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AKTIENGESELLSCHAFT
MANNHEIM

Geschäftsbereich
Halbleiter und Stromrichter
Tel. (0 62 06) 503-1, Telex 04-65 727
Postfach 200, D-6840 Lampertheim

Brochure Order No.
D HS 60625/6 E



FMC

**Silicon
Controlled
Rectifiers**

Series 100 C
160 Amperes RMS
100 Amperes Average

Data and Diagrams are related to 60 cycles

Catalog* Number	Peak Voltage forward and reverse	
	Repetitive	Transient**
100C10B	100	200
100C20B	200	300
100C30B	300	400
100C40B	400	500
100C60B	600	720
100C80B	800	960
100C100B	1000	1200
100C120B	1200	1440
100C140B	1400	1600

*For insulated cathode lead add suffix "IL" to catalog number

**Maximum nonrepetitive

Electrical Characteristics

Forward Conducting

$I_{t\text{ avg}}$	Average forward current	100 A
V_{tm}	Maximum peak forward voltage drop at 25°C at 500 A peak, 180° conduction angle	2.0 V
I_h	Maximum holding current at 25°C	200 MA
$I_{t\text{ sm}}$	Maximum peak one cycle surge current	2000 A
I^2t	I^2t for fusing (for times ≥ 1.5 milliseconds)	16,000 A ² Sec.
I_{dm}	Maximum forward leakage current at 125°C and recurrent peak voltage	15 MA
t_{off}	Typical turn off time at 125°C (refer to Note 3)	40 μ Sec.
t_{on}	Typical turn on time at 25°C (refer to Note 4)	5.5 μ Sec.
t_r	Typical rise time	2.0 μ Sec.
t_d	Typical delay time	3.5 μ Sec.
$R_{\theta JC}$	Maximum thermal impedance, junction to case (DC)	0.2°C/W
T_j	Operating junction temperature	125°C
T_{stg}	Storage temperature	-40°C to 150°C

Blocking

I_{rm}	Maximum reverse leakage current at 125°C and recurrent peak voltage	20 MA
dv/dt	Minimum critical exponential rate of rise of forward blocking voltage at 125°C	200 V/ μ Sec.

Triggering

V_{gt}	Maximum gate voltage to trigger at 25°C	3.0 V
V_{gt}	Typical gate voltage to trigger at 25°C	2.0 V
V_{gd}	Maximum nontriggering gate voltage at 125°C	0.25 V
I_{gt}	Maximum gate current to trigger at 25°C	150 MA
I_{gt}	Typical gate current to trigger at 25°C	100 MA
P_{gm}	Maximum peak gate power	10 W
$P_{g\text{ avg}}$	Average gate power	2.0 W
I_{gm}	Maximum peak gate current	2.0 A
V_{gm}	Maximum peak gate voltage (forward)	10 V
V_{gm}	Maximum peak gate voltage (reverse)	5.0 V

Mechanical Characteristics

Base	High strength, nickel-plated copper with 3/4-16 UNF 2A thread for through mounting on a heat sink
Header	Nickel plating produces low contact resistance and prevents corrosion
Weight	Ceramic to metal construction, hermetically sealed to base
Mounting Torque	Approximately 7.44 ounces, 211.1 grams
	300 in. lbs. maximum

Note 3:

$I_F = 100\text{ A}$; $I_R = 20\text{ to }30\text{ A}$;
 $dv/dt = 20\text{ V}/\mu\text{ Sec.}$;
 $di/dt = 5\text{ A}/\mu\text{ Sec.}$;
 $V_{DRM} = \text{Rated}$

Note 4:

$I_F = 100\text{ A}$; $V_{gt} = 12\text{ V Open-Circuit}$;
20 Ohms - 0.1 μ Sec. Rise Time;
 $V_{DRM} = \text{Rated}$

