



# Rectifier Diode

## Types W121CEC180 to W121CEC220

Development part number Wx587ED180-220

**Absolute Maximum Ratings**

	<b>VOLTAGE RATINGS</b>	<b>MAXIMUM LIMITS</b>	<b>UNITS</b>
V <sub>RRM</sub>	Repetitive peak reverse voltage, (note 1)	2200-1800	V
V <sub>RSM</sub>	Non-repetitive peak reverse voltage, (note 1)	2300-1900	V

	<b>OTHER RATINGS</b>	<b>MAXIMUM LIMITS</b>	<b>UNITS</b>
I <sub>F(AV)M</sub>	Maximum average forward current, T <sub>sink</sub> =55°C, (note 2)	12100	A
I <sub>F(AV)M</sub>	Maximum average forward current. T <sub>sink</sub> =100°C, (note 2)	9020	A
I <sub>F(AV)M</sub>	Maximum average forward current. T <sub>sink</sub> =100°C, (note 3)	5690	A
I <sub>F(RMS)M</sub>	Nominal RMS forward current, T <sub>sink</sub> =25°C, (note 2)	21770	A
I <sub>F(d.c.)</sub>	D.C. forward current, T <sub>sink</sub> =25°C, (note 4)	19450	A
I <sub>FSM</sub>	Peak non-repetitive surge t <sub>p</sub> =10ms, V <sub>rm</sub> =60%V <sub>RRM</sub> , (note 5)	94.5	kA
I <sub>FSM2</sub>	Peak non-repetitive surge t <sub>p</sub> =10ms, V <sub>rm</sub> ≤10V, (note 5)	103.9	kA
I <sup>2</sup> t	I <sup>2</sup> t capacity for fusing t <sub>p</sub> =10ms, V <sub>rm</sub> =60%V <sub>RRM</sub> , (note 5)	44.7	kA <sup>2</sup> s
I <sup>2</sup> t	I <sup>2</sup> t capacity for fusing t <sub>p</sub> =10ms, V <sub>rm</sub> ≤10V, (note 5)	54.0	kA <sup>2</sup> s
T <sub>j op</sub>	Operating temperature range	-40 to +175	°C
T <sub>stg</sub>	Storage temperature range	-55 to +175	°C

