

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

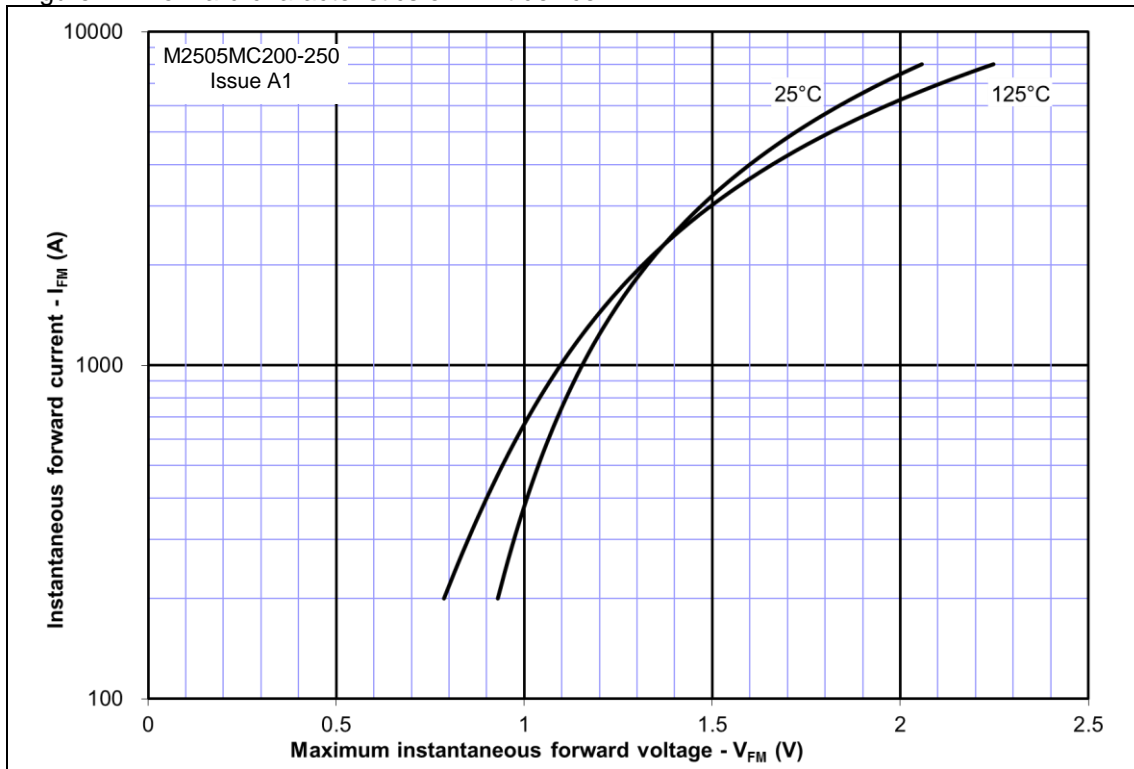


Figure 2 – Transient thermal impedance

