



# A1A:50.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 $180^\circ\text{C}$	$T_J = -40$ to $0^\circ\text{C}$	$T_J = 25$ to $180^\circ\text{C}$
	A1A:50.02	200	200
A1A:50.04	400	400	500
A1A:50.06	600	600	700
A1A:50.08	800	800	900
A1A:50.10	1000	1000	1100
A1A:50.12	1200	1200	1300
A1A:50.14	1400	1400	1500
A1A:50.16	1600	1600	1700

This datasheet applies to:

**Metric thread: A1A:50.XX,  
A1B:50.XX**

**Inch thread: A2A:50.XX,  
A2B:50.XX**

## MAXIMUM ALLOWABLE RATINGS

PARAMETER	VALUE	UNITS	NOTES
$T_J$ Junction Temperature	-40 to 180	$^\circ\text{C}$	-
$T_{stg}$ Storage Temperature	-40 to 180	$^\circ\text{C}$	-
$I_{F(AV)}$ Max. Av. current @ Max. $T_C$	50	A	180° half sine wave
	125	$^\circ\text{C}$	
$I_{F(RMS)}$ Nom. RMS current	95	A	-
$I_{FSM}$ Max. Peak non-rep. surge current	640	A	50 Hz half cycle sine wave Initial $T_J = 180^\circ\text{C}$ , rated $V_{RRM}$ applied after surge.
	697		60 Hz half cycle sine wave
	762		50 Hz half cycle sine wave Initial $T_J = 180^\circ\text{C}$ , no voltage applied after surge.
	830		60 Hz half cycle sine wave
$I^2t$ Max. $I^2t$ capability	1.87	$\text{kA}^2\text{s}$	$t = 10\text{ms}$ Initial $T_J = 180^\circ\text{C}$ , rated $V_{RRM}$ applied after surge.
	2.04		$t = 8.3\text{ms}$
	2.65		$t = 10\text{ms}$ Initial $T_J = 180^\circ\text{C}$ , no voltage applied after surge.
	2.89		$t = 8.3\text{ms}$
$I^2t^{1/2}$ Max. $I^2t^{1/2}$ capability	20	$\text{kA}^2\text{s}^{1/2}$	Initial $T_J = 180^\circ\text{C}$ , no voltage applied after surge. $I^2t$ for time $t_x = I^2t^{1/2} * t_x^{1/2}$ . (0.1 < $t_x$ < 10ms).
F Mounting Force	4(~30)	N.m(Lbf.in)	-



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## CHARACTERISTICS

PARAMETER	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
$V_{FM}$ Peak forward voltage	---	1.35	1.50	V	Initial $T_J = 25^\circ\text{C}$ , sinusoidal wave, $I_{peak} = 157\text{A}$ .
$V_{F(TO)1}$ Low-level threshold	---	---	0.88	V	$T_J = 180^\circ\text{C}$
$V_{F(TO)2}$ High-level threshold	---	---	1.02		Av. power = $V_{F(TO)} * I_{F(AV)} + r_F * [I_{F(RMS)}]^2$
$r_{F1}$ Low-level resistance	---	---	2.50	m	Use low values for $I_{FM} < I_{F(AV)}$
$r_{F2}$ High-level resistance	---	---	1.53		
$I_{RM}$ Peak reverse current	---	---	4.00	mA	$T_J = 180^\circ\text{C}$ . Max. Rated $V_{RRM}$
$R_{thJC}$ Thermal resistance, junction-to-case	---	---	0.85	$^\circ\text{C/W}$	DC operation
	---	---	1.00	$^\circ\text{C/W}$	180° sine wave
	---	---	1.20	$^\circ\text{C/W}$	120° rectangular wave
$R_{thCS}$ Thermal resistance, case-to-sink	---	---	0.20	$^\circ\text{C/W}$	Mtg. Surface smooth, flat and greased. Single side.
wt Weight	---	30(1.06)	---	g(oz.)	---
Case Style	DO-203AB (DO-5)			JEDEC	---

