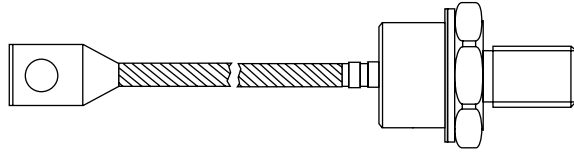


Standard Recovery Diodes (Stud Version), 300 A



DO-205AB (DO-9)

FEATURES

- Diffused glass passivated die
- Popular series for rough service
- Stud cathode and stud anode version
- High surge capability
- Very low V_F
- RoHS compliant
- Designed and qualified for industrial level


RoHS
COMPLIANT

PRODUCT SUMMARY

$I_{F(AV)}$	300 A
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TYPICAL APPLICATIONS

- Welders
- Power supplies
- Motor controls
- Battery charges
- General industrial current rectification

MAJOR RATINGS AND CHARACTERISTICS

PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		300	A
	T_C	120	°C
I_{FSM}	50 Hz	5700	A
	60 Hz	5900	
I^2t	50 Hz	160	kA ² s
	60 Hz	148	
V_{RRM}	Range	400/600	V
T_J		- 40 to 180	°C

ELECTRICAL SPECIFICATIONS
VOLTAGE RATINGS

TYPE NUMBER	VOLTAGE CODE	V_{RRM} , MAXIMUM REPETITIVE PEAK REVERSE VOLTAGE V	V_{RSM} , MAXIMUM NON-REPETITIVE PEAK REVERSE VOLTAGE V	I_{RRM} MAXIMUM AT $T_J = 180\text{ °C}$ mA
300HF	40	400	500	10
	60	600	700	

FORWARD CONDUCTION					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum average forward current at case temperature	$I_{F(AV)}$	180° conduction, half sine wave		300	A
				120	°C
Maximum peak, one cycle forward, non-repetitive surge current	I_{FSM}	t = 10 ms	No voltage reappplied	5700	A
		t = 8.3 ms		5900	
		t = 10 ms	100 % V_{RRM} reappplied	4800	
		t = 8.3 ms		5000	
Maximum I^2t for fusing	I^2t	t = 10 ms	No voltage reappplied	160	kA ² s
		t = 8.3 ms		148	
		t = 10 ms	100 % V_{RRM} reappplied	115	
		t = 8.3 ms		105	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	t = 0.1 to 10 ms, no voltage reappplied		1600	kA ² √s
Maximum value of threshold voltage	$V_{F(TO)}$	$T_J = 180\text{ °C}$		0.70	V
Maximum value of forward slope resistance	r_{f1}			0.40	mΩ
Maximum forward voltage drop	V_{FM}	$I_{pk} = 942\text{ A}, T_J = 25\text{ °C}$		1.14	V

THERMAL AND MECHANICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum junction operating and storage temperature range	T_J, T_{Stg}			- 40 to 180	°C
Maximum thermal resistance, junction to case	R_{thJC}	DC operation		0.17	K/W
Maximum thermal resistance, case to heatsink	R_{thCS}	Mounting surface, smooth, flat and greased		0.08	
Maximum allowed mounting torque + 0 - 20 %		Not lubricated threads		37	N · m
		lubricated threads		28	
Approximate weight				250	g
Case style		See dimensions - link at the end of datasheet		DO-205AB (DO-9)	

