

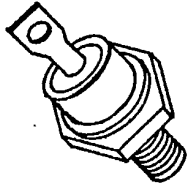
**5R5S THRU 15R5S**  
**30 AMP**  
**EPION II HIGH SPEED RECTIFIER**  
**50-150 VOLTS**

T-03-19



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

**CASE STYLE J**  
**JEDEC DO-5**



**FEATURES**

- RADIATION TOLERANT
- ULTRA FAST RECOVERY 50 NSEC MAX
- REVERSE VOLTAGE TO 150 VOLTS
- VERY LOW FORWARD VOLTAGE DROP 450 MV AVERAGE
- LOW REVERSE LEAKAGE
- HERMETICALLY SEALED
- SINGLE CHIP CONSTRUCTION
- 200°C OPERATING

**MAXIMUM RATINGS**

Rating		Symbol	Value	Unit
Peak Repetitive Reverse Voltage and DC Blocking Voltage	5R5S	$V_{RM} (rep)$		Volts
	7R5S	$V_R$	50	
	10R5S		70	
	12R5S		100	
	15R5S		125	
RMS Reverse Voltage	5R5S	$V_r$	35	Volts
	7R5S		50	
	10R5S		70	
	12R5S		90	
	15R5S		110	
Half Wave Rectified Forward Current, Averaged Over Full Cycle (Resistive Load, 60Hz, Sine Wave, $T_C = 55^\circ C$ )		$I_0$	30	Amps
Peak Repetitive Forward Current ( $T_C = 55^\circ C$ , 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses)		$I_{FM} (rep)$	90	Amps
Peak Surge Current ( $T_C = 55^\circ C$ , Superimposed on Rated Current at Rated Voltage, 8.3 ms Pulse)		$I_{FM} (surge)$	275	Amps
Operating and Storage Temperature		$T_J, T_{stg}$	-65 to +200	°C

**THERMAL CHARACTERISTICS**

Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.5	°C/W

**ELECTRICAL CHARACTERISTICS**

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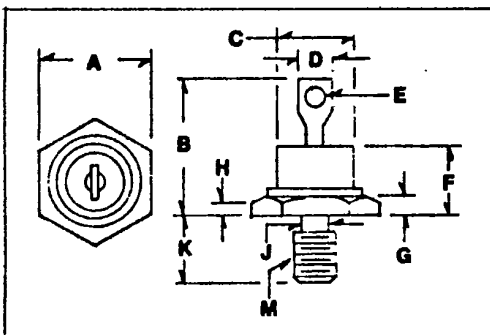
Characteristics	Symbol	Value	Unit
Max Full Cycle Forward Voltage Drop, Averaged Over Full Cycle ( $I_O$ (Max), 60 Hz Square Wave, $T_C = 55^\circ\text{C}$ )	$V_{F(AV)}$	.45	Vdc
Max Instantaneous Forward Drop ( $I_F = 30$ Adc, $T_C = 25^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse)	$V_F$	.9	Vdc
Max Full Cycle Reverse Leakage Current, Averaged Over Full Cycle (Rated $V_R$ , 60Hz Square Wave, $T_C = 100^\circ\text{C}$ )	$I_{R(AV)}$	2.5*	mA
Max Reverse Leakage Current (Rated $V_R$ , $T_C = 25^\circ\text{C}$ )	$I_R$	250*	$\mu\text{A}$ dc
Max Junction Capacitance ( $V_R = 10$ V, $T_C = 25^\circ\text{C}$ )	$C_J$	250	pf

**REVERSE RECOVERY CHARACTERISTICS**

\*LOWER LEAKAGE DEVICES AVAILABLE FROM FACTORY

Characteristics	Symbol	Min	Typ	Max	Unit
Reverse Recovery Time ( $I_F = 500\text{ma}$ , $I_R = 1\text{A}$ , $I_{RR} = 250\text{ma}$ )	$t_{rr}$	---	40	50	ns

**PHYSICAL DIMENSIONS**

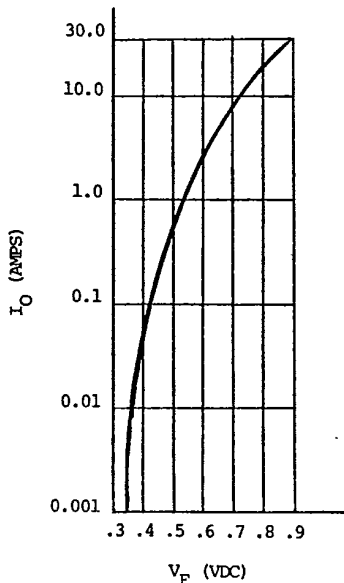
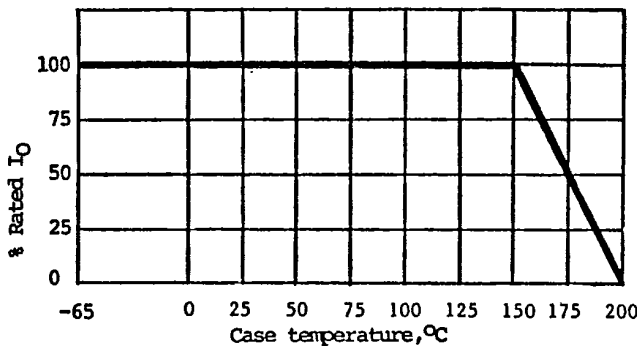