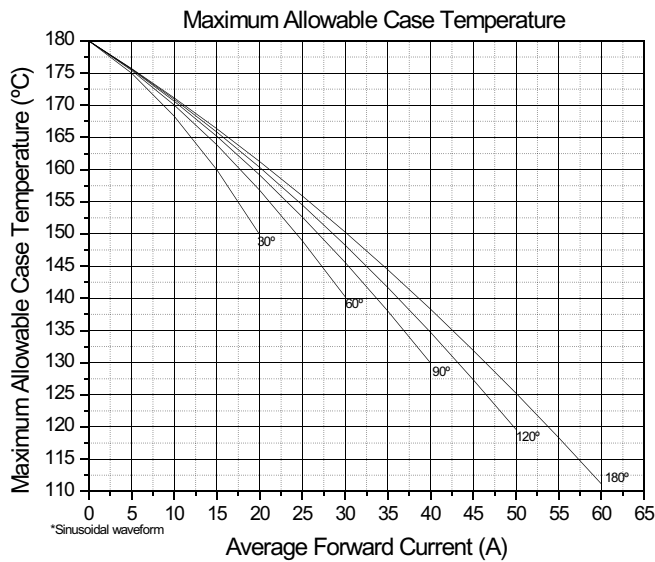


Fig. 1 - Current Ratings Characteristics

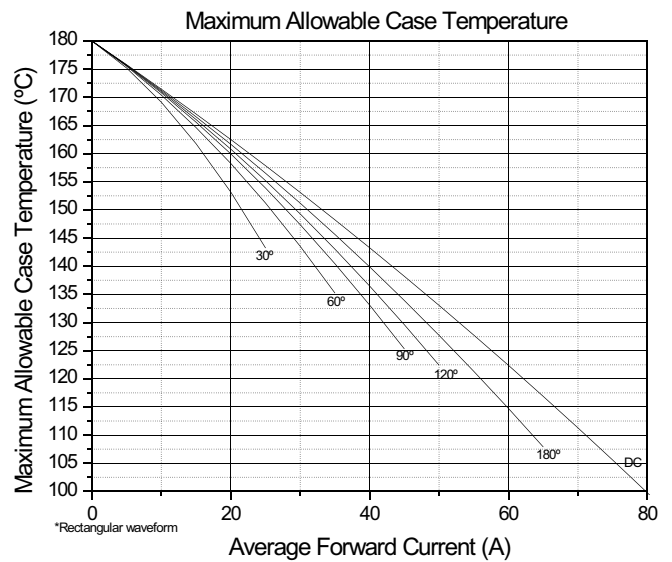


Fig. 2 - Current Ratings Characteristics



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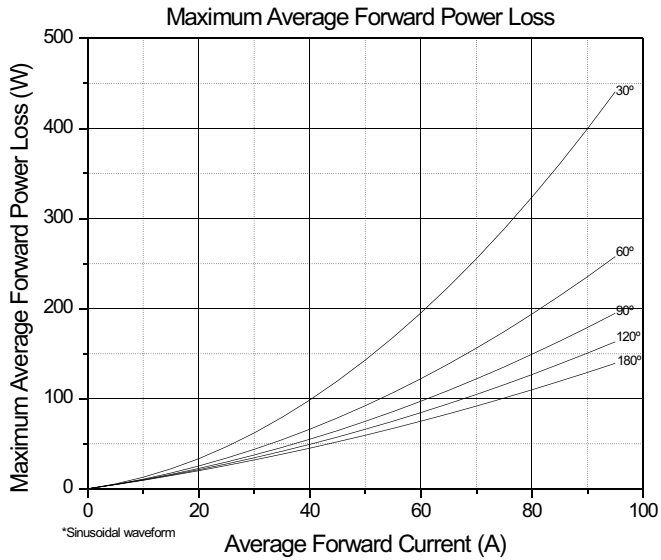


Fig. 3 - On-State Power Loss Characteristics

