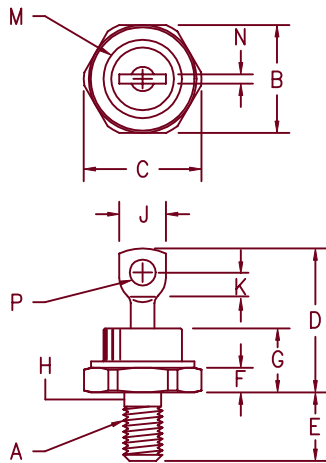


# Silicon Power Rectifier

## 1N1183–1N1190, 1N3765–1N3768



**Notes:**

1. Full threads within 2 1/2 threads
2. Standard Polarity: Stud is Cathode  
Reverse Polarity: Stud is Anode

Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
A	---	---	---	---	1/4–28
B	.667	.687	16.95	17.44	
C	---	.793	---	20.14	
D	---	1.00	---	25.40	
E	.422	.453	10.72	11.50	
F	.115	.200	2.92	5.08	
G	---	.450	---	11.43	
H	.220	.249	5.59	6.32	1
J	.250	.375	6.35	9.52	
K	.156	---	3.97	---	
M	---	.667	---	16.94	Dia
N	---	.080	---	2.03	
P	.140	.175	3.56	4.44	Dia

### DO203AB (DO–5)

JEDEC Numbers	Peak Reverse Voltage
1N1183, 1N1183A	50V
1N1184, 1N1184A	100V
1N1185, 1N1185A	150V
1N1186, 1N1186A	200V
1N1187, 1N1187A	300V
1N1188, 1N1188A	400V
1N1189, 1N1189A	500V
1N1190, 1N1190A	600V
1N3765	700V
1N3766	800V
1N3767	900V
1N3768	1000V

For Reverse Polarity add R to Part Number

- Glass Passivated Die
- 800A surge rating
- Glass to metal construction
- $V_{RRM}$  to 1000V

#### Electrical Characteristics

Average forward current	$I_F(AV)$ 40 Amps	$T_C = 146^\circ C$ , half sine wave, $R_{\theta JC} = 1.25^\circ C/W$
Maximum surge current	$I_{FSM}$ 800 Amps	8.3ms, half sine, $T_J = 200^\circ C$
Max $I^2 t$ for fusing	$I^2 t$ 2600 A <sup>2</sup> s	
Max peak forward voltage	$V_{FM}$ 1.19 Volts	$I_{FM} = 90A; T_J = 25^\circ C^*$
Max peak reverse current	$I_{RM}$ 10 $\mu A$	$V_{RRM}, T_J = 25^\circ C$
Max peak reverse current	$I_{RM}$ 2.0 mA	$V_{RRM}, T_J = 150^\circ C$
Max Recommended Operating Frequency	10kHz	

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

#### Thermal and Mechanical Characteristics

Storage temperature range	$T_{STG}$	$-65^\circ C$ to $200^\circ C$
Operating junction temp range	$T_J$	$-65^\circ C$ to $200^\circ C$
Maximum thermal resistance	$R_{\theta JC}$	1.25 $^\circ C/W$ Junction to Case
Mounting torque		25–30 inch pounds
Weight		.5 ounces (14 grams) typical

