GD400N/R-xx...SERIES

STUD TYPE DIODE

Features

- Hermetic metal to glass case insulation
- High surge current capabilities
- Stud cathode and stud anode version

400A

GD400N-xx Anode stud Red sleeve

GD400R-xx Cathode stud Blue sleeve

Typical Applications

- Converters
- Power supplies
- Machine tool controls

Major Ratings and Characteristics

Parameters		GD400N/R-xx	Units
$I_{F(AV)}$		400	A
	@ Tcase	120	°C
$I_{F(RMS)}$		640	A
I_{FSM}	@ 50Hz	8250	A
	@ 60Hz	8640	A
I^2t	@ 50Hz	340	KA^2s
	@ 60Hz	311	KA^2s
V_{RRM} range		800-1600	V
T_J		- 40 to 180	°C

Case style DO 205-AB (DO-9)

GD Rectifiers Ltd. Bentley house, 2 William Way, Burgess Hill, West Sussex RH15 9AG.
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Voltage Ratings

	Voltage Code XX	V_{RRM}, maximum repetitive peak reverse voltage V	V_{RSM}, maximum non-repetitive peak rev. voltage V	I_{RRM} max. @ $T_J = T_J$ max. mA
GD400N/R	08	800	900	15
	12	1200	1300	
	14	1400	1500	
	16	1600	1700	

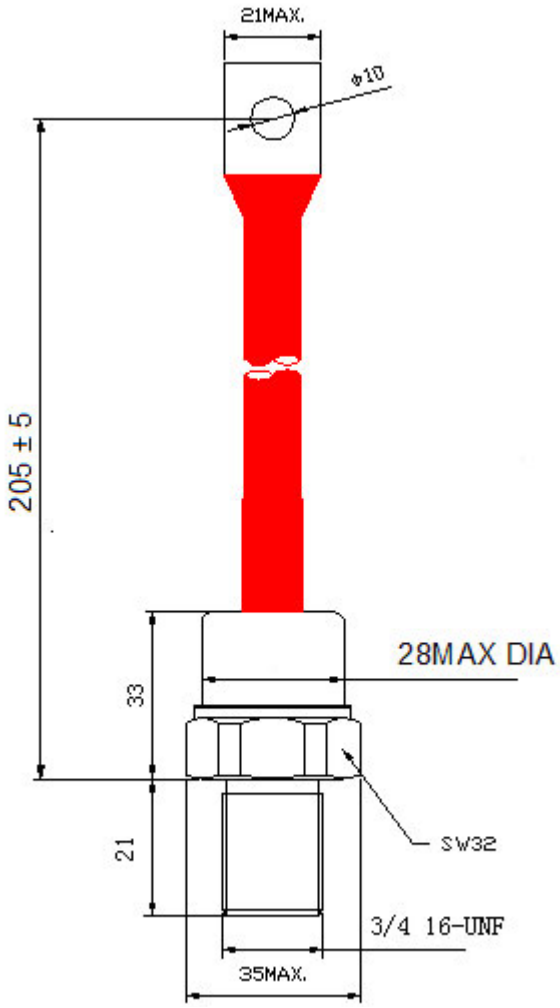
Forward Conduction

Parameter		GD 400	Units	Conditions		
$I_{F(AV)}$	Max. average forward current	400	A	180° conduction, half sine wave		
	@ Tcase	120	°C			
$I_{F(RMS)}$	Max.RMS forward current	640	A	DC@110°C case temperature		
I_{FSM},	Max. peak, one-cycle forward, non-repetitive surge current	8250	A	t = 10ms	No voltage reapplied	Sinusoidal half wave, Initial $T_J = T_J$ max.
		8640		t = 8.3ms		
		6940		t = 10ms	100% V_{RRM} reapplied	
		7270		t = 8.3ms		
I^2t	Maximum I^2t for fusing	340	KA^2s	t = 10ms	No voltage reapplied	
		311		t = 8.3ms		
		241		t = 10ms	100% V_{RRM} reapplied	
		220		t = 8.3ms		
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	3400	$KA^2\sqrt{s}$	t = 0.1 to 10ms, no voltage reapplied		
V_{FM}	Max. forward voltage drop	1.22	V	I_{pk} = 942A, $T_J = T_J$ max, t_p=10ms sinusoidal wave		
$V_{(TO)}$	Threshold voltage	0.77	V	Tj = Tj max		
r_T	Forward slope resistance	0.49	mΩ	Tj = Tj max		

