DIOTEC ELECTRONICS CORP.
18020 Hobart Blvd., Unit B
Gardena, CA 90248 U.S.A
Tel.: (310) 767-1052 Fax: (310) 767-7958

Data Sheet No. SEDR-160C-1B

# 16 AMP SUPER-EFFICIENT RECTIFIERS

## FEATURES

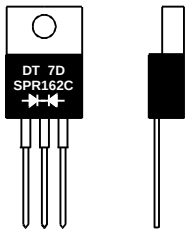
- Glass Passivated for high reliability/temperature performance
- Low switching noise
- Low forward voltage drop
- Low thermal resistance
- High switching capability
- High surge capability

## MECHANICAL DATA

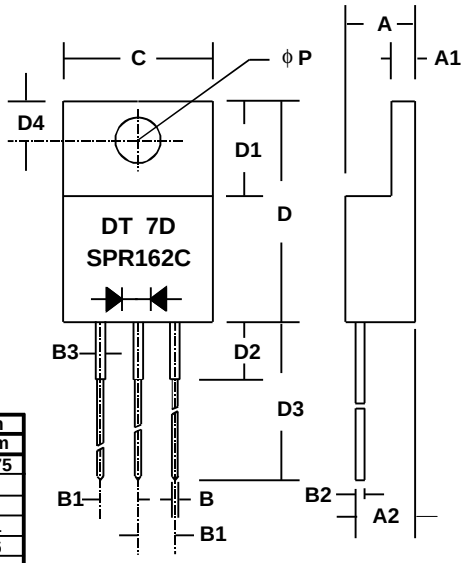
- Case: TO-220 molded plastic (U/L Flammability Rating 94V-0)
- Terminals: Rectangular pins w/ standoff
- Solderability: Per MIL-STD 202 Method 208 guaranteed
- Polarity: Diodes depicted on product
- Mounting Position: Any
- Weight: 0.08 Ounces (2.2 Grams)

## MECHANICAL SPECIFICATION

*ACTUAL SIZE OF TO-220AB PACKAGE*




***NON - INSULATED PACKAGE***




**TO - 220AB**

| Sym | Minimum | | Maximum | |
|---|---|---|---|---|
| | in | mm | in | mm |
| A | | | 0.187 | 4.75 |
| A1 | 0.055* | 1.4* | | |
| A2 | 0.14* | 3.56* | | |
| B | 0.035 | 0.9 | 0.043 | 1.1 |
| B1 | 0.09 | 2.3 | 0.102 | 2.6 |
| B2 | 0.028* | 0.66* | | |
| B3 | 0.051* | 1.3* | | |
| C | | | 0.410 | 10.4 |
| D | 0.59 | 15.0 | 0.61 | 15.5 |
| D1 | 0.25* | 6.4* | | |
| D2 | | | 0.16 | 4.0 |
| D3 | 0.53 | 13.5 | 0.57 | 14.8 |
| D4 | 0.108* | 2.75* | | |
| ϕP | 0.141* | 3.58* | | |

* These dimensions are "Typicals".

**SERIES SPR161C - SPR166C**

## MAXIMUM RATINGS & ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive loads, derate current by 20%.

| PARAMETER (TEST CONDITIONS) | SYMBOL | RATINGS | | | | | | UNITS |
|---|---|---|---|---|---|---|---|---|
| Series Number | | SPR 161C | SPR 162C | SPR 163C | SPR 164C | SPR 165C | SPR 166C | |
| Maximum DC Blocking Voltage | $V_{RM}$ | 100 | 200 | 300 | 400 | 500 | 600 | VOLTS |
| Maximum RMS Voltage | $V_{RMS}$ | 70 | 140 | 210 | 280 | 350 | 420 | VOLTS |
| Maximum Peak Recurrent Reverse Voltage | $V_{RRM}$ | 100 | 200 | 300 | 400 | 500 | 600 | VOLTS |
| Average Forward Rectified Current @ Tc = 100 °C | $I_O$ | 16 | | | | | | AMPS |
| Peak Forward Surge Current ( 8.3mS single half sine wave superimposed on rated load) | $I_{FSM}$ | 200 | | | | | | AMPS |
| Maximum Forward Voltage at 8 Amps DC | $V_{FM}$ | 0.975 | | 1.3 | | 1.5 | | VOLTS |
| Maximum Average DC Reverse Current @ Tc = 25 °C<br>At Rated DC Blocking Voltage @ Tc = 100 °C | $I_{RM}$ | 10<br>500 | | | | | | µA |
| Typical Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 3 | | | | | | °C/W |
| Typical Junction Capacitance (Note 1) | $C_J$ | 65 | | | | | | pF |
| Maximum Reverse Recovery Time ($I_F$=0.5A, $I_R$=1.0A, $I_{RR}$=0.25A) | $T_{RR}$ | 35 | | 50 | | | | nSec |
| Junction Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -65 to +150 | | | | | | °C |

NOTES: (1) Measured at 1 MHz and an applied reverse voltage of 4 volts.

