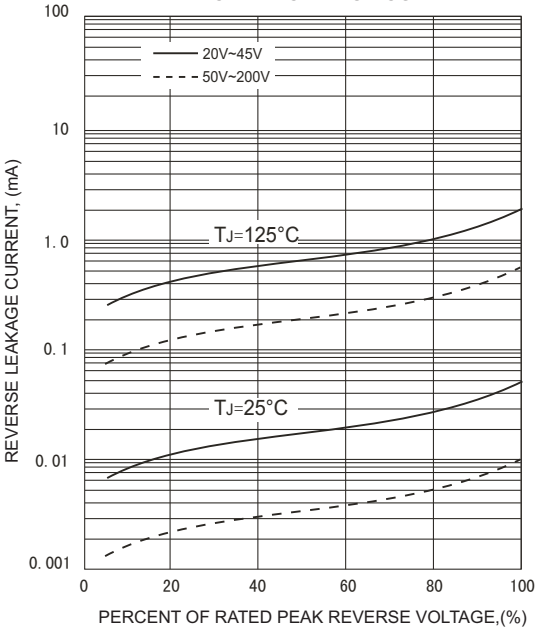



FIG.5 - TYPICAL REVERSE CHARACTERISTICS



# PFM220-S THRU PFM2200-S

## 2.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIERS -20V- 200V

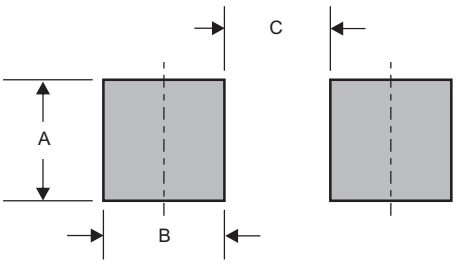
### Pinning information

| Pin | Simplified outline | Symbol |
|---|---|---|
| Pin1 cathode<br>Pin2 anode |  |  |

### Marking

| Type number | Marking code |
|---|---|
| PFM220 -S | SK22 |
| PFM230-S | SK23 |
| PFM240-S | SK24 |
| PFM245-S | SK24 |
| PFM250-S | SK25 |
| PFM260-S | SK26 |
| PFM280-S | SK28 |
| PFM2100-S | S210 |
| PFM2150-S | S215 |
| PFM2200-S | S220 |