Silicon Controlled Rectifiers

Series 100C

160 Amperes RMS / 100 Amperes Average

Figure 1
Maximum case temperature, sinusoidal half wave

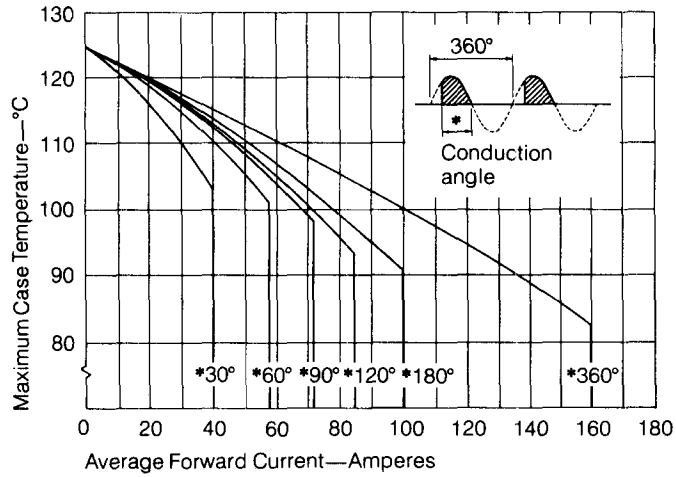


Figure 2
Maximum case temperature, rectangular wave

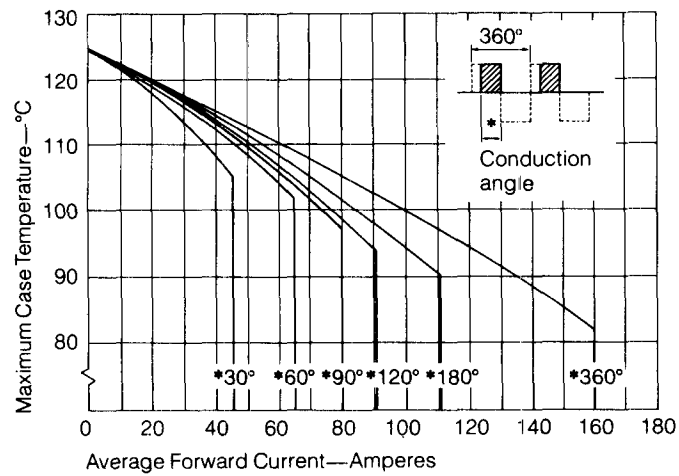


Figure 3
Maximum power dissipation, sinusoidal half wave

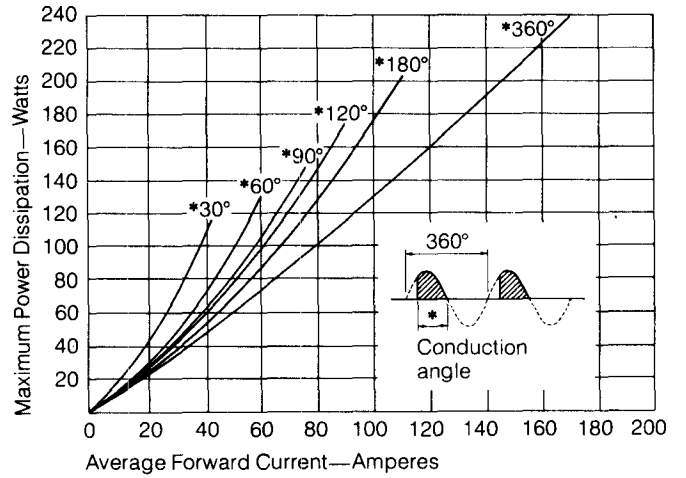


Figure 4
Maximum power dissipation, rectangular wave

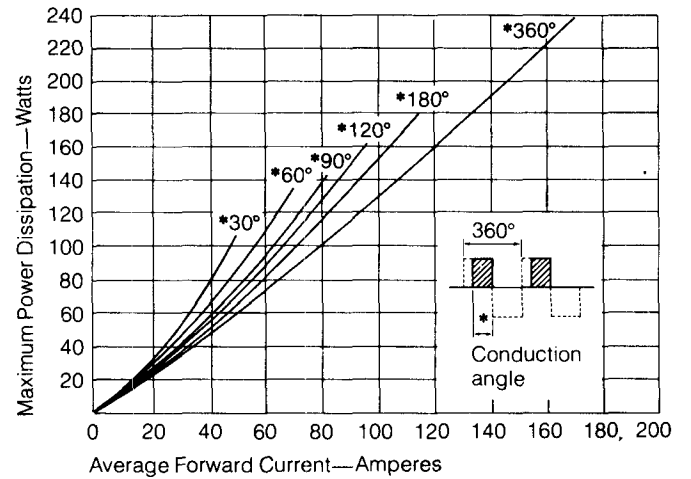


Figure 5
Maximum transient thermal impedance

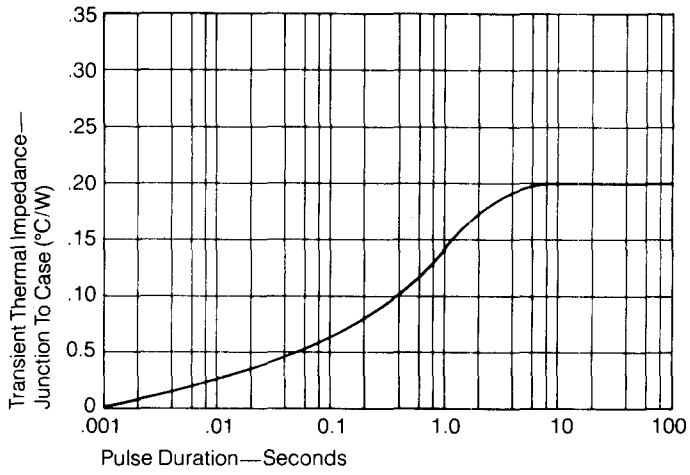


Figure 7
Maximum surge current (nonrepetitive) at rated load conditions

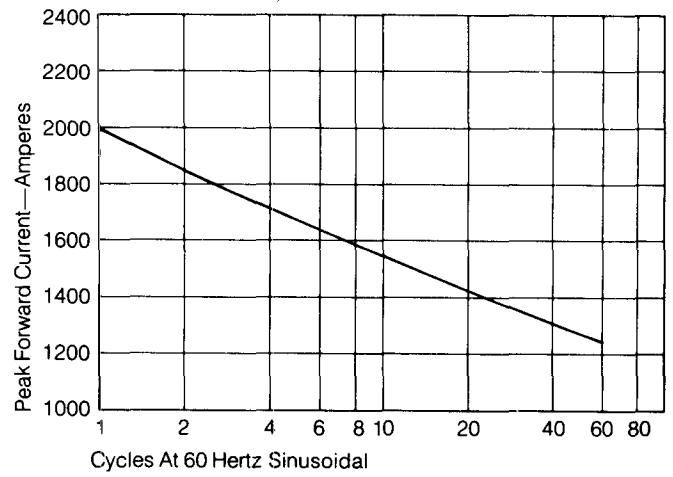
