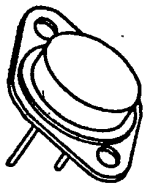
T-03-21

# 5R8/3D THRU 15R8/3D
# 100 AMP
# EPIONII HIGH SPEED RECTIFIER
# 50—150 VOLTS

SSDI
14830 Valley View Avenue
La Mirada, California 90638
(213) 921-9660
TWX 910-583-4807
FAX 213-921-2396

## CASE STYLE R
## TO—3 WITH .060 PINS



## FEATURES

- RADIATION TOLERANT
- ULTRA FAST RECOVERY 75 NSEC MAX
- REVERSE VOLTAGE TO 150 VOLTS
- LOW FORWARD VOLTAGE DROP 450 MV AVERAGE
- LOW REVERSE LEAKAGE
- HERMETICALLY SEALED
- SINGLE CHIP CONSTRUCTION
- 200°C OPERATING, GOLD EUTECTIC DIE ATTACH, ULTRASONIC ALUMINUM WIRE BONDS

## MAXIMUM RATINGS

| Rating | | Symbol | Value | Unit |
|---|---|---|---|---|
| Peak Repetitive Reverse Voltage and DC Blocking Voltage | | $V_{RM(rep)}$, $V_R$ | | Volts |
| | 5R8/3D | | 50 | |
| | 7R8/3D | | 70 | |
| | 10R8/3D | | 100 | |
| | 12R8/3D | | 125 | |
| | 15R8/3D | | 150 | |
| RMS Reverse Voltage | | $V_r$ | | Volts |
| | 5R8/3D | | 35 | |
| | 7R8/3D | | 50 | |
| | 10R8/3D | | 70 | |
| | 12R8/3D | | 90 | |
| | 15R8/3D | | 110 | |
| Half Wave Rectified Forward Current, Averaged Over Full Cycle (Resistive Load, 60Hz, Sine Wave, $T_C$ = 55°C) | | $I_0$ | 100 | Amps |
| Peak Repetitive Forward Current ($T_C$ = 55°C, 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses) | | $I_{FM(rep)}$ | 400 | Amps |
| Peak Surge Current ($T_C$ = 55°C, Superimposed on Rated Current at Rated Voltage, 8.3 ms Pulse) | | $I_{FM(surge)}$ | 1000 | Amps |
| Operating and Storage Temperature | | $T_J$, $T_{stg}$ | -65 to +200 | °C |

## THERMAL CHARACTERISTICS

| Characteristics | Symbol | Max | Unit |
|---|---|---|---|
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 0.5 | °C/W |



NOTE: All specifications subject to change without notice.

## ELECTRICAL CHARACTERISTICS

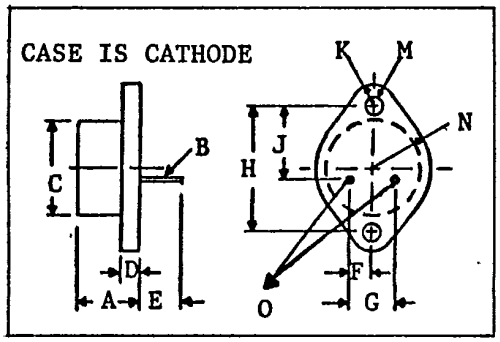
| Characteristics | Symbol | Value | Unit |
|---|---|---|---|
| Max Full Cycle Forward Voltage Drop, Averaged Over Full Cycle ($I_O$ (Max), 60 Hz. Square Wave, $T_C$ = 55°C) | $V_{F(AV)}$ | .45 | Vdc |
| Max Instantaneous Forward Drop (IF = 100 Adc, $T_C$ = 25°C, 300 μs Pulse) | $V_F$ | .9 | Vdc |
| Max Full Cycle Reverse Leakage Current, Averaged Over Full Cycle (Rated $V_R$, 60Hz, Square Wave, $T_C$ = 100°C) | $I_{R(AV)}$ | 5.0* | μAdc |
| Max Reverse Leakage Current (Rated $V_R$, $T_C$ = 25°C) | $I_R$ | 500* | μAdc |
| Max Junction Capacitance ($V_R$ = 10 V, $T_C$ = 25°C) | $C_J$ | 350 | pf |

## REVERSE RECOVERY CHARACTERISTICS

*LOWER LEAKAGE DEVICES AVAILABLE FROM FACTORY

| Characteristics | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Reverse Recovery Time ($I_F$ = 500ma, $I_R$ = 1A, $I_{RR}$ = 250ma) | $t_{rr}$ | --- | 60 | 75 | ns |

