MDQ Series

Single-Phase Rectifier Bridges

Picture is MDQ200A

- Ratings from 10A to 200A @ 12-1600 VAC
- 2500 Volts isolated mounting base
- Strengthened current design for reliable industrial operations
- CE approved, EMC compliant.
- International standard package
- High thermal conductivity package, electrically insulated case
- Standard size for easy connections to thyristor & IGBT Modules

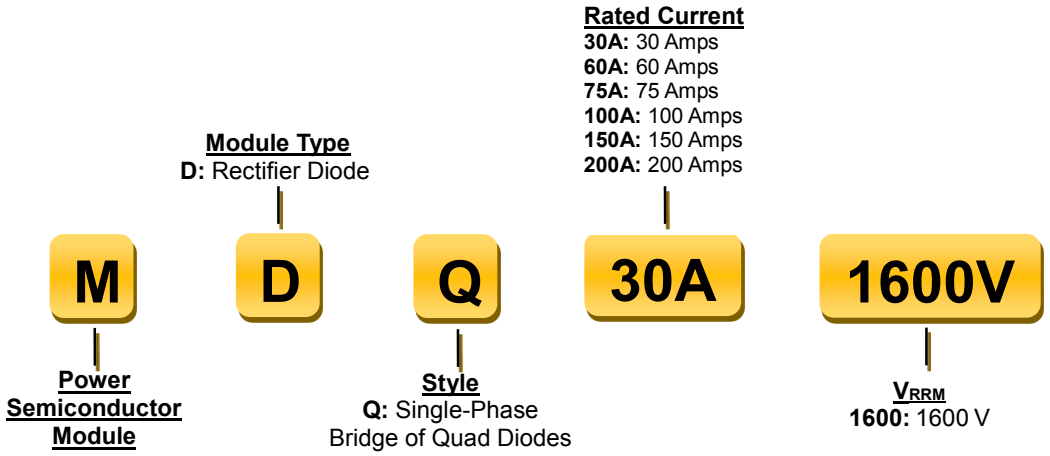
Typical Applications

- Supplies for DC power equipment
- DC supplies for PWM PWM inverter
- DC power supplies for battery
- Field Supplies for DC motors
- Soft start capacitor charging
- Electric drives and auxiliaries
- Inverter Welders
- Input Rectifiers for Switch mode power supply (SMPS)

PRODUCT SELECTION

Control Voltage	30A	60A	75A	100A	150A	200A
90-280 VAC	MDQ30A1600V	MDQ60A1600V	MDQ75A1600V	MDQ100A1600V	MDQ150A1600V	MDQ200A1600V

MODEL NAME DEFINITIONS



ELECTRICAL SPECIFICATIONS (1)

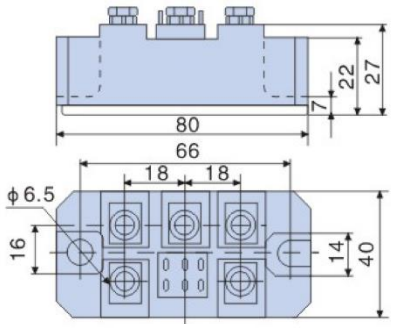
	Description	30A	60A	75A
I_O	DC Output Current @ T_j=150°C [Arms]	60	75	30
I_{RRM}	Max. Repetitive Peak Reverse Current [mArms]	10	10	10
I_{FSM}	Max. Peak, 1-Cycle Forward, Non-Repetitive Surge Current @ No Voltage Reapplied (10/8.3mSec) [Arms]	510/618	637/777	255/309
	Max. Peak, 1-Cycle Forward, Non-Repetitive Surge Current @ 100% VRRM Reapplied (10/8.3mSec) [Arms]	428/519	535/652	214/259
I^2t	Max. I^2t for Fusing @ No Voltage Reapplied (50/60Hz) [A² mSec]	1300/1584	2028/2505	325/396
	Max. I^2t for Fusing @ 100% V_{RRM} Reapplied (50/60Hz) [A² mSec]	915/1117	1431/1764	228/278
V_{FM}	Forward Voltage Drop @ I_{PK}=150 Arms [Vrms]	1.42	1.37	1.47
V_{TM}	Peak On-Stage Voltage [Vrms]	0.85	0.85	0.85
$R_{th(j-c)}$	Max. Thermal Resistance, Junction to Case [K/W]	0.76	0.6	1.4
$R_{th(c-h)}$	Max. Thermal Resistance, Case to Heatsink [K/W]	0.1	0.1	0.1
wt	Weight (Typical) [Gram]	175	190	185