Thermal and Mechanical Specification

	Parameter	GD400	Units	Conditions
T_J	Max.junction operating temperature range	-40 to 180	°C	
T_{stg}	Max. storage temperature range	-40 to 200		
RthJC	Max,thermal resistance,junction to case	0.14	K/W	DC operation
R_{thCS}	Max. thermal resistance,Case to heatsink	0.08		DC operation
T	Max.allowed Mounting torque, ± 10%	37	Nm	
wt	Approximate weight	250/320	g	

Connection Tab M8 Clear



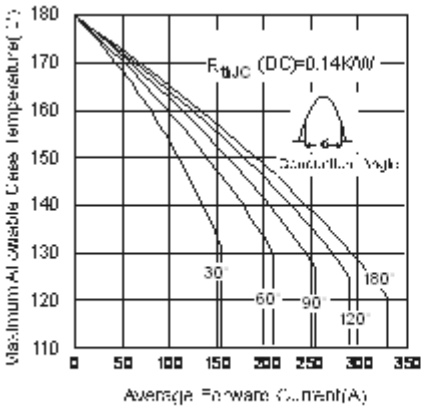


Fig.1-Current Ratings Characteristics

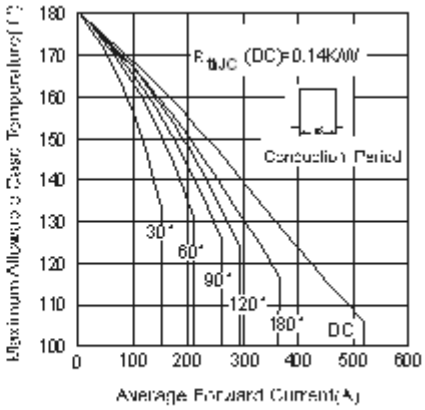


Fig.2-Current Ratings Characteristics