**KEY TO DIMENSIONS:**

(Inches)

- A = .667 TO .687
- B = 1.000 MAX.
- C = .667 MAX.
- D = .375 MAX.
- E = .140 TO .175
- F = .450 MAX.
- G = .115 TO .200
- H = .060 MIN.
- J = .220 TO .249
- K = .422 TO .453
- M =  $\frac{1}{4}$ -28 UNF-2A

**TYPICAL OPERATING CURVES**



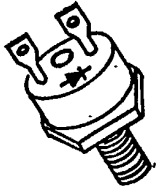
**5R5/61 THRU 15R5/61**  
**30 AMP**  
**EPION II HIGH SPEED RECTIFIER**  
**50-150 VOLTS**

MILITARY GRADE REPLACEMENT FOR COMMERCIAL DO-5

T-03-19  
**SSDI**

14830 Valley View Avenue  
 La Mirada, California 90638  
 P. O. Box 577  
 La Mirada, California 90637  
 (213) 921-9660  
 TWX 910-583-4807

**CASE STYLE T**  
**2 PIN TO-61**



**FEATURES**

- ISOLATED PACKAGE/RADIATION TOLERANT
- ULTRA FAST RECOVERY 50 NSEC MAX
- REVERSE VOLTAGE TO 150V
- LOW FORWARD VOLTAGE DROP 500 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	5R5/61	$V_{RM}$ (rep)	50	Volts
	7R5/61	$V_R$	70	
	10R5/61		100	
	12R5/61		125	
	15R5/61		150	
RMS Reverse Voltage	5R5/61	$V_r$	35	Volts
	7R5/61		50	
	10R5/61		70	
	12R5/61		90	
	15R5/61		110	
Half Wave Rectified Forward Current, Averaged Over Full Cycle (Resistive Load, 60Hz, Sine Wave, $T_C = 55^\circ\text{C}$ )		$I_o$	30	Amps
Peak Repetitive Forward Current ( $T_C = 55^\circ\text{C}$ , 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses)		$I_{FM}$ (rep)	90	Amps
Peak Surge Current ( $T_C = 55^\circ\text{C}$ , Superimposed on Rated Current at Rated Voltage, 8.3 ms Pulse)		$I_{FM}$ (surge)	275	Amps
Operating and Storage Temperature		$T_J, T_{stg}$	-65 to +200	°C

**THERMAL CHARACTERISTICS**

Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.5	°C/W

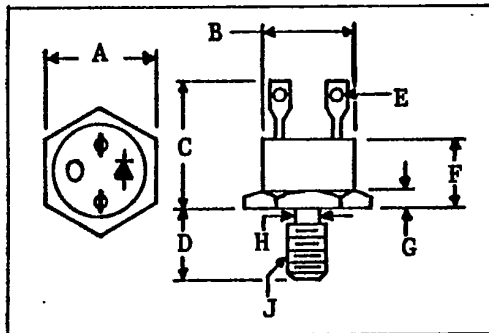
**ELECTRICAL CHARACTERISTICS**

Characteristics	Symbol	Value	Unit
Max Full Cycle Forward Voltage Drop, Averaged Over Full Cycle. ( $I_O$ (Max), 60 Hz. Square Wave, $T_C = 55^\circ\text{C}$ )	$V_F(AV)$	.5	Vdc
Max Instantaneous Forward Drop ( $I_F = 30$ Adc, $T_C = 25^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse)	$V_F$	1.0	Vdc
Max Full Cycle Reverse Leakage Current, Averaged Over Full Cycle. (Rated $V_R$ , 60Hz. Square Wave, $T_C = 100^\circ\text{C}$ )	$I_R(AV)$	2.5*	mA
Max Reverse Leakage Current (Rated $V_R$ , $T_C = 25^\circ\text{C}$ )	$I_R$	250*	$\mu\text{A}$
Max Junction Capacitance ( $V_R = 10$ V, $T_C = 25^\circ\text{C}$ )	$C_J$	250	pf

**REVERSE RECOVERY CHARACTERISTICS** \*LOWER LEAKAGE DEVICES AVAILABLE FROM FACTORY

Characteristics	Symbol	Min	Typ	Max	Unit
Reverse Recovery Time ( $I_F = 500\text{ma}$ , $I_R = 1\text{A}$ , $I_{RR} = 250\text{ma}$ )	$t_{rr}$	--	40	50	ns