	Description	100A	150A	200A
I_O	DC Output Current @ T_j=150°C [Arms]	100	150	200
I_{RRM}	Max. Repetitive Peak Reverse Current [mArms]	10	10	10
I_{FSM}	Max. Peak, 1-Cycle Forward, Non-Repetitive Surge Current @ No Voltage Reapplied (10/8.3mSec) [Arms]	850/1037	1270/1550	1700/2074
	Max. Peak, 1-Cycle Forward, Non-Repetitive Surge Current @ 100% VRRM Reapplied (10/8.3mSec) [Arms]	714/871	1066/1302	1428/1742
I^2t	Max. I^2t for Fusing @ No Voltage Reapplied (50/60Hz) [A² mSec]	3612/4462	8064/9970	14450/17851
	Max. I^2t for Fusing @ 100% V_{RRM} Reapplied (50/60Hz) [A² mSec]	2548/3148	5681/7035	10195/12593
V_{FM}	Forward Voltage Drop @ I_{PK}=150 Arms [Vrms]	1.35	1.32	1.3
V_{TM}	Peak On-Stage Voltage [Vrms]	0.80	0.75	0.85
$\theta_{(j-c)}$	Max. Thermal Resistance, Junction to Case [K/W]	0.45	0.30	0.25
$\theta_{(c-h)}$	Max. Thermal Resistance, Case to Heatsink [K/W]	0.05	0.05	0.05
wt	Weight (Typical) [Gram]	165	422	430

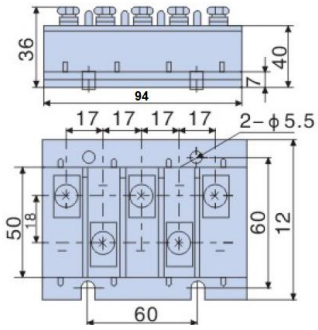
GENERAL SPECIFICATIONS(1)

	Description	Parameters
V_{RRM}	Max. Repetitive Peak Reverse Voltage [Vrms]	1600
V_{RSM}	Max. Repetitive Non-Peak Reverse Voltage [Vrms]	1760
V_{INS}	RMS Isolation Voltage to Case/Base	2500
$V_{F(TO)}$	Threshold Voltage @ 150°C [Vrms]	0.81-0.99
r_f	Forward Slope Resistance @ 150°C [mOhm]	4.37-6.8
T_J	Max. Junction Operating Temperature Range	-40 to 125 °C
Tstg	Max. Storage Temperature Range	-40 to 125 °C
cmatl	Case Material	UL 94 V-0
tmatl	Terminal Material	Nickelage

MECHANICAL SPECIFICATIONS



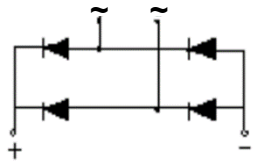
30A-100A



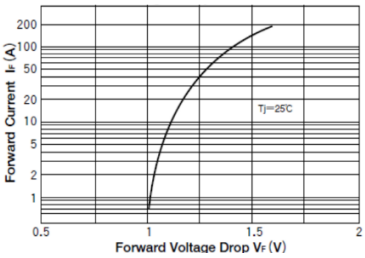
150A-200A

Unit of Length： Millimeters

EQUIVALENT CIRCUIT BLOCK DIAGRAM



Maximum Forward Characteristics



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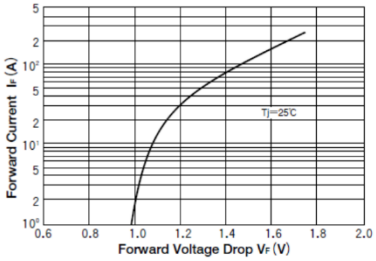

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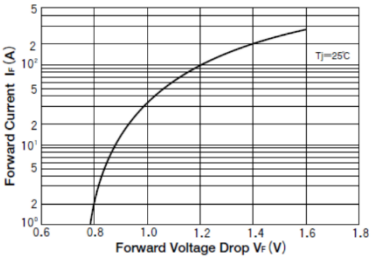

