

Fast Recovery Diode

Types M2505MC200 & M2505MC250

Development part number MX499MC250

Absolute Maximum Ratings

	VOLTAGE RATINGS	MAXIMUM LIMITS	UNITS
V _{RRM}	Repetitive peak reverse voltage, (note 1)	2000-2500	V
V _{RSM}	Non-repetitive peak reverse voltage, (note 1)	2100-2600	V

	OTHER RATINGS	MAXIMUM LIMITS	UNITS
I _{F(AV)M}	Maximum average forward current, T _{sink} =55°C, (note 2)	2505	A
I _{F(AV)M}	Maximum average forward current. T _{sink} =100°C, (note 2)	1210	A
I _{F(AV)M}	Maximum average forward current. T _{sink} =100°C, (note 3)	670	A
I _{F(RMS)M}	Nominal RMS forward current, T _{sink} =25°C, (note 2)	4970	A
I _{F(d.c.)}	D.C. forward current, T _{sink} =25°C, (note 4)	4250	A
I _{FSM}	Peak non-repetitive surge t _p =10ms, V _{rm} =60%V _{RRM} , (note 5)	27	kA
I _{FSM2}	Peak non-repetitive surge t _p =10ms, V _{rm} ≤10V, (note 5)	30	kA
I ² t	I ² t capacity for fusing t _p =10ms, V _{rm} =60%V _{RRM} , (note 5)	3.65×10 ⁶	A ² s
I ² t	I ² t capacity for fusing t _p =10ms, V _{rm} ≤10V, (note 5)	4.50×10 ⁶	A ² s
T _{j op}	Operating temperature range	-40 to +125	°C
T _{stg}	Storage temperature range	-55 to +150	°C

Notes:-

- 1) De-rating factor of 0.13% per °C is applicable for T_j below 25°C.
- 2) Double side cooled, single phase; 50Hz, 180° half-sinewave.
- 3) Cathode side cooled, single phase; 50Hz, 180° half-sinewave.
- 4) Double side cooled.
- 5) Half-sinewave, 125°C T_j initial.

Characteristics

	PARAMETER	MIN.	TYP.	MAX.	TEST CONDITIONS (Note 1)	UNITS
V _{FM}	Maximum peak forward voltage	-	-	1.50	I _{FM} =3000A	V
V _{FM}	Maximum peak forward voltage	-	-	2.18	I _{FM} =7515A	V
V _{T0}	Threshold voltage	-	-	0.991		V
r _T	Slope resistance	-	-	0.162		mΩ
I _{RRM}	Peak reverse current	-	-	100	Rated V _{RRM}	mA
Q _{rr}	Recovered charge	-	600	800	I _{TM} =1000A, t _p =1000μs, di/dt=10A/μs, V _r =100V	μC
Q _{ra}	Recovered charge, 50% Chord	-	375	-		μC
I _{rm}	Reverse recovery current	-	75	80		A
t _{rr}	Reverse recovery time, 50% chord	-	10	-		μs
Q _{rr}	Recovered charge	-	1950	-	I _{TM} =2000A, t _p =1000μs, di/dt=60A/μs, V _r =300V	μC
Q _{ra}	Recovered charge, 50% Chord	-	1350	-		μC
I _{rm}	Reverse recovery current	-	355	-		A
t _{rr}	Reverse recovery time, 50% chord	-	7.6	-		μs
E _r	Reverse recovery energy	-	600	-		mJ
R _{thJK}	Thermal resistance, junction to heatsink	-	-	0.0140	Double side cooled	K/W
		-	-	0.0265	Anode side cooled	K/W
		-	-	0.0297	Cathode side cooled	K/W
F	Mounting force	25	-	31	Note 2	kN
W _t	Weight		530			g

Notes:-

- 1) Unless otherwise indicated T_j=125°C.
- 2) For other clamp forces, please consult factory.