## PHYSICAL DIMENSIONS

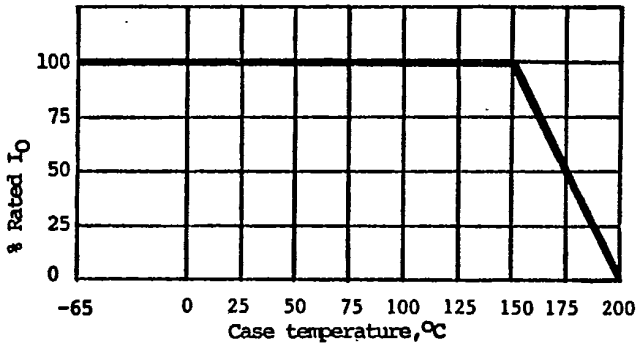


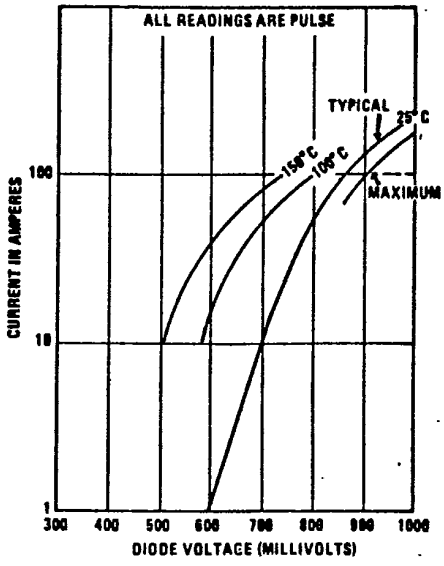

**KEY TO DIMENSIONS:**

(Inches)

A = .250 - .450
B = .057 - .062
C = .875 MAX.
D = .135 MAX.
E = .312 MIN.
F = .205 - .225
G = .420 - .440
H = 1.177 - 1.197
J = .655 - .675
K = .188 MAX.
M = .151 - .161
N = .525 MAX.
O = ANODE

## TYPICAL OPERATING CURVES




SSDI SOLID STATE DEVICES, INC

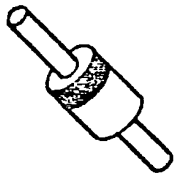
P.O. Box 577, La Mirada, California 90637

Telephone: (213) 921-9660 • TWX 910-583-4807 • FAX#213-921-2396

# SPD5817 THRU SPD5819
# 1 AMP
# SCHOTTKY RECTIFIER
# 20—40 VOLTS

SSDI
14830 Valley View Avenue
La Mirada, California 90638
(213) 921-9660
TWX 910-583-4807
FAX 213-921-2396

**CASE STYLE B**



**FEATURES**

- HYPER-FAST RECOVERY 5ns MAX.
- EXTREMELY LOW FORWARD VOLTAGE DROP
- PIV TO 40 VOLTS
- HIGH SURGE CAPACITY
- HERMETICALLY SEALED DO-41 GLASS PACKAGE
- REPLACEMENT FOR 1N5817 - 1N5819

## MAXIMUM RATINGS

| Rating | | Symbol | Value | Unit |
|---|---|---|---|---|
| Peak Repetitive Reverse Voltage and DC Blocking Voltage | | $V_{RM(rep)}$ $V_R$ | | Volts |
| | SPD5817 | | 20 | |
| | SPD5818 | | 30 | |
| | SPD5819 | | 40 | |
| RMS Reverse Voltage | | $V_r$ | | Volts |
| | SPD5817 | | 14 | |
| | SPD5818 | | 21 | |
| | SPD5819 | | 28 | |
| Half Wave Rectified Forward Current, Averaged Over Full Cycle (Resistive Load, 60Hz, Sine Wave, $T_A = 55°C$) | | $I_O$ | 1.0 | Amps |
| Peak Repetitive Forward Current ($T_A = 55°C$, 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses) | | $I_{FM(rep)}$ | 20 | Amps |
| Peak Surge Current ($T_A = 55°C$, Superimposed on Rated Current at Rated Voltage, 8.3 ms Pulse) | | $I_{FM(surge)}$ | 100 | Amps |
| Operating and Storage Temperature | | $T_J$, $T_{stg}$ | -55 to +125 | °C |

## THERMAL CHARACTERISTICS

| Characteristics | | Symbol | Max | Unit |
|---|---|---|---|---|
| Thermal Resistance, Junction to Leads, | L = 3/8" | $R_{\theta JL}$ | 46 | °C/W |



NOTE: All specifications subject to change without notice.

