



## A1A:450.XX

### VOLTAGE RATINGS

Part Number	$V_{RRM}, V_R$ (V) Max. rep. peak reverse voltage		$V_{RSM}, V_R$ (V) Max. non-rep. peak reverse voltage
	$T_J = 0$ to $200^\circ\text{C}$	$T_J = -40$ to $0^\circ\text{C}$	
	$T_J = 25$ to $200^\circ\text{C}$		
A1A:450.02	200	200	300
A1A:450.04	400	400	500
A1A:450.06	600	600	700
A1A:450.08	800	800	900

This datasheet applies to:

**Metric thread: A1A:450.XX,  
A1B:450.XX**

**Inch thread: A2A:450.XX,  
A2B:450.XX**

### MAXIMUM ALLOWABLE RATINGS

PARAMETER	VALUE	UNITS	NOTES
$T_J$ Junction Temperature	-40 to 200	$^\circ\text{C}$	-
$T_{stg}$ Storage Temperature	-40 to 200	$^\circ\text{C}$	-
$I_{F(AV)}$ Max. Av. current @ Max. $T_C$	450	A	180° half sine wave
	125	$^\circ\text{C}$	
$I_{F(RMS)}$ Nom. RMS current	940	A	-
$I_{FSM}$ Max. Peak non-rep. surge current	10900	A	50 Hz half cycle sine wave Initial $T_J = 200^\circ\text{C}$ , rated $V_{RRM}$ applied after surge.
	11450		60 Hz half cycle sine wave
	13000		50 Hz half cycle sine wave Initial $T_J = 200^\circ\text{C}$ , no voltage applied after surge.
	13600		60 Hz half cycle sine wave
$I^2t$ Max. $I^2t$ capability	546	$\text{kA}^2\text{s}$	$t = 10\text{ms}$ Initial $T_J = 200^\circ\text{C}$ , rated $V_{RRM}$ applied after surge.
	598		$t = 8.3\text{ms}$
	772		$t = 10\text{ms}$ Initial $T_J = 200^\circ\text{C}$ , no voltage applied after surge.
	845		$t = 8.3\text{ms}$
$I^2t^{1/2}$ Max. $I^2t^{1/2}$ capability	8450	$\text{kA}^2\text{s}^{1/2}$	Initial $T_J = 200^\circ\text{C}$ , no voltage applied after surge. for time $t_x = I^2t^{1/2} * t_x^{1/2}$ . ( $0.1 < t_x < 10\text{ms}$ ).
F Mounting Force	30(267)	N.m(Lbf.in)	-



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## CHARACTERISTICS

PARAMETER	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
V <sub>FM</sub> Peak forward voltage	---	---	1.31	V	Initial T <sub>J</sub> = 25°C, 50-60Hz half sine, I <sub>peak</sub> = 1414A.
V <sub>F(TO)1</sub> Low-level threshold	---	---	0.78	V	T <sub>J</sub> = 200°C
V <sub>F(TO)2</sub> High-level threshold	---	---	0.87		Av. power = V <sub>F(TO)</sub> * I <sub>F(AV)</sub> + r <sub>F</sub> * [I <sub>F(RMS)</sub> ] <sup>2</sup>
r <sub>F1</sub> Low-level resistance	---	---	0.35	m	Use low values for I <sub>FM</sub> < I <sub>F(AV)</sub>
r <sub>F2</sub> High-level resistance	---	---	0.31		
I <sub>RM</sub> Peak reverse current	---	---	40	mA	T <sub>J</sub> = 200°C. Max. rated V <sub>RRM</sub>
R <sub>thJC</sub> Thermal resistance, junction-to-case	---	---	0.11	°C/W	DC operation
	---	---	0.12	°C/W	180° sine wave
	---	---	0.13	°C/W	120° rectangular wave
R <sub>thCS</sub> Thermal resistance, case-to-sink	---	---	0.03	°C/W	Mtg. Surface smooth, flat and greased. Single side.
wt Weight	---	250(8.75)	---	g(oz.)	---
Case Style	DO-205AB(DO-9)				---

