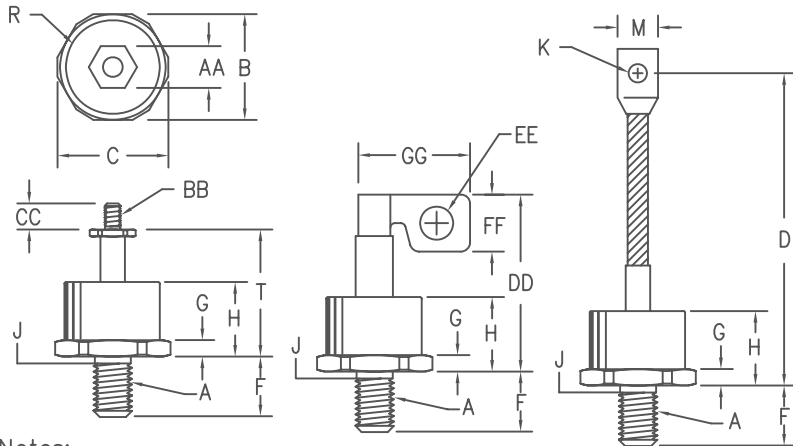




**THE DATASHEET OF**  
**S42120F**



# Silicon Power Rectifier S/R42 Series



**Notes:**

1. 3/8-24 UNF-3A
2. Full threads within 2 1/2 threads
3. 1/4-28 UNF-2B
4. Reverse polarity: Stud is Anode

Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
A	---	---	---	---	1
B	1.040	1.060	26.67	26.92	
C	---	1.166	---	29.61	
D	4.30	4.70	109.22	119.38	
F	.610	.640	15.49	16.25	
G	.213	.233	5.41	5.66	
H	---	.745	---	18.92	
J	.344	.373	8.74	9.47	2
K	.276	.286	7.01	7.26	
M	.465	.670	11.81	17.78	
R	---	.850	---	21.59	Dia
T	1.426	---	36.22	---	
AA	.422	.453	10.84	11.09	
BB	---	---	---	---	3
CC	.407	---	10.33	---	
DD	---	1.75	---	44.45	
EE	.215	.225	5.46	5.72	Dia
FF	.360	.390	9.14	9.91	
GG	.740	.750	18.80	19.05	

Microsemi  
Catalog Number

Peak Reverse  
Voltage

*S4210	100V
*S4220	200V
*S4230	300V
*S4240	400V
*S4250	500V
*S4260	600V
*S4280	800V
*S42100	1000V
*S42120	1200V
*S42140	1400V
*S42160	1600V

\*Change S to R in part number for Reverse Polarity  
Add the suffix TS for Top Stud; F for flag

**DO205AA (DO8)**

- Soft recovery
- Glass Passivated Die
- 2000 Amps Surge Rating
- Glass to metal seal construction
- VRRM to 1600V

## Electrical Characteristics

Average forward current	$I_F(AV)$ 125 Amps	$T_C = 146^\circ C$ , Half Sine Wave, $R_{\theta JC} = 0.40^\circ C/W$
Maximum surge current	$I_{FSM}$ 2000 Amps	8.3ms, half sine, $T_J = 200^\circ C$
Max $I^2 t$ for fusing	$I^2 t$ 16600 $A^2 s$	
Max peak forward voltage	$V_{FM}$ 1.2 Volts	$I_{FM} = 200A; T_J = 25^\circ C^*$
Max peak reverse current	$I_{RM}$ 50 $\mu A$	$V_{RRM}, T_J = 25^\circ C$
Max peak reverse current	$I_{RM}$ 5.0 mA	$V_{RRM}, T_J = 150^\circ C$
Max Recommended Operating Frequency	7.5kHz	

\*Pulse test: Pulse width 300  $\mu sec$ . Duty cycle 2%

## Thermal and Mechanical Characteristics

Storage temperature range	$T_{STG}$	-65°C to 200°C
Operating junction temp range	$T_J$	-65°C to 200°C
Maximum thermal resistance	$R_{\theta JC}$	0.40°C/W Junction to Case
Mounting torque		80-100 inch pounds
Weight		2.75 ounces (78 grams) typical