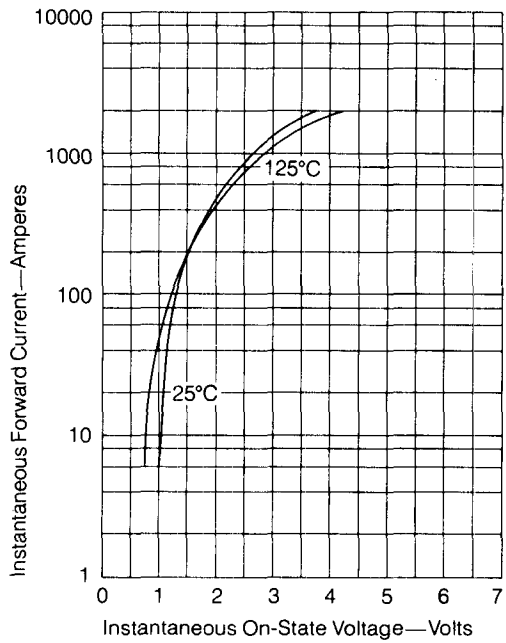
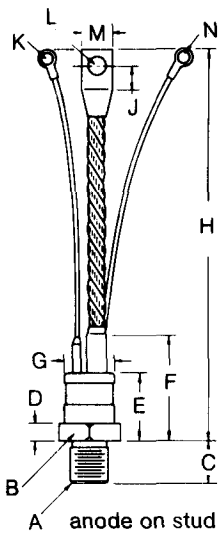


Figure 6
Maximum forward on-state characteristics





Dim.	Inches		Millimeters		Notes
	Minimum	Maximum	Minimum	Maximum	
A					1
B	1.22	1.26	30.94	31.75	2
C	1.03	1.06	26.21	26.98	
D	.38	.39	9.53	9.83	
E	1.36	1.38	34.62	34.92	
F	—	2.19	—	55.55	
G	—	1.01	—	25.65	Dia.
H	7.63	8.13	194.98	206.38	
J	.40	.44	10.08	11.10	
K	.14	.16	3.56	3.94	Dia.
L	.31	.34	7.89	8.71	Dia.
M	.53	.66	13.46	16.66	
N	.14	.16	3.56	3.94	Dia.

Dimensions in accordance with JEDEC outline TO-93

Note :
One nickel-plated hex nut and one internal tooth lockwasher are furnished with each rectifier

Note 1: 3/4-16 UNF-2A
Note 2: Across flats