### Suggested solder pad layout



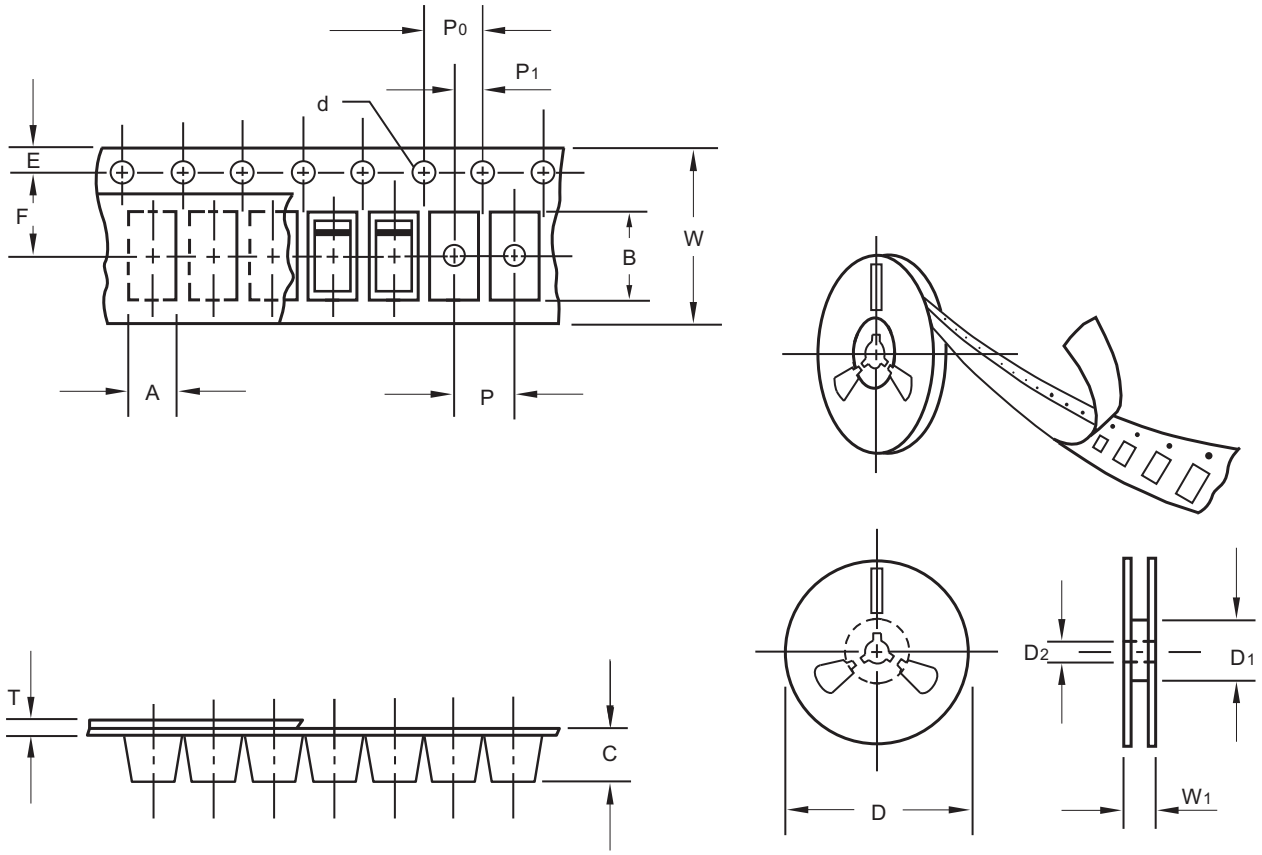

Dimensions in inches and (millimeters)

| PACKAGE | A | B | C |
|---|---|---|---|
| SMA-S | 0.063 (1.60) | 0.059 (1.50) | 0.110 (2.80) |

### Reel packing

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (m/m) | BOX (pcs) | INNER BOX (m/m) | REEL DIA, (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---|---|---|---|---|---|---|---|---|---|
| SMA-S | 7" | 2,000 | 4.0 | 20,000 | 183*170*183 | 178 | 382*356*387 | 160,000 | 15.5 |
| | 13" | 7,500 | 4.0 | 15,000 | 337*337*37 | 330 | 350*330*360 | 120,000 | 14.2 |

## Packing information




unit:mm

| Item | Symbol | Tolerance | SMA-S |
|---|---|---|---|
| Carrier width | A | 0.1 | 2.90 |
| Carrier length | B | 0.1 | 5.50 |
| Carrier depth | C | 0.1 | 2.10 |
| Sprocket hole | d | 0.1 | 1.50 |
| 13" Reel outside diameter | D | 2.0 | 330.00 |
| 13" Reel inner diameter | $D_1$ | min | 50.00 |
| 7" Reel outside diameter | D | 2.0 | 178.00 |
| 7" Reel inner diameter | $D_1$ | min | 62.00 |
| Feed hole diameter | $D_2$ | 0.5 | 13.00 |
| Sprocket hole position | E | 0.1 | 1.75 |
| Punch hole position | F | 0.1 | 5.50 |
| Punch hole pitch | P | 0.1 | 4.00 |
| Sprocket hole pitch | $P_0$ | 0.1 | 4.00 |
| Embossment center | $P_1$ | 0.1 | 2.00 |
| Overall tape thickness | T | 0.1 | 0.23 |
| Tape width | W | 0.3 | 12.00 |
| Reel width | $W_1$ | 1.0 | 18.00 |

Note:Devices are packed in accor dance with EIA standar RS-481-A and specifications listed above.