Curves

Figure 1 – Forward characteristics of Limit device

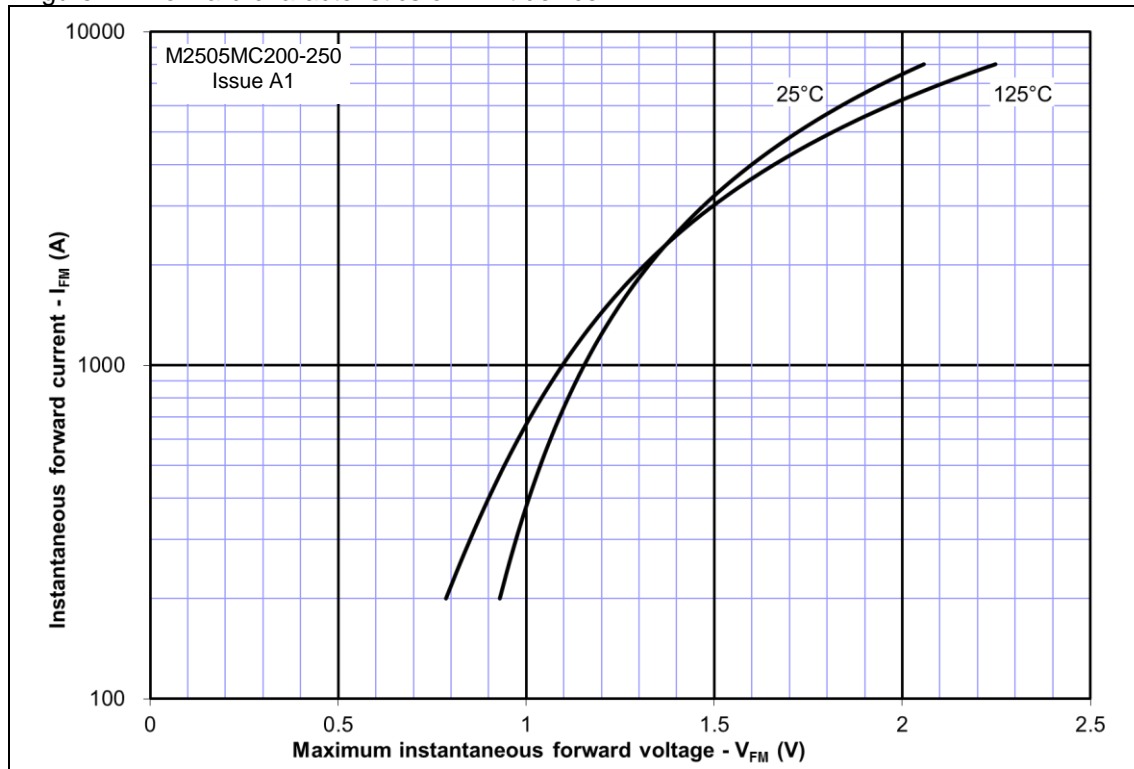


Figure 2 – Transient thermal impedance