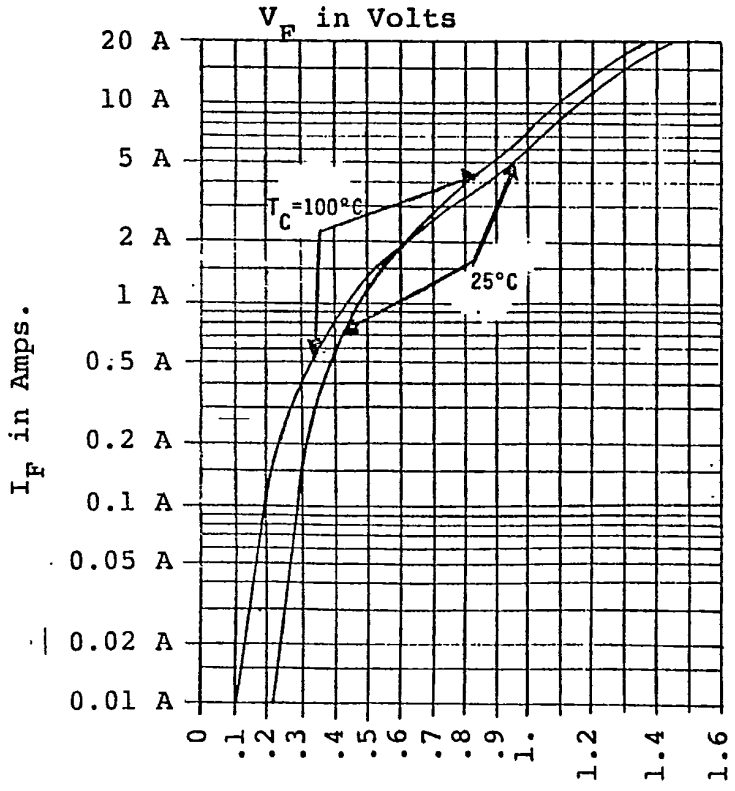
## ELECTRICAL CHARACTERISTICS

| Characteristics | | Symbol | Value | Unit |
|---|---|---|---|---|
| Max Full Cycle Forward Voltage Drop, Averaged Over Full Cycle ($I_O$ (Max), 60 Hz, Square Wave, $T_A$ = 55° C) | SPD5817<br>SPD5818<br>SPD5819 | $V_{F(AV)}$ | .40<br>.50<br>.55 | Vdc |
| Max Instantaneous Forward Voltage Drop ($I_F$ = 1 Adc, $T_A$ = 25°C, 300 μs Pulse) | SPD5817<br>SPD5818<br>SPD5819 | $V_F$ | .55<br>.65<br>.70 | Vdc |
| Max Full Cycle Reverse Leakage Current, Averaged Over Full Cycle (Rated $V_R$ 60Hz, Square Wave, $T_A$ = 100°C) | | $I_{R(AV)}$ | 1.0 | mA |
| Max Reverse Leakage Current (Rated $V_R$, $T_A$ = 25°C) | | $I_R$ | 100 | μAdc |
| Max Junction Capacitance ($V_R$ = 10 V, $T_A$ = 25°C) | | $C_J$ | 50 | pf |

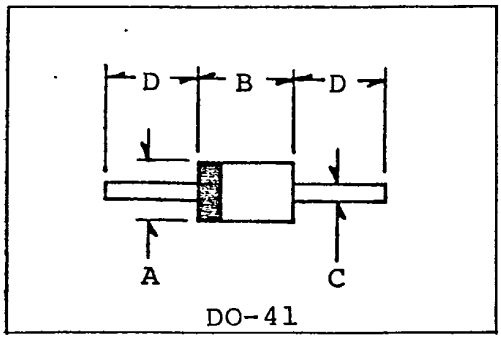
## REVERSE RECOVERY CHARACTERISTICS

| Characteristics | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Reverse Recovery Time ($I_F$ = 500ma, $I_R$ = 1A, $I_{RR}$ = 250ma) | $t_{rr}$ | -- | 3 | 5 | ns |

## TYPICAL OPERATING CURVES




## PHYSICAL DIMENSIONS




DO-41

**KEY TO DIMENSIONS:**

(Inches)

A = .080 - .107
B = .160 - .205
C = .028 - .032
D = 1.00 MIN.

SOLID STATE DEVICES, INC.

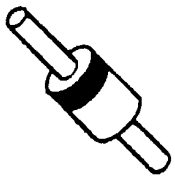
P.O. Box 577, La Mirada, California 90637

Telephone: (213) 921-9660 • TWX 910-583-4807 • FAX#213-921-2396

# SPD0801 THRU SPD1001
# 1 AMP
# SCHOTTKY RECTIFIER
# 80—100 VOLTS

14830 Valley View Avenue
La Mirada, California 90638
(213) 921-9660
TWX 910-583-4807
FAX 213-921-2396

## CASE STYLE B



## FEATURES

- HYPER-FAST RECOVERY 2ns MAX.
- EXTREMELY LOW FORWARD VOLTAGE DROP
- PIV TO 100 VOLTS
- HERMETICALLY SEALED
- HIGH SURGE CAPACITY
- LOW LEAKAGE
- HIGH VOLTAGE REPLACEMENT FOR 1N5817 - 1N5819 SERIES

## MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Peak Repetitive Reverse Voltage and DC Blocking Voltage | $V_{RM\ (rep)}$ $V_R$ | | Volts |
| SPD0801 | | 80 | |
| SPD0901 | | 90 | |
| SPD1001 | | 100 | |
| RMS Reverse Voltage | $V_r$ | | Volts |
| SPD0801 | | 56 | |
| SPD0901 | | 63 | |
| SPD1001 | | 70 | |
| Half Wave Rectified Forward Current, Averaged Over Full Cycle (Resistive Load, 60Hz, Sine Wave, $T_C = 55°C$) | $I_O$ | 1.0 | Amps |
| Peak Repetitive Forward Current ($T_C = 55°C$, 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses) | $I_{FM\ (rep)}$ | 25. | Amps |
| Peak Surge Current ($T_C = 55°C$, Superimposed on Rated Current at Rated Voltage, 8.3 ms Pulse) | $I_{FM\ (surge)}$ | 100 | Amps |
| Operating and Storage Temperature | $T_J$, $T_{stg}$ | -55to+150 | °C |

## THERMAL CHARACTERISTICS

| Characteristics | Symbol | Max | Unit |
|---|---|---|---|
| Thermal Resistance, Junction to Leads, L = 3/8" | $R_{\theta JL}$ | 46 | °C/W |



**NOTE:** All specifications subject to change without notice.

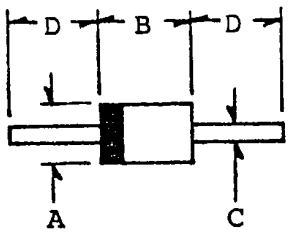
## ELECTRICAL CHARACTERISTICS

| Characteristics | | Symbol | Value | Unit |
|---|---|---|---|---|
| Max Instantaneous Forward Voltage Drop ($I_F$ = .5 Adc, $T_C$ = 25°C, 300 μs Pulse) | SPD0801 SPD0901 SPD1001 | $V_F$ | .65 | Vdc |
| Max Instantaneous Forward Voltage Drop ($I_F$ = 1 Adc, $T_C$ = 25°C, 300 μs Pulse) | SPD0801 SPD0901 SPD1001 | $V_F$ | .95 | Vdc |
| Max Reverse Leakage Current (Rated $V_R$, $T_C$ = 25°C) | | $I_R$ | 200 | μAdc |
| Max Reverse Leakage Current (Rated $V_R$, $T_C$ =100°C) | | $I_R$ | 10 | mAdc |
| Max Junction Capacitance ($V_R$ = 10 V, $T_C$ = 25°C) | | $C_J$ | 30 | pf |

## REVERSE RECOVERY CHARACTERISTICS

| Characteristics | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Reverse Recovery Time ($I_F$ = 500ma, $I_R$ = 1A, $I_{RR}$ = 250ma) | $t_{rr}$ | --- | 1 | 2 | ns |

## PHYSICAL DIMENSIONS




DO-41

**KEY TO DIMENSIONS:**

(Inches)

A = .080 - .107
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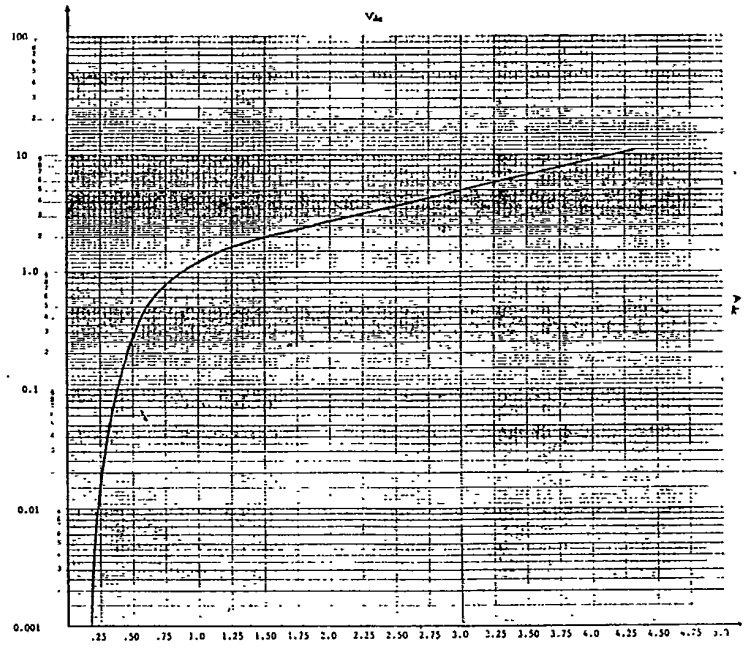
D = 1.00 MIN.

## TYPICAL OPERATING CURVES

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