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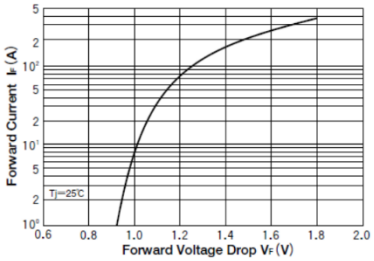

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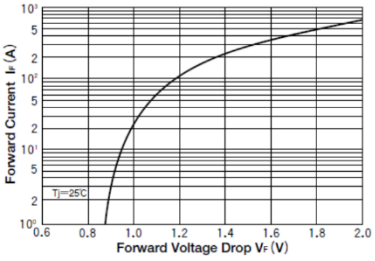
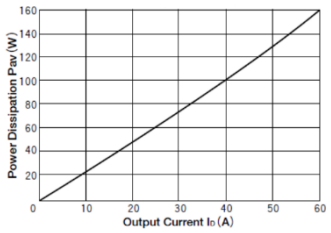


200A

Output Current vs. Power Dissipation



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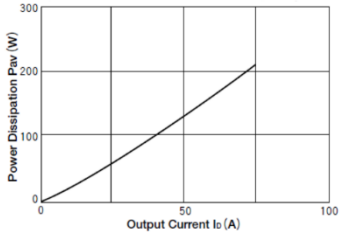

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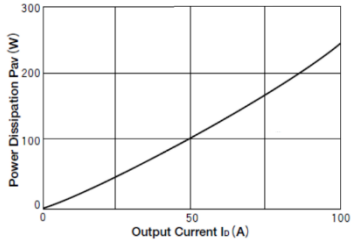

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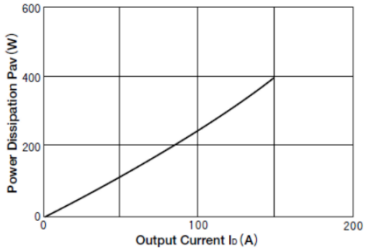

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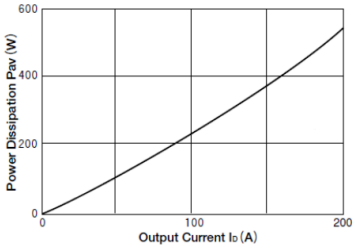
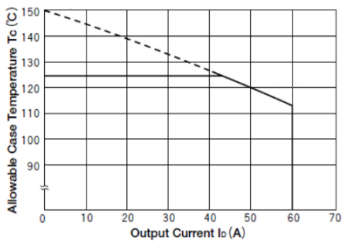


200A

Direct Current of Three Phases vs. Allowable Case Temperature



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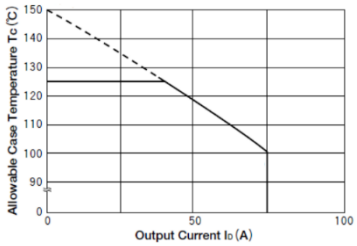

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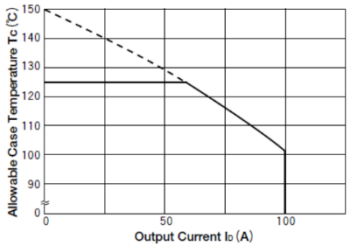

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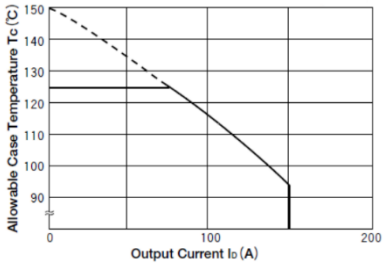

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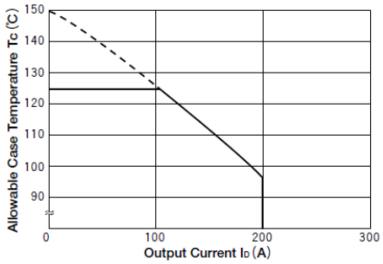
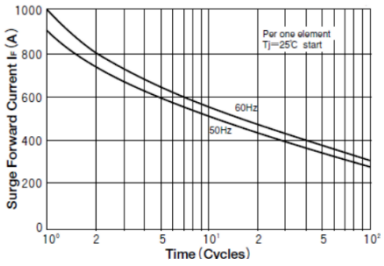


