

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_{TO}	Threshold voltage	-	-	0.991		V
r_T	Slope resistance	-	-	0.162		$m\Omega$
I_{RRM}	Peak reverse current	-	-	100	Rated V_{RRM}	mA
Q_{rr}	Recovered charge	-	600	800		μC
Q_{ra}	Recovered charge, 50% Chord	-	375	-	$I_{TM}=1000A, t_p=1000\mu s, di/dt=10A/\mu s, V_r=100V$	μC
I_{rm}	Reverse recovery current	-	75	80		A
t_{rr}	Reverse recovery time, 50% chord	-	10	-		μs
Q_{rr}	Recovered charge	-	1950	-		μC
Q_{ra}	Recovered charge, 50% Chord	-	1350	-	$I_{TM}=2000A, t_p=1000\mu s, di/dt=60A/\mu s, V_r=300V$	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 $T_j=125^\circ C$.
- 2) For other clamp forces, please consult factory.

Curves

Figure 1 – Forward characteristics of Limit device

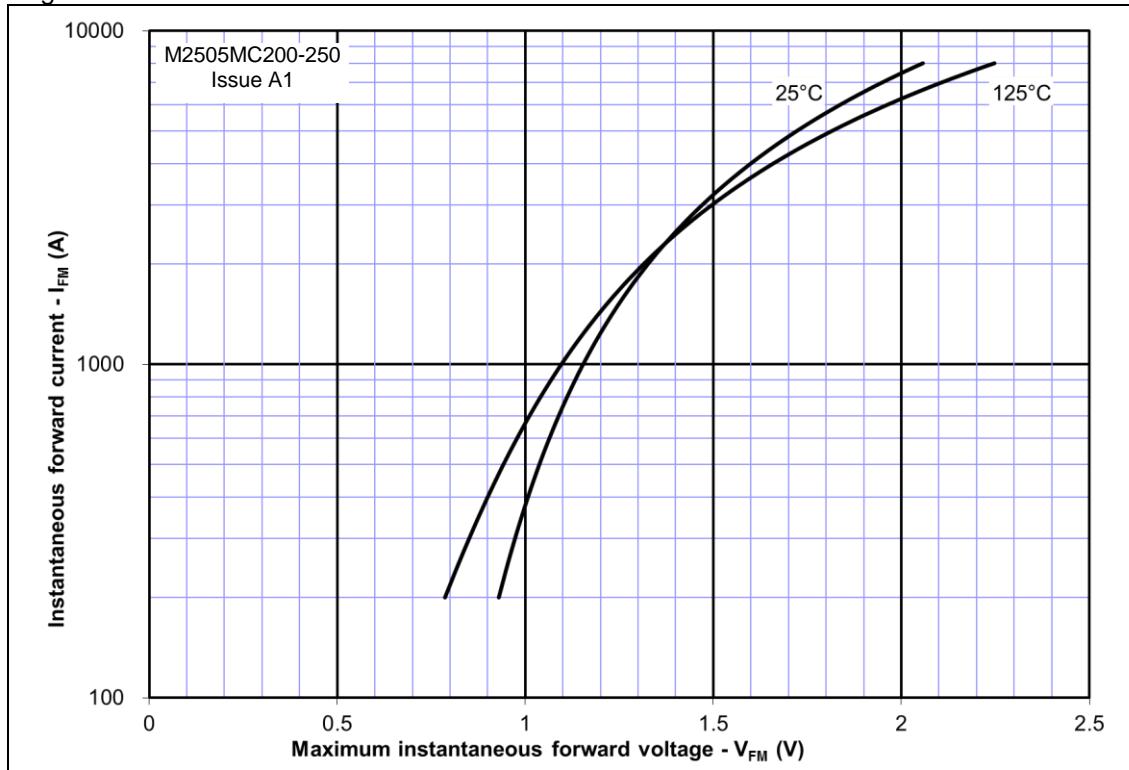


Figure 2 – Transient thermal impedance

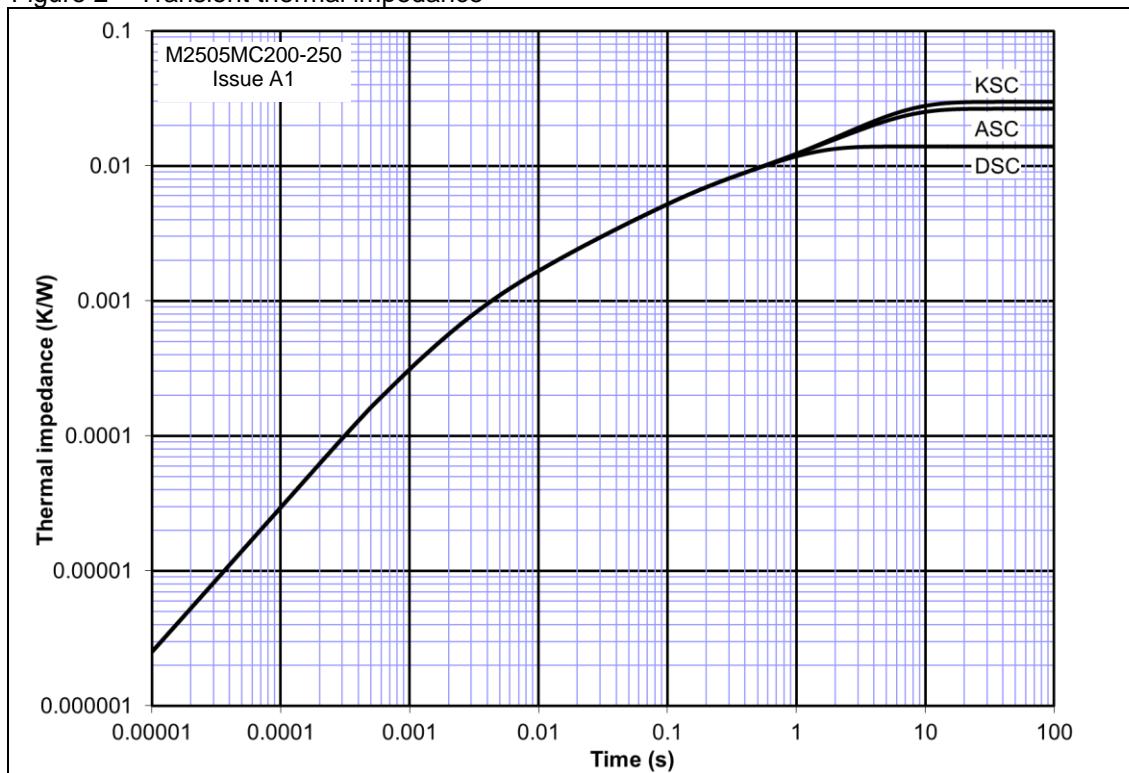
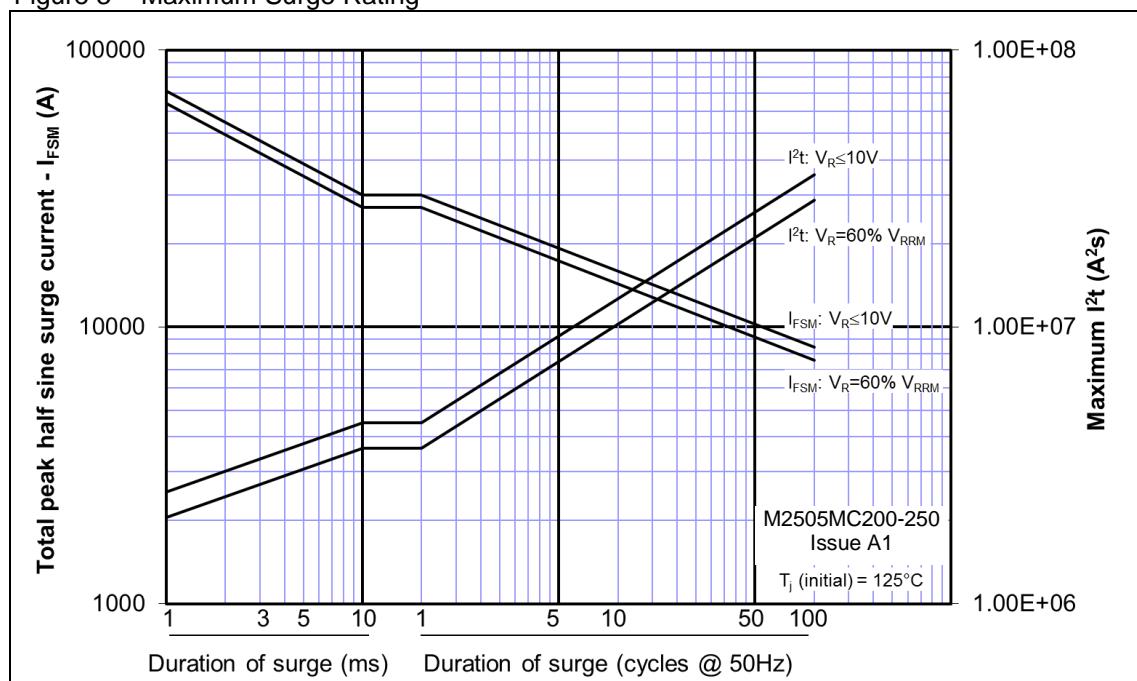
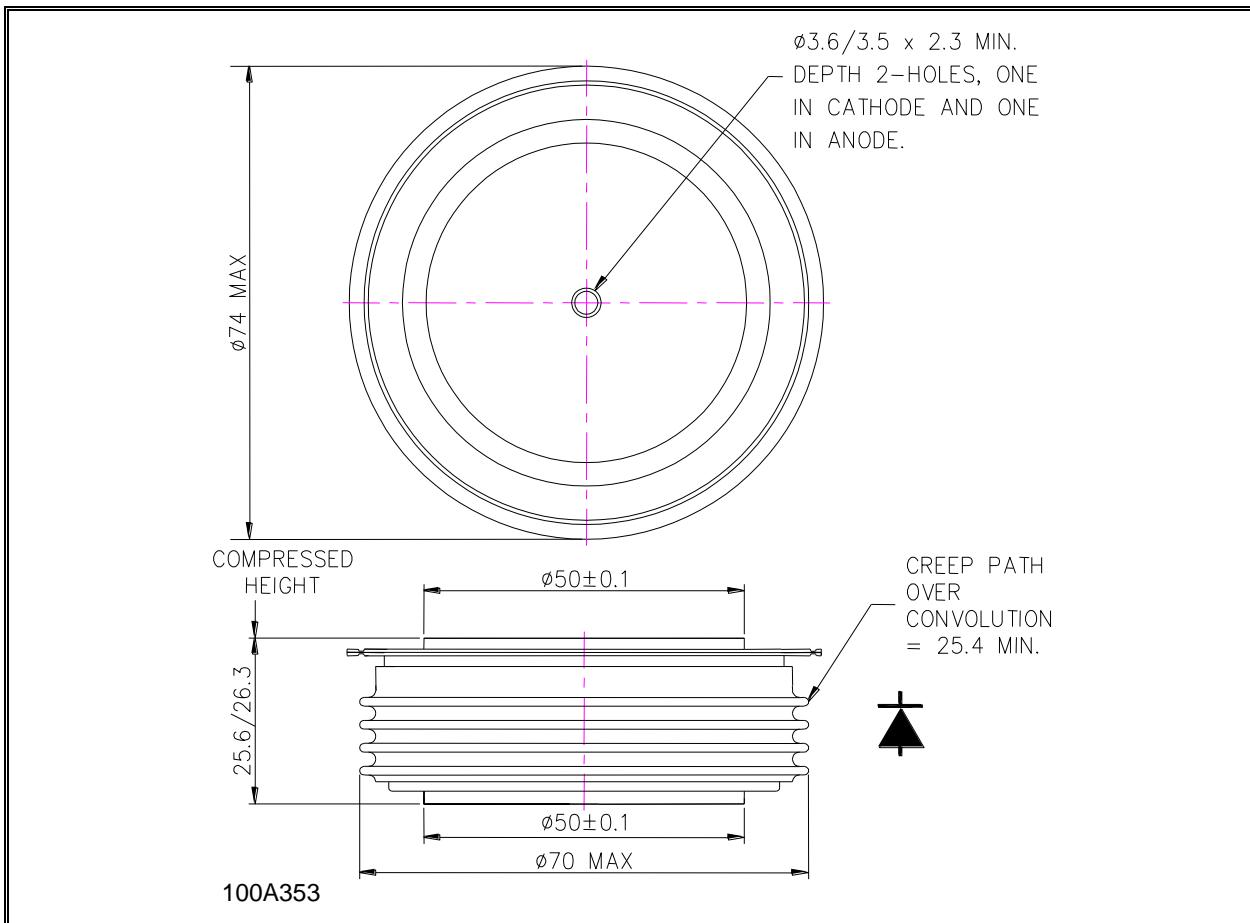


Figure 3 – Maximum Surge Rating



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

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