Notes:-

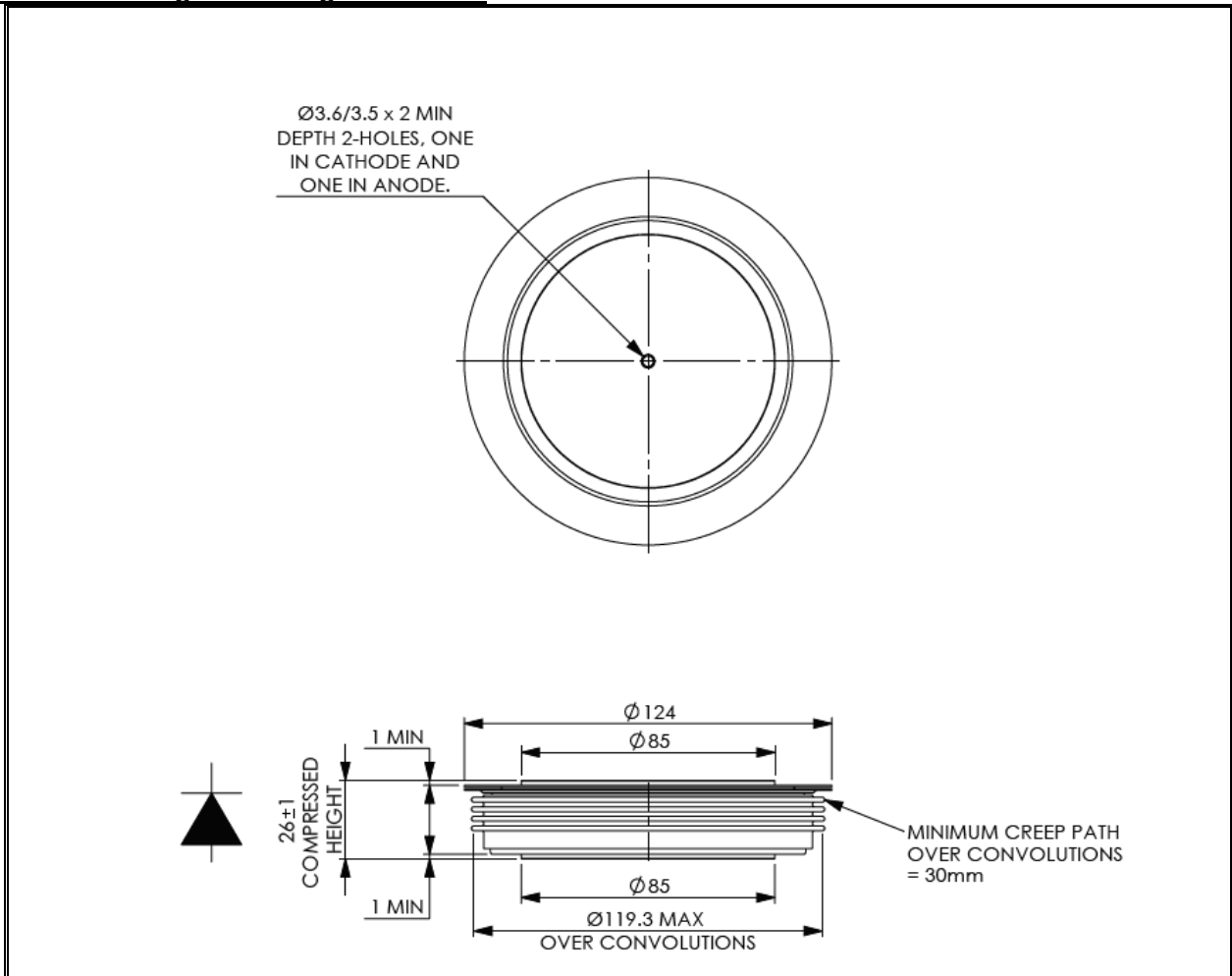
- 1) De-rating factor of 0.13% per °C is applicable for T<sub>j</sub> below 25°C.
- 2) Double side cooled, single phase; 50Hz, 180° half-sinewave.
- 3) Single side cooled, single phase; 50Hz, 180° half-sinewave.
- 4) Double side cooled.
- 5) Half-sinewave, 175°C T<sub>j</sub> initial.

### Characteristics

	PARAMETER	MIN.	TYP.	MAX.	TEST CONDITIONS (Note 1)	UNITS
V <sub>FM</sub>	Maximum peak forward voltage	-	-	0.99	I <sub>FM</sub> =6200A	V
V <sub>T0</sub>	Threshold voltage	-	-	0.726		V
r <sub>T</sub>	Slope resistance	-	-	0.042		mΩ
I <sub>RRM</sub>	Peak reverse current	-	-	150	Rated V <sub>RRM</sub>	mA
Q <sub>rr</sub>	Recovered charge	-	6500	7050		μC
Q <sub>ra</sub>	Recovered charge, 50% Chord	-	5600	-	I <sub>TM</sub> =2500A, t <sub>p</sub> =2000μs, di/dt=10A/μs, V <sub>r</sub> =100V	μC
I <sub>rm</sub>	Reverse recovery current	-	320	-		A
t <sub>rr</sub>	Reverse recovery time, 50% chord	-	35	-		μs
R <sub>thJK</sub>	Thermal resistance, junction to heatsink	-	-	0.005	Double side cooled	K/W
		-	-	0.010	Single side cooled	K/W
F	Mounting force	76	-	93	Note 2	kN
W <sub>t</sub>	Weight		2.2			kg

Notes:-

- 1) Unless otherwise indicated T<sub>j</sub>=175°C.
- 2) For other clamp forces, please consult factory.

**Outline Drawing & Ordering Information**

**ORDERING INFORMATION**

(Please quote 10 digit code as below)

<b>W121C</b>	<b>EC</b>	<b>◆◆</b>	<b>0</b>
Fixed Type Code	Fixed Outline Code	Voltage code $V_{RRM}/100$ 18 and 22	Fixed code

 Order code: W121CEC220 – 2200V  $V_{RRM}$ , 26mm clamp height capsule.

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