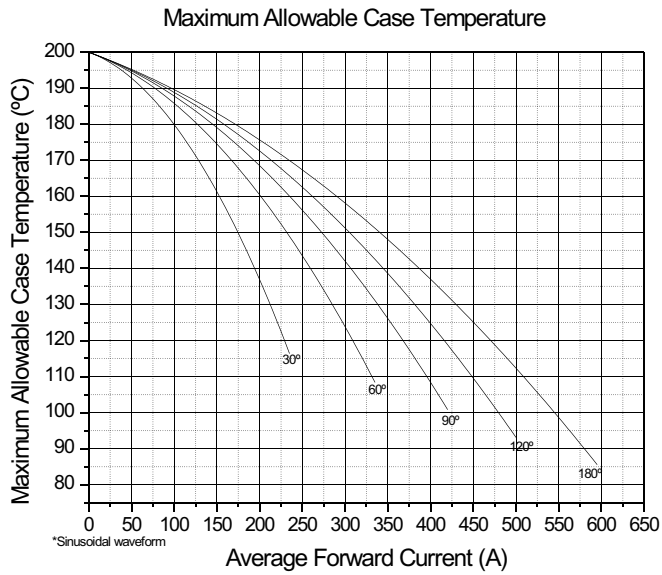


Fig. 1 - Current Ratings Characteristics

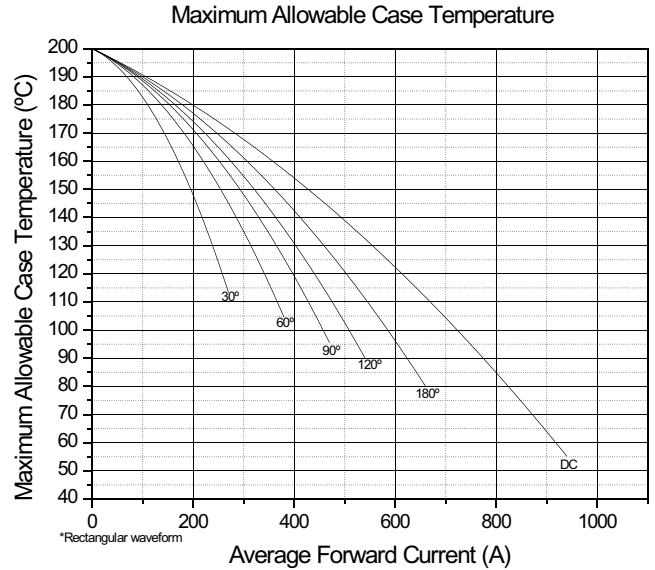


Fig. 2 - Current Ratings Characteristics



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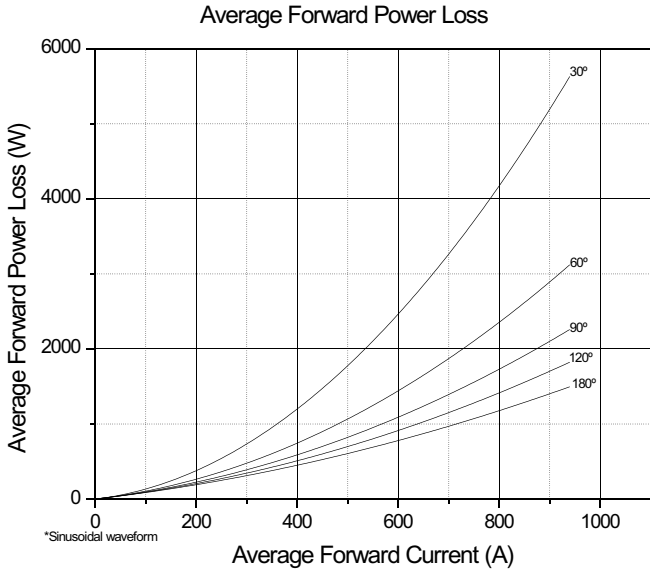