200A

Cycle Surge Forward Current vs. Time



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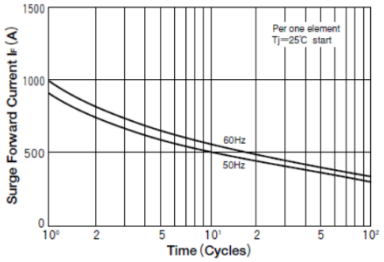

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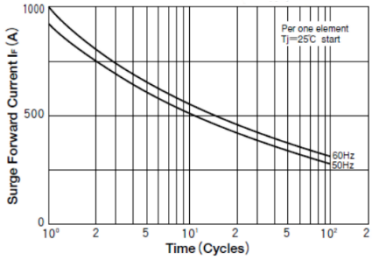

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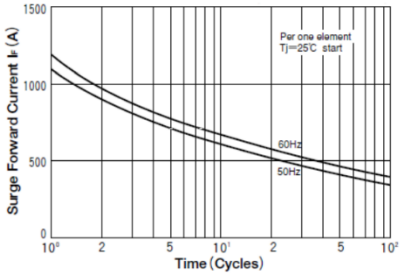

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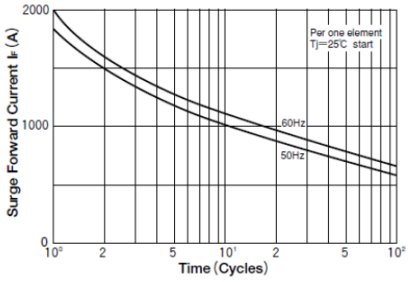
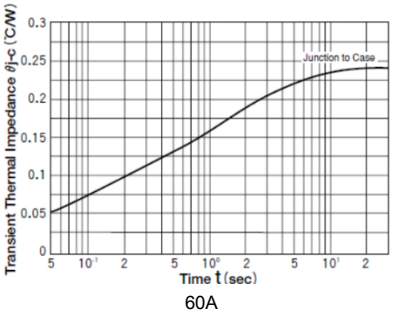


200A

Transient Thermal Impedance vs. Time



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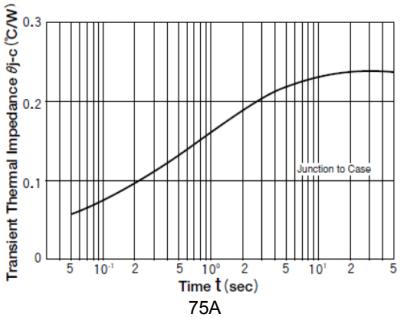

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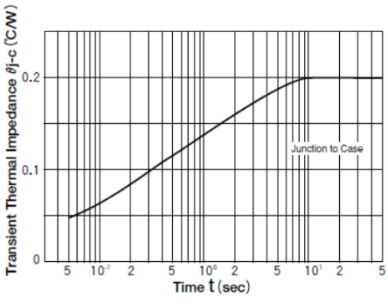

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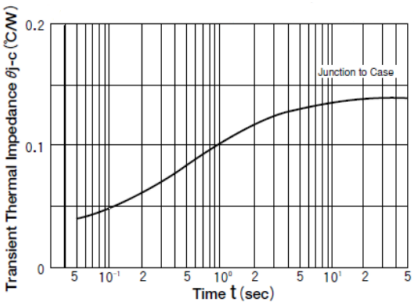

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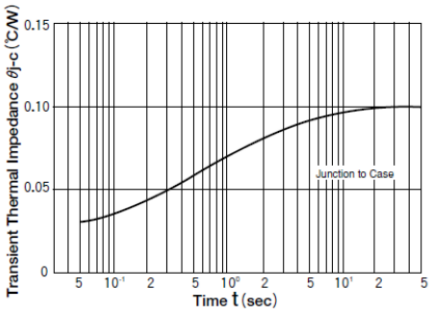

200A

GENERAL NOTES

(1) All parameters at 25°C and per section unless otherwise specified.
(2) Heat sinking required.

AGENCY APPROVALS

Designed in accordance with the requirements of IEC 62314