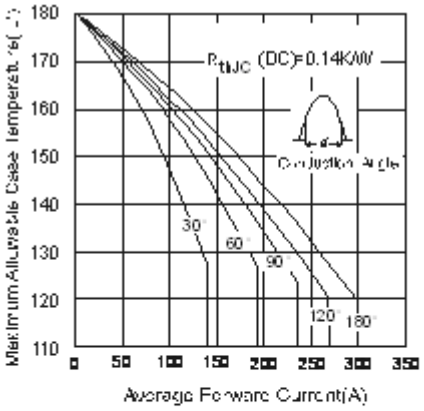


Fig.3-Current Ratings Characteristics

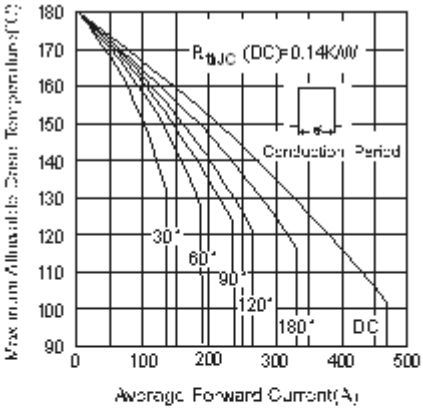


Fig.4-Current Ratings Characteristics

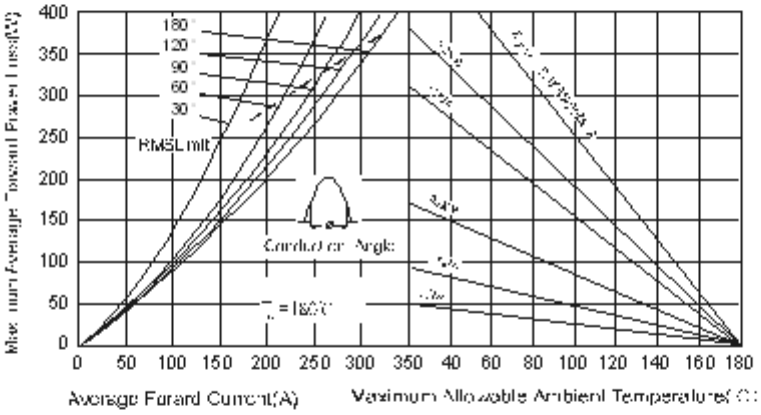


Fig.5-Forward Power Loss Characteristics

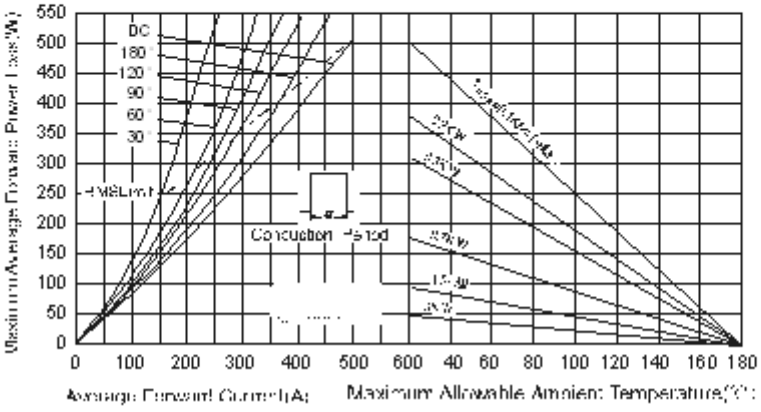


Fig.6-Forward Power Loss Characteristics

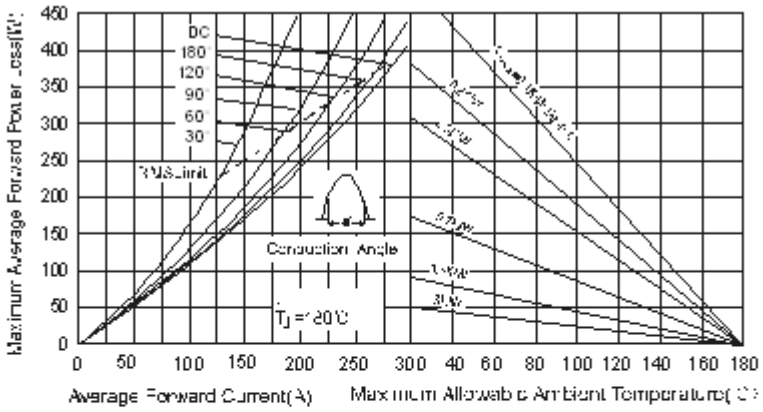


Fig.7-Forward Power Loss Characteristics

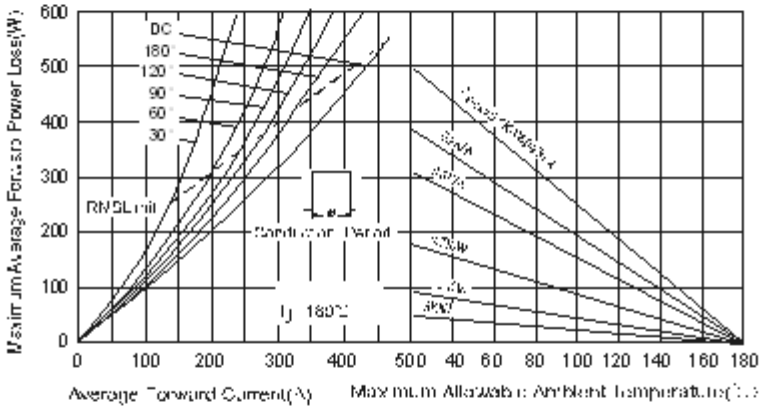


Fig.8-Forward Power Loss Characteristics

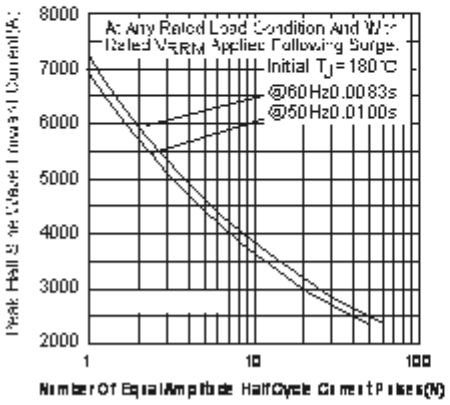