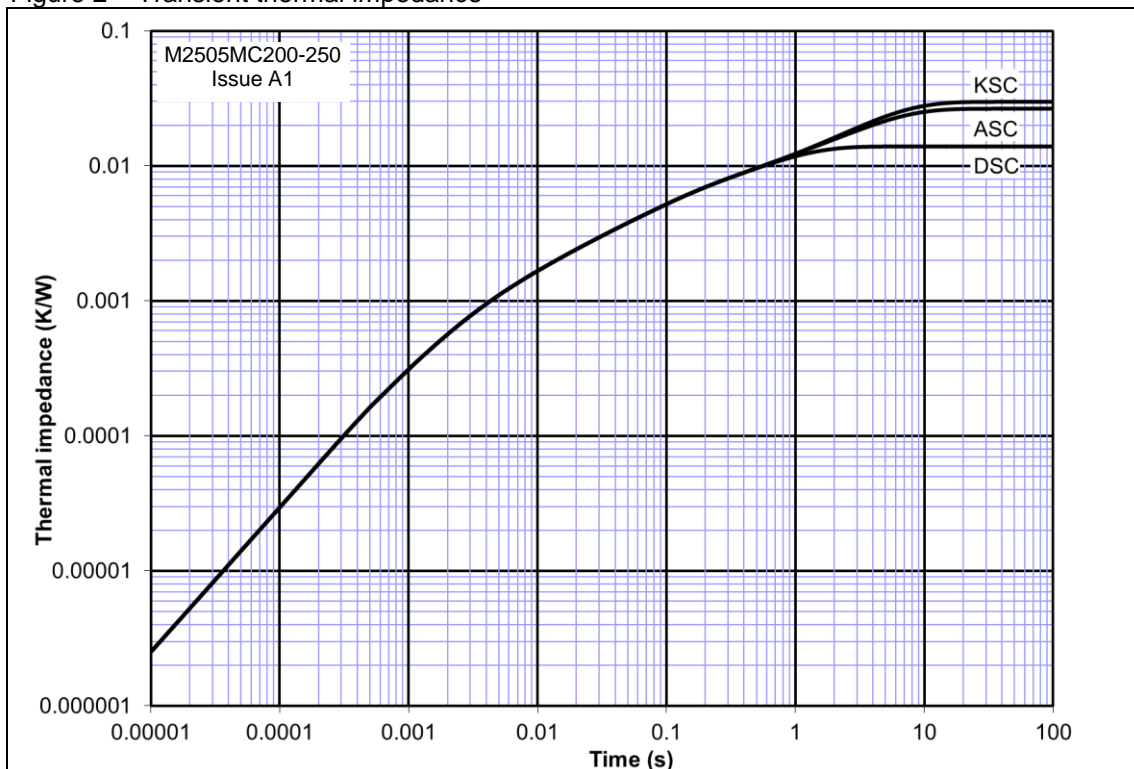
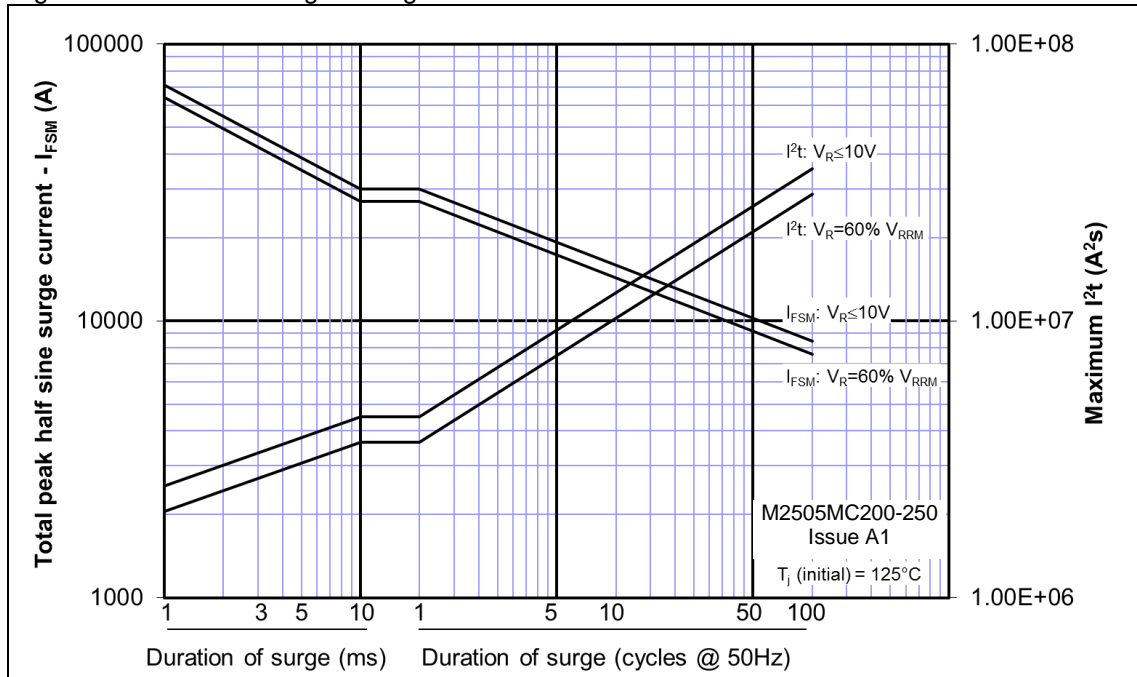
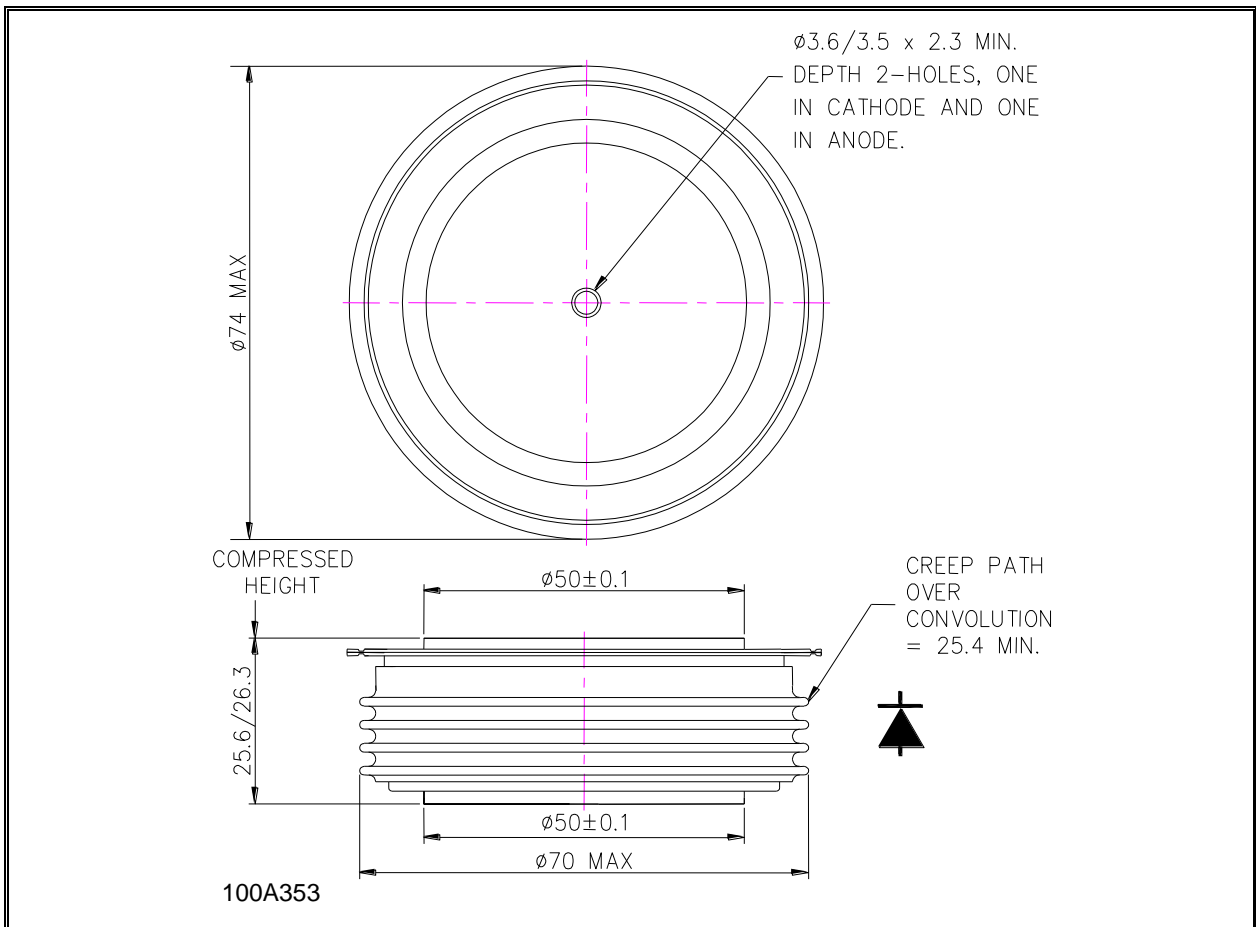


Figure 3 – Maximum Surge Rating



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.

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