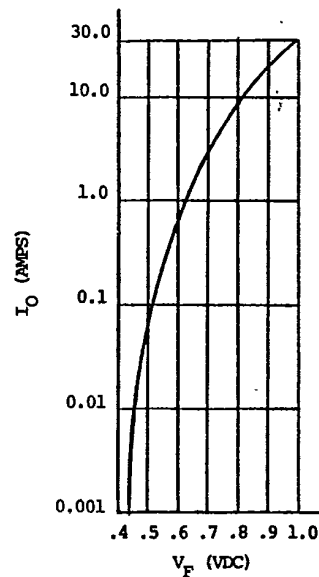
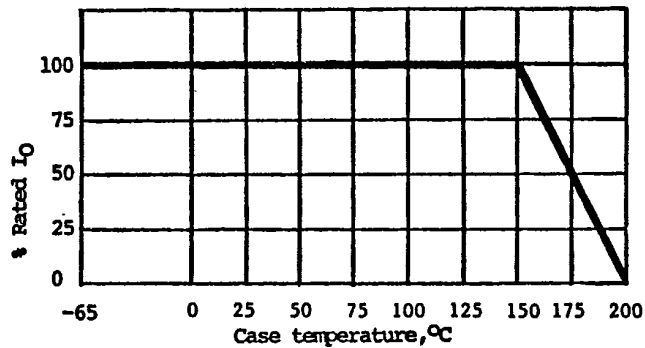
**PHYSICAL DIMENSIONS**



**KEY TO DIMENSIONS:**

- (Inches)
- A = .667 - .687
  - B = .570 - .610
  - C = .640 - .875
  - D = .422 - .455
  - E = .047 - .072 (Diameter)
  - F = .325 - .460
  - G = .090 - .150
  - H = .220 - .249 (Diameter)
  - J =  $\frac{1}{4}$  - 28 UNF-2A

**TYPICAL OPERATING CURVES**



# 5R5/3D THRU 15R5/3D

## 30 AMP

### EPION II HIGH SPEED RECTIFIER

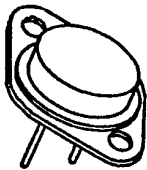
## 50-150 VOLTS



14830 Valley View Avenue  
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#### CASE STYLE R

#### TO-3 WITH .060 PINS



#### FEATURES

- RADIATION TOLERANT
- ULTRA FAST RECOVERY 50 NSEC MAX
- REVERSE VOLTAGE UP 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	5R5/3D	$V_{RM} (rep)$ $V_R$	50	Volts
	7R5/3D		70	
	10R5/3D		100	
	12R5/3D		125	
	15R5/3D		150	
	RMS Reverse Voltage	5R5/3D	$V_r$	
7R5/3D			50	
10R5/3D			70	
12R5/3D			90	
15R5/3D			110	
Half Wave Rectified Forward Current, Averaged Over Full Cycle (Resistive Load, 60Hz, Sine Wave, $T_C = 55^\circ C$ )		$I_0$	30	Amps
Peak Repetitive Forward Current ( $T_C = 55^\circ C$ , 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses)		$I_{FM} (rep)$	110	Amps
Peak Surge Current ( $T_C = 55^\circ C$ , Superimposed on Rated Current at Rated Voltage, 8.3 ms Pulse)		$I_{FM} (surge)$	350	Amps
Operating and Storage Temperature		$T_J, T_{stg}$	-65 to +200	°C

#### THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.5	°C/W

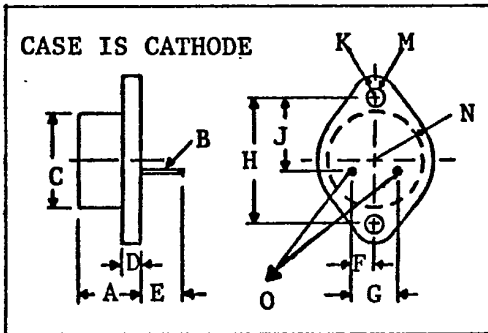
**ELECTRICAL CHARACTERISTICS**

Characteristics	Symbol	Value	Unit
Max Full Cycle Forward Voltage Drop, Averaged Over Full Cycle ( $I_O$ (Max), 60 Hz Square Wave, $T_C = 55^\circ\text{C}$ )	$V_{F(AV)}$	.45	Vdc
Max Instantaneous Forward Drop ( $I_F = 30$ Adc, $T_C = 25^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse)	$V_F$	.9	Vdc
Max Full Cycle Reverse Leakage Current, Averaged Over Full Cycle (Rated $V_R$ , 60Hz, Square Wave, $T_C = 100^\circ\text{C}$ )	$I_{R(AV)}$	2.5 *	mA
Max Reverse Leakage Current (Rated $V_R$ , $T_C = 25^\circ\text{C}$ )	$I_R$	250 *	$\mu\text{Adc}$
Max Junction Capacitance ( $V_R = 10$ V, $T_C = 25^\circ\text{C}$ )	$C_J$	250	pf

**REVERSE RECOVERY CHARACTERISTICS** \*LOWER LEAKAGE DEVICES AVAILABLE FROM FACTORY

Characteristics	Symbol	Min	Typ	Max	Unit
Reverse Recovery Time ( $I_F = 500\text{ma}$ , $I_R = 1\text{A}$ , $I_{RR} = 250\text{ma}$ )	$t_{rr}$	--	40	50	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**

