

Date:- 2<sup>nd</sup> Jan, 2020

Data Sheet Issue:- P1

# Rectifier Diode Types W121CEC180 to W121CEC220

Development part number Wx587ED180-220

#### **Absolute Maximum Ratings**

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

	OTHER RATINGS	MAXIMUM LIMITS	UNITS
I <sub>F(AV)M</sub>	Maximum average forward current, T <sub>sink</sub> =55°C, (note 2)	12100	Α
I <sub>F(AV)M</sub>	Maximum average forward current. T <sub>sink</sub> =100°C, (note 2)	9020	Α
I <sub>F(AV)M</sub>	Maximum average forward current. T <sub>sink</sub> =100°C, (note 3)	5690	Α
I <sub>F(RMS)M</sub>	Nominal RMS forward current, T <sub>sink</sub> =25°C, (note 2)	21770	Α
I <sub>F(d.c.)</sub>	D.C. forward current, T <sub>sink</sub> =25°C, (note 4)	19450	Α
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
l <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
l <sup>2</sup> t	I²t 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  $^{\circ}$ C is applicable for  $T_{j}$  below 25 $^{\circ}$ 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>i</sub> initial.



# **Characteristics**

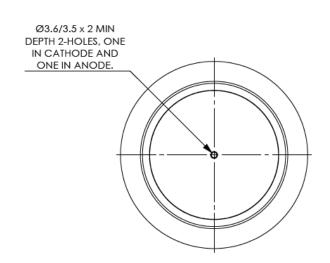
	PARAMETER	MIN.	TYP.	MAX.	TEST CONDITIONS (Note 1)	UNITS
V <sub>FM</sub>	Maximum peak forward voltage	-	-	0.99	I <sub>FM</sub> =6200A	V
$V_{T0}$	Threshold voltage	-	-	0.726		V
r⊤	Slope resistance	-	-	0.042		mΩ
I <sub>RRM</sub>	Peak reverse current	-	-	150	Rated V <sub>RRM</sub>	mA
Qrr	Recovered charge	-	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,	μC
I <sub>rm</sub>	Reverse recovery current	-	320	-	V <sub>r</sub> =100V	Α
t <sub>rr</sub>	Reverse recovery time, 50% chord	-	35	-		μs
R <sub>th</sub> JK	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
$W_t$	Weight		2.2			kg

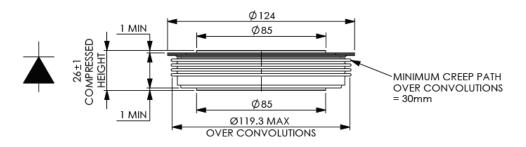
#### Notes:-

- 1) Unless otherwise indicated  $T_j=175$ °C.
- 2) For other clamp forces, please consult factory.



### **Outline Drawing & Ordering Information**





ORDERI	NG INFORMATION	(Please quote 10 digit code as below)		
W121C	EC	<b>**</b>	0	
Fixed Type Code	Fixed Outline Code	Voltage code V <sub>RRM</sub> /100 18 and 22	Fixed code	

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

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