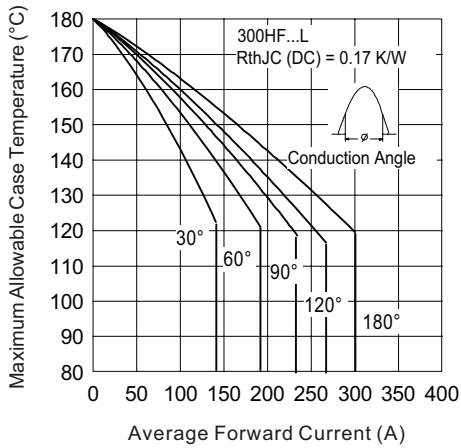


Fig. 1 - Current Ratings Characteristics

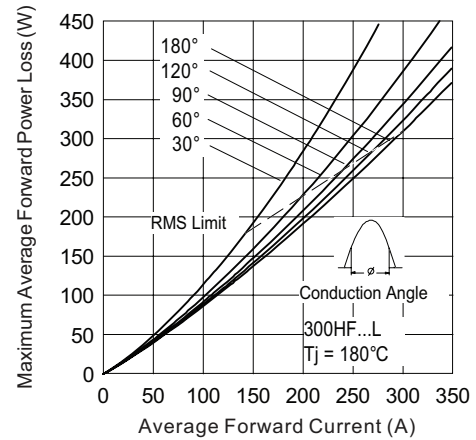


Fig. 4 - Forward Power Loss Characteristics

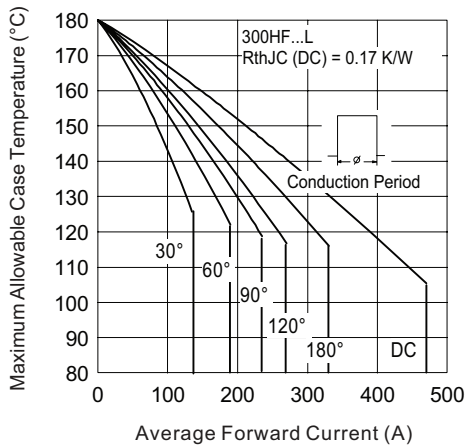


Fig. 2 - Current Ratings Characteristics

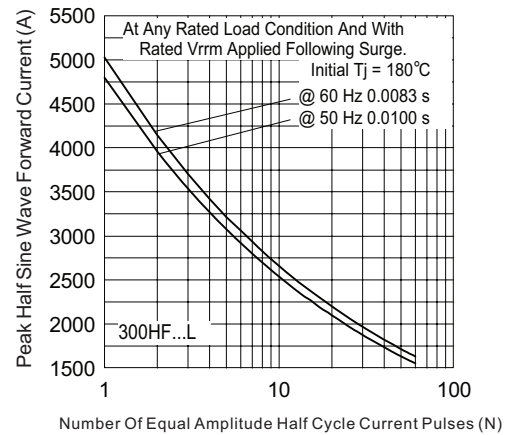


Fig. 5 - Maximum Non-Repetitive Surge Current

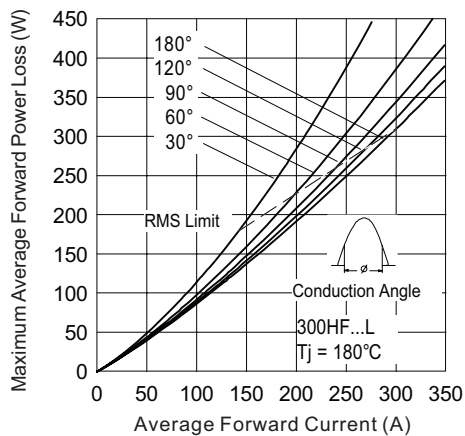


Fig. 3 - Forward Power Loss Characteristics

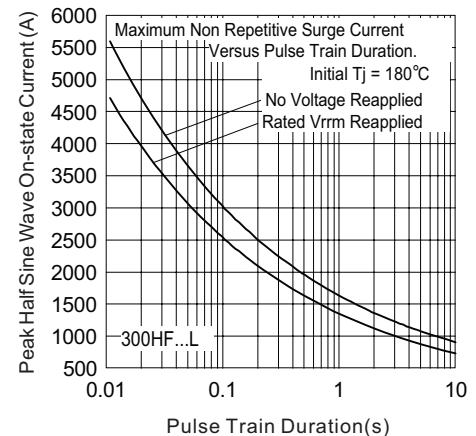


Fig. 6 - Maximum Non-Repetitive Surge Current

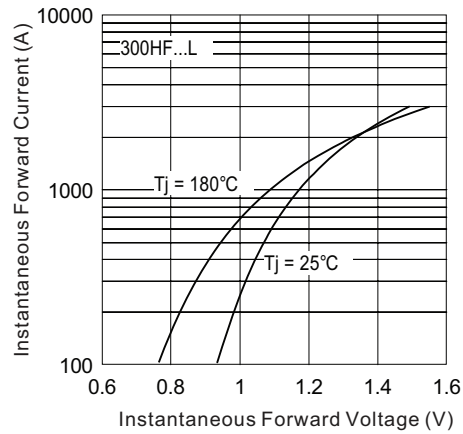


Fig. 7 - Forward Voltage Drop Characteristics

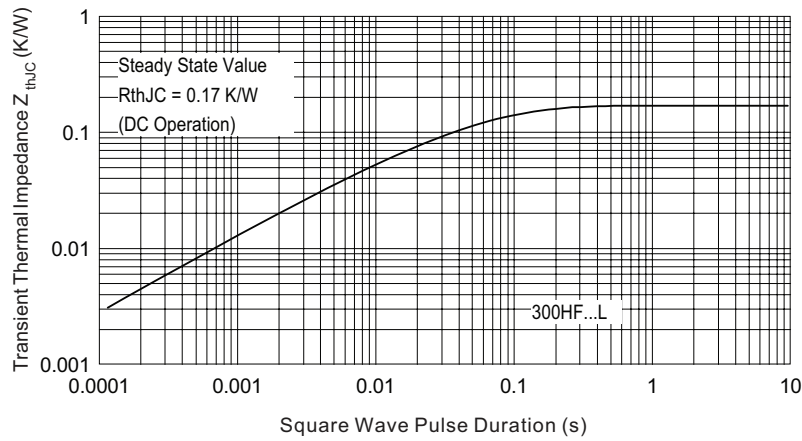
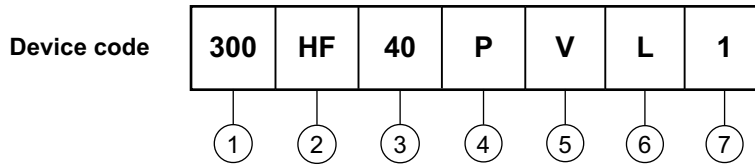


Fig. 8 - Thermal Impedance Z_{thJC} Characteristic



ORDERING INFORMATION TABLE



- 1** - Current rating (300 = 300 A)
- 2** - Diode diffused
- 3** - Voltage ratings

40 = 400 V
60 = 600 V
- 4** -
 - P = 3/4 UNF
 - M = Metric M16 x 1.5
- 5** - Glass-metal seal
- 6** - L = Low V_F
- 7** -
 - 1 = Lead 150 mm
 - 2 = Lead 200 mm

Note: For "M" type contact factory

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95341



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