Fig. 3 - Forward Power Loss Characteristics

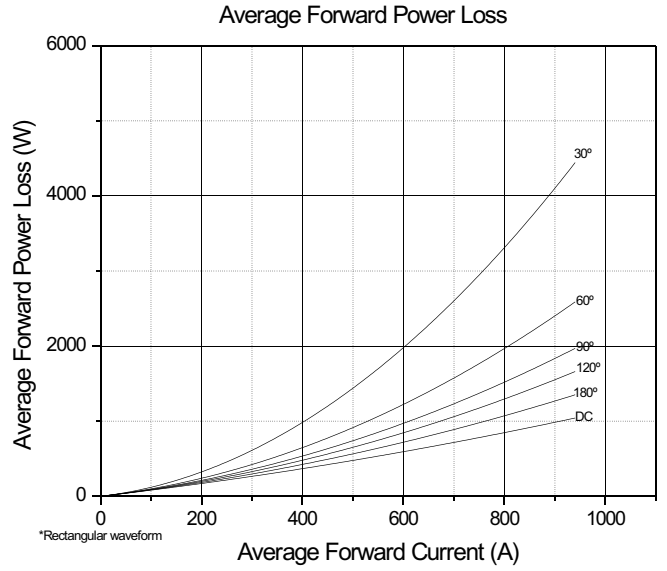


Fig. 4 - Forward Power Loss Characteristics

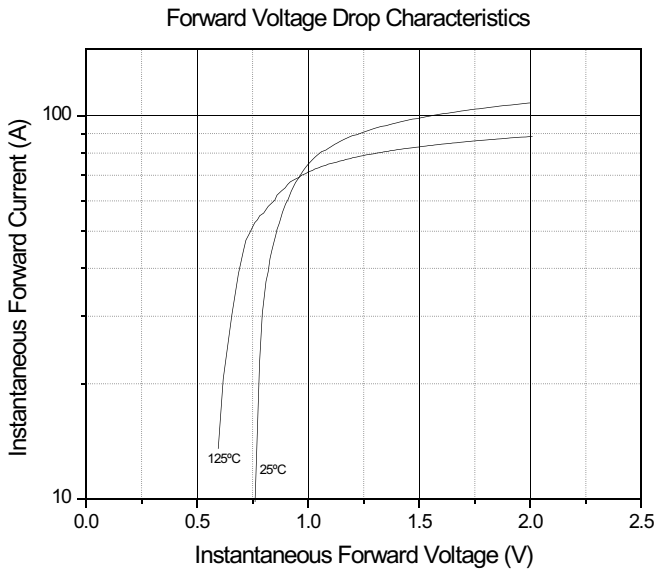


Fig. 5 - Forward Voltage Drop Characteristics

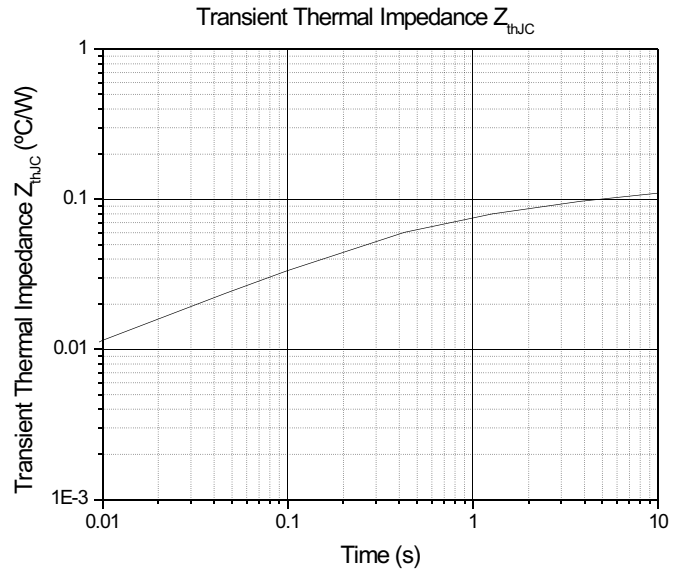


Fig. 6 - Transient Thermal Impedance Characteristics



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**DO-205AB (DO-9)**