9–3–03 Rev. 1

# 1N1183-1N1190, 1N3765-1N3768

Figure 1  
Typical Forward Characteristics

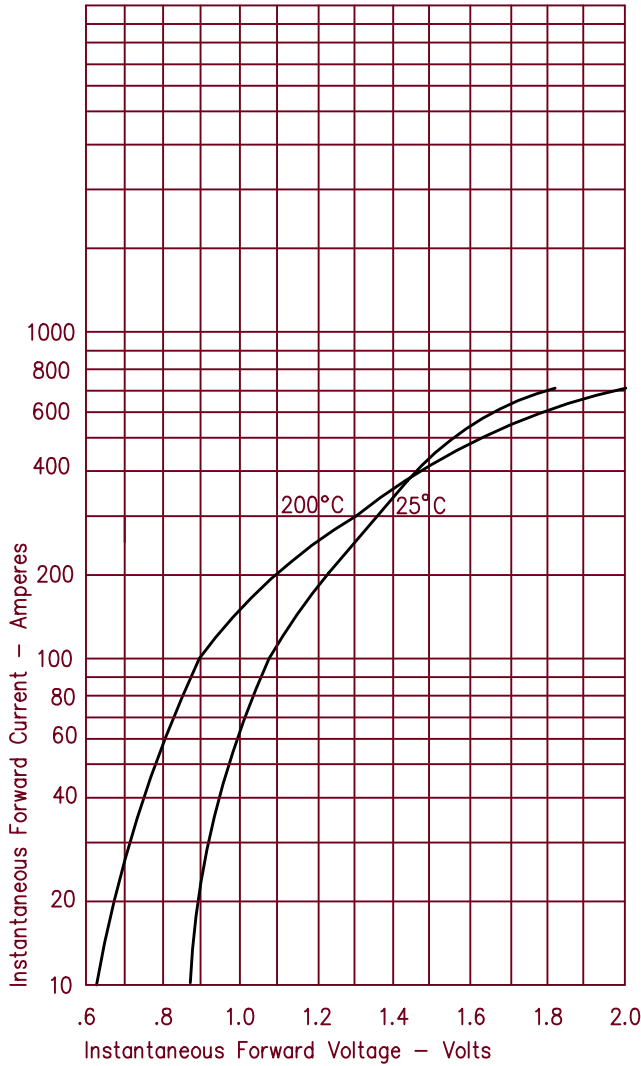


Figure 3  
Forward Current Derating

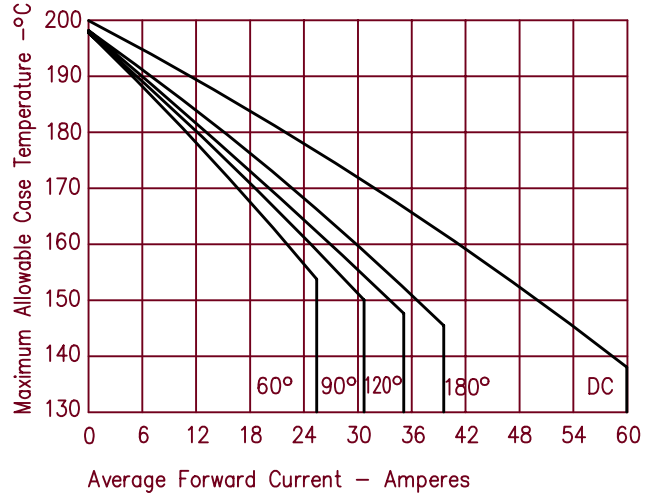


Figure 4  
Maximum Forward Power Dissipation

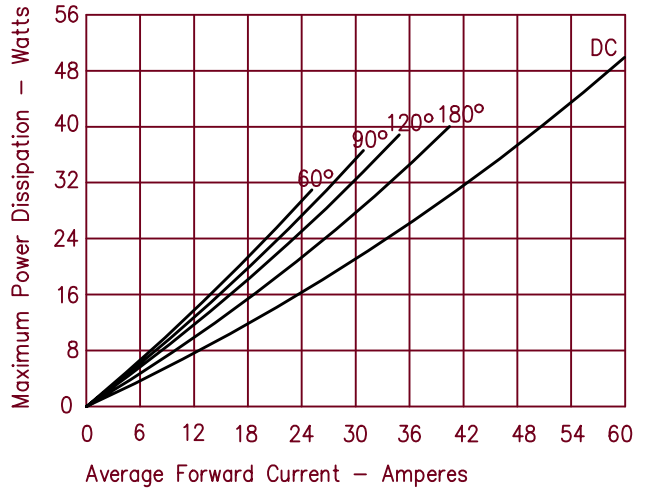


Figure 2  
Typical Reverse Characteristics

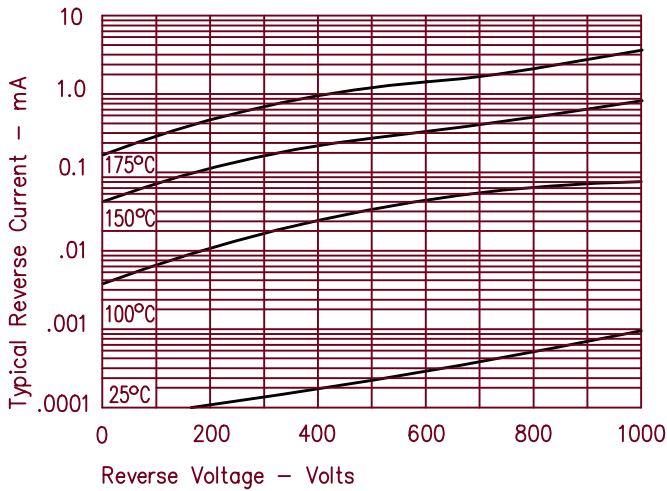
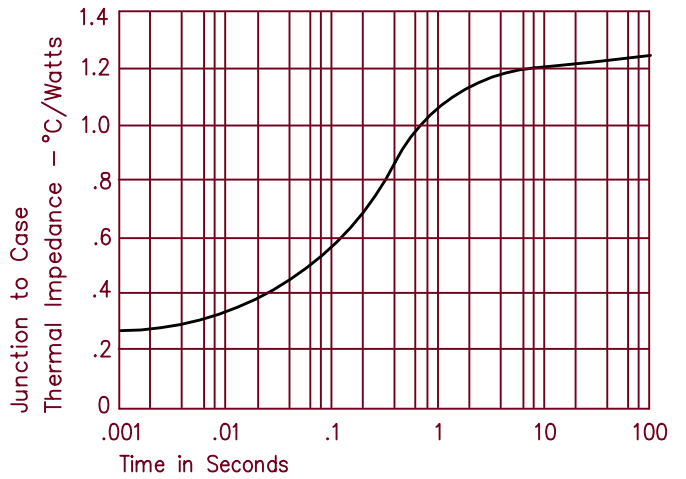


Figure 5  
Transient Thermal Impedance



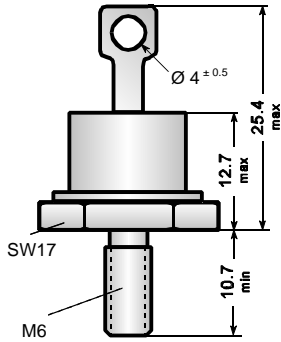
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Datasheets for electronics components.

**Silicon-Power Rectifiers**

**Silizium-Leistungs-Gleichrichter**



Dimensions / Maße in mm

Nominal current – Nennstrom	35 A
Repetitive peak reverse voltage Periodische Spitzensperrspannung	50...1000 V
Metal case – Metallgehäuse	DO-5
Weight approx. – Gewicht ca.	6 g
Recommended mounting torque Empfohlenes Anzugsdrehmoment	26 ± 10% lb.in. 3 ± 10% Nm
Standard:	Cathode to stud / am Gewinde
Index R:	Anode to stud / am Gewinde (e.g. 1N 1183 R)

**Maximum ratings**

**Grenzwerte**

Type	Repetitive peak reverse voltage Periodische Spitzensperrspg.	Surge peak reverse voltage Stoßspitzensperrspannung
Typ	$V_{RRM}$ [V]	$V_{RSM}$ [V]
1N 1183 PBY 301	50	60
1N 1184 PBY 302	100	120
1N 1186 PBY 303	200	240