4.97fsedr16c

DIOTEC ELECTRONICS CORP.
18020 Hobart Blvd., Unit B
Gardena, CA 90248 U.S.A
Tel.: (310) 767-1052 Fax: (310) 767-7958



# 16 AMP SUPER EFFICIENT RECTIFIERS

## RATING & CHARACTERISTIC CURVES FOR SERIES SPR161C - SPR166C

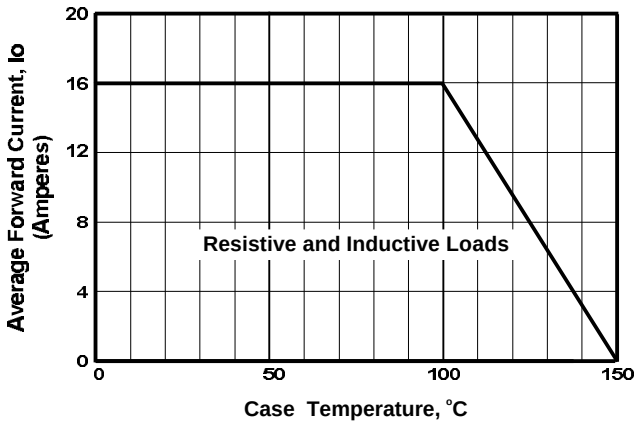



*FIGURE 1. FORWARD CURRENT DERATING CURVE*

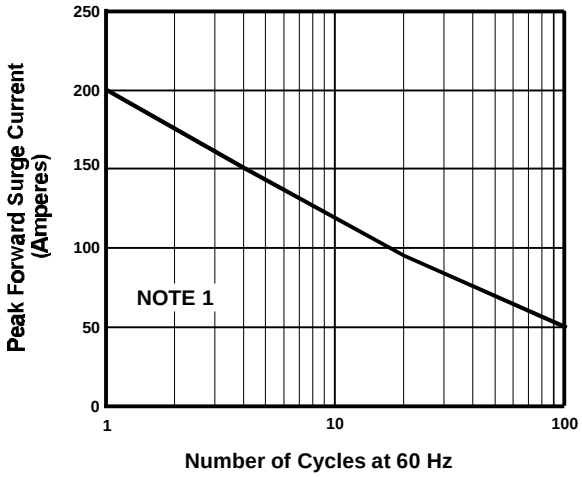



*FIGURE 2. MAXIMUM NON-REPETITIVE SURGE CURRENT*

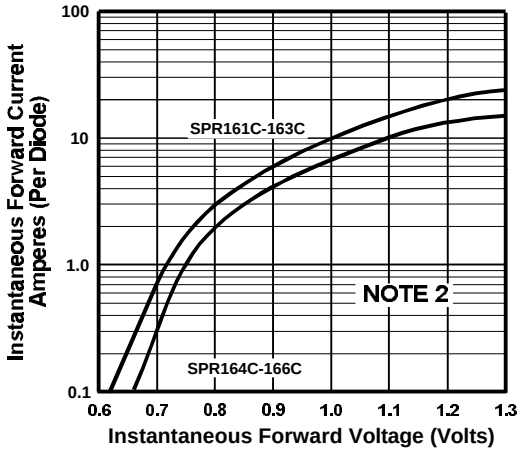



*FIGURE 3. TYPICAL FORWARD CHARACTERISTICS*

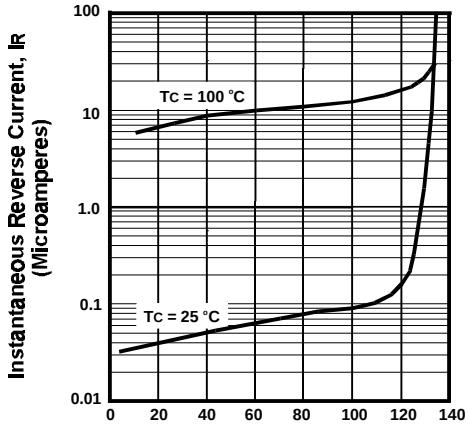



*FIGURE 4. TYPICAL REVERSE CHARACTERISTICS*

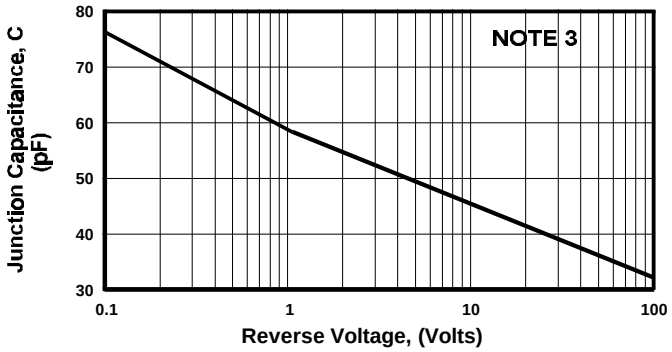



*FIGURE 5. TYPICAL JUNCTION CAPACITANCE*

***NOTES***

**(1) JEDEC Method, 8.3 mSec. Single Half Sine Wave**

**(2) $T_J$ = 25 °C, Pulse Width = 300 μSec, 2.0% Duty Cycle**

**(3) $T_J$ = 25 °C**