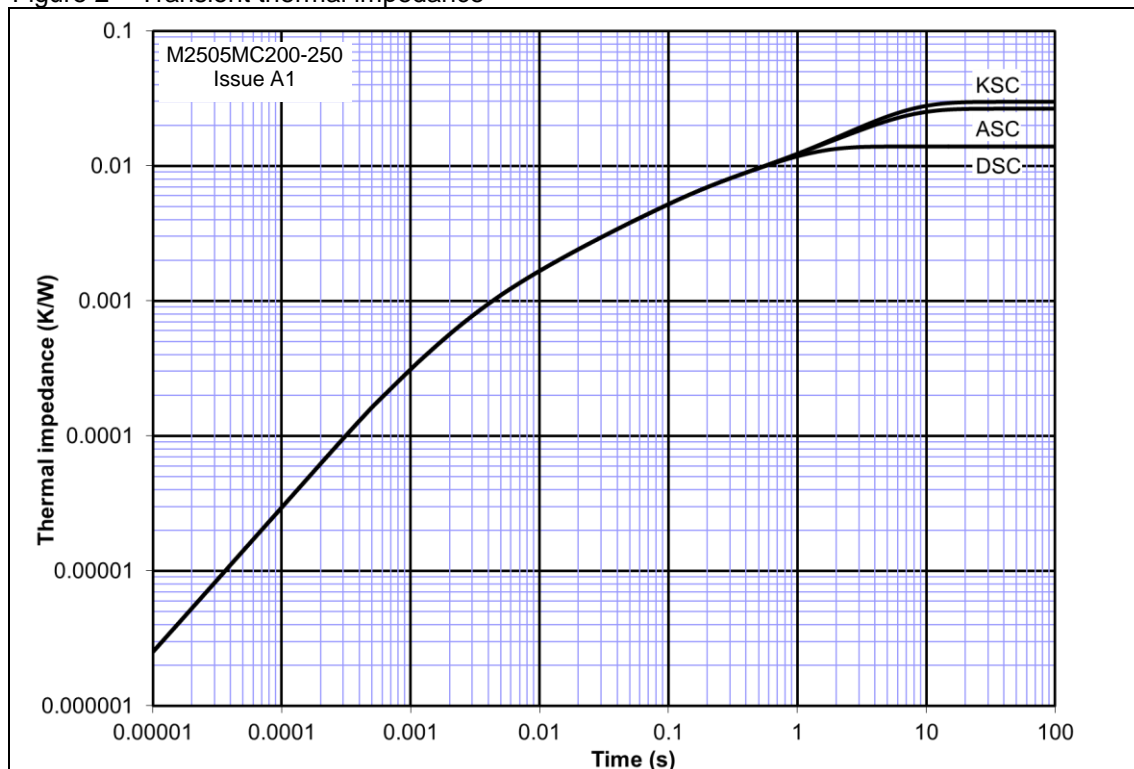
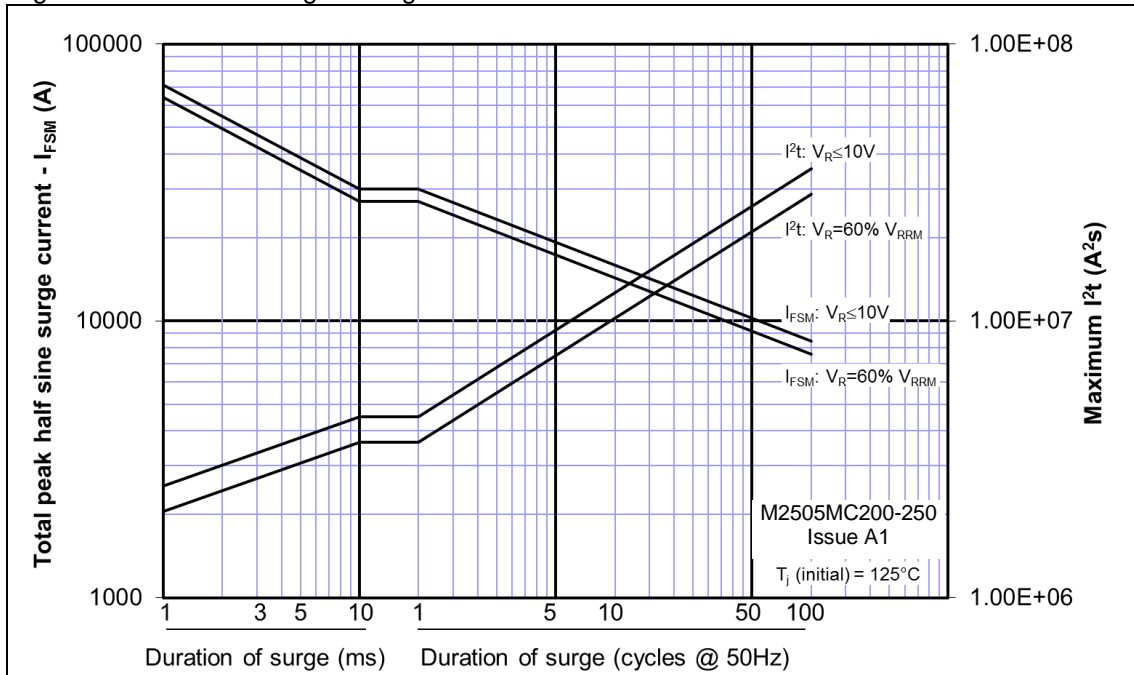
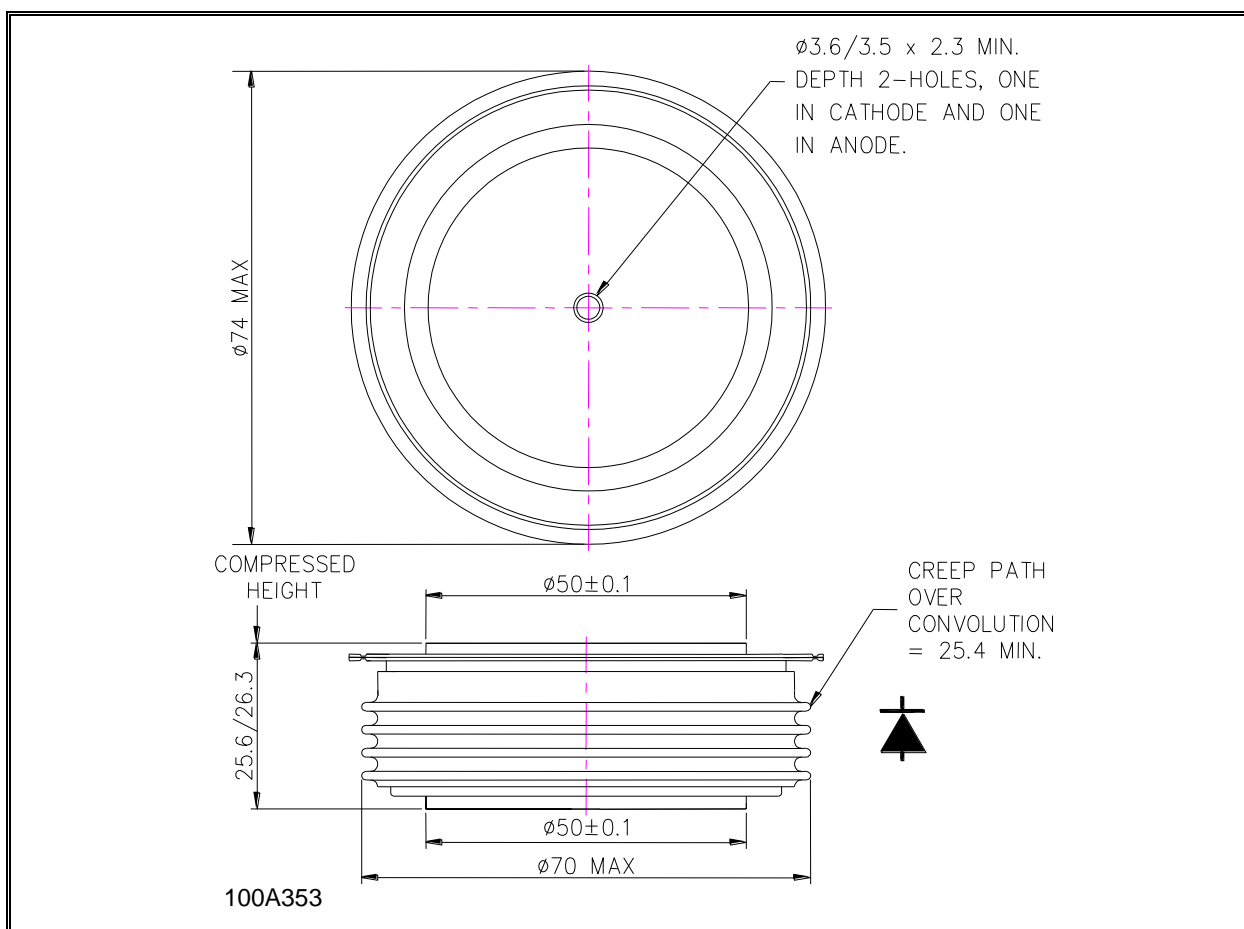