1N 1188 PBY 304	400	480
1N 1190 PBY 305	600	720
1N 3766 PBY 306	800	1000
1N 3768 PBY 307	1000	1200

Max. average forward rectified current, R-load Dauergrenzstrom in Einwegschaltung mit R-Last	$T_C = 100^\circ\text{C}$	$I_{FAV}$	35 A <sup>1)</sup>
Repetitive peak forward current Periodischer Spitzenstrom	$f > 15$ Hz	$I_{FRM}$	80 A <sup>1)</sup>
Rating for fusing, $t < 10$ ms Grenzlastintegral, $t < 10$ ms	$T_A = 25^\circ\text{C}$	$i^2t$	1000 A <sup>2</sup> s
Peak fwd. half sine-wave surge current, $T_A = 25^\circ\text{C}$ superimposed on rated load Stoßstrom für eine Sinus-Halbwellen, überlagert bei Nennlast	$f = 60$ Hz $f = 50$ Hz	$I_{FSM}$ $I_{FSM}$	500 A 450 A

<sup>1)</sup> Valid, if the temp. of the stud is kept to 100°C – Gültig, wenn die Temp. am Gewinde auf 100°C gehalten wird

Operating junction temperature – Sperrschichttemperatur	$T_j$	- 65...+175°C
Storage temperature – Lagerungstemperatur	$T_s$	- 65...+175°C

**Characteristics**

**Kennwerte**

Forward voltage Durchlaßspannung	$T_j = 25^\circ\text{C}$	$I_F = 100\text{ A}$	$V_F$	< 1.5 V
Leakage current Sperrstrom	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$	$I_R$	< 500 $\mu\text{A}$
Thermal resistance junction to stud Wärmewiderstand Sperrschicht – Gehäuse			$R_{thC}$	< 1 K/W

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