# S/R42

Figure 1  
Typical Forward Characteristics

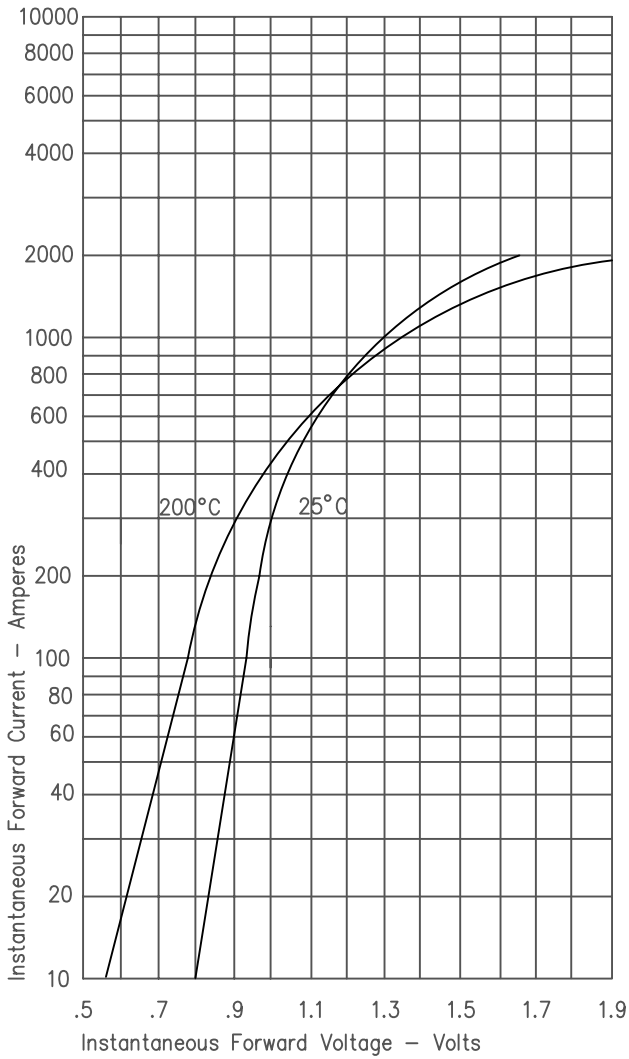


Figure 3  
Forward Current Derating

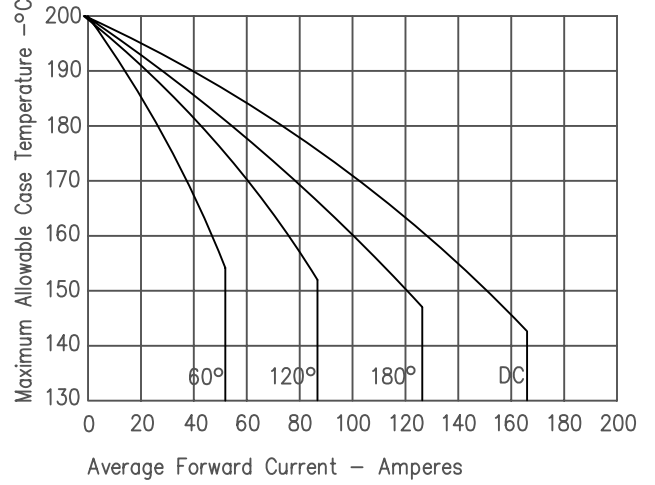


Figure 4  
Maximum Forward Power Dissipation

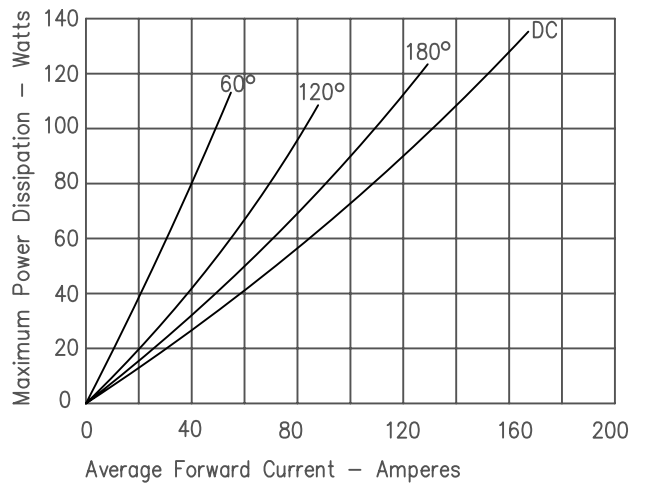


Figure 2  
Typical Reverse Characteristics

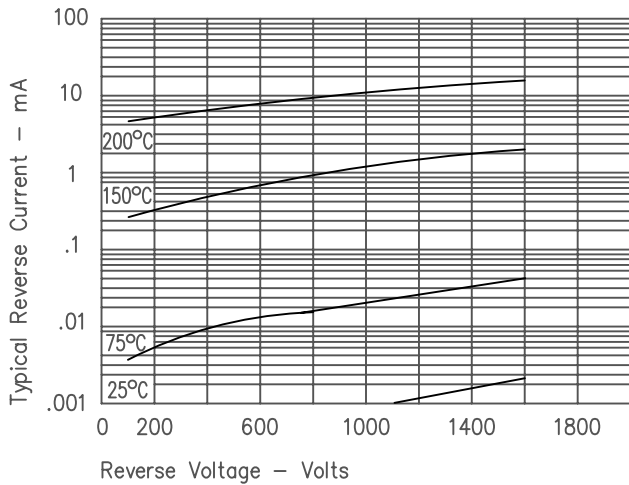
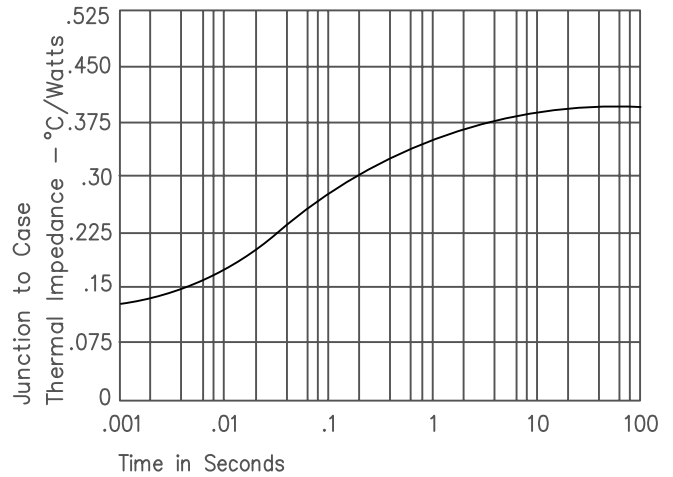


Figure 5  
Transient Thermal Impedance



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