Fig.9-Maximum Non-Repetitive Surge Current

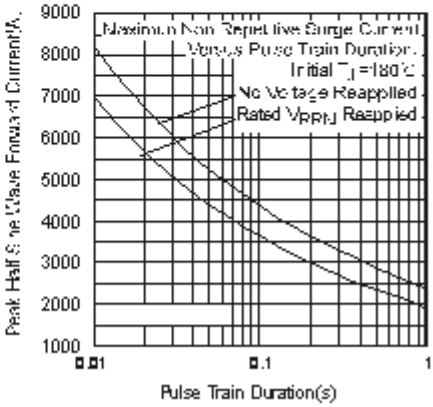


Fig.10-Maximum Non-Repetitive Surge Current

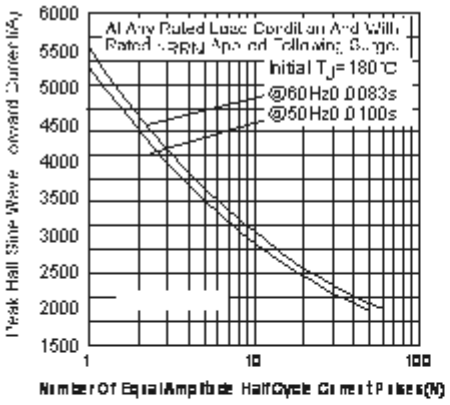


Fig.11-Maximum Non-Repetitive Surge Current

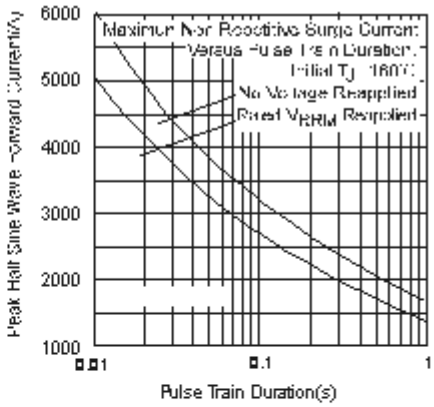


Fig.12-Maximum Non-Repetitive Surge Current

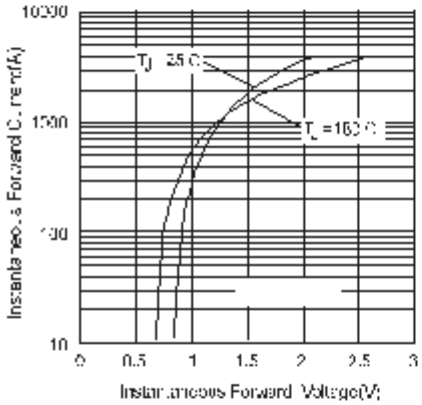


Fig.13-Forward Voltage Drop Characteristics

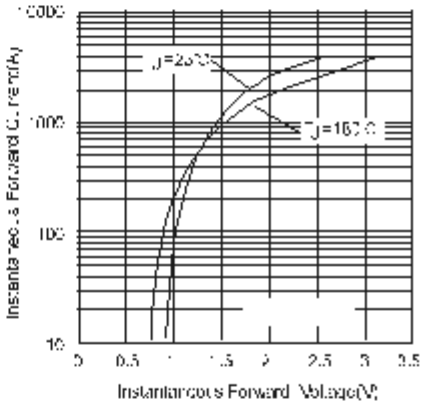


Fig.14-Forward Voltage Drop Characteristics

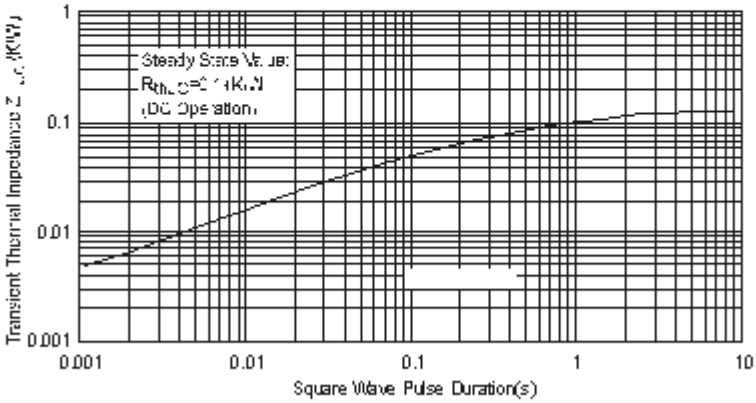


Fig.15-Thermal Impedance Z_{thJC} Characteristics