Figure 3 – Maximum Surge Rating



Outline Drawing & Ordering Information



ORDERING INFORMATION

(Please quote 10 digit code as below)

M2505	MC	25	0
Fixed Type Code	Fixed Outline Code	Voltage code $V_{RRM}/100$ 25	Fixed code

Order code: W2505MC250 – 2500V V_{RRM}; 26.3mm clamp height capsule.

IXYS Semiconductor GmbH
Edisonstraße 15
D-68623 Lampertheim
Tel: +49 6206 503-0
Fax: +49 6206 503-627
E-mail: marcom@ixys.de



IXYS UK Westcode Ltd
Langley Park Way, Langley Park,
Chippenham, Wiltshire, SN15 1GE.
Tel: +44 (0)1249 444524
Fax: +44 (0)1249 659448
E-mail: sales@ixysuk.com

IXYS Corporation
1590 Buckeye Drive
Milpitas CA 95035 7418 USA
Tel: +1 (408) 547 9000
Fax: +1 (408) 496 0670
E-mail: sales@ixys.net

www.ixysuk.com

www.ixys.net

IXYS Long Beach
IXYS Long Beach, Inc
2500 Mira Mar Ave, Long Beach
CA 90815
Tel: +1 (562) 296 6584
Fax: +1 (562) 296 6585
E-mail: service@ixyslongbeach.com

The information contained herein is confidential and is protected by Copyright. The information may not be used or disclosed except with the written permission of and in the manner permitted by the proprietors IXYS UK Westcode Ltd.

© IXYS UK Westcode Ltd.

In the interest of product improvement, IXYS UK Westcode reserves the right to change specifications at any time without prior notice.

Devices with a suffix code (2-letter, 3-letter or letter/digit/letter combination) added to their generic code are not necessarily subject to the conditions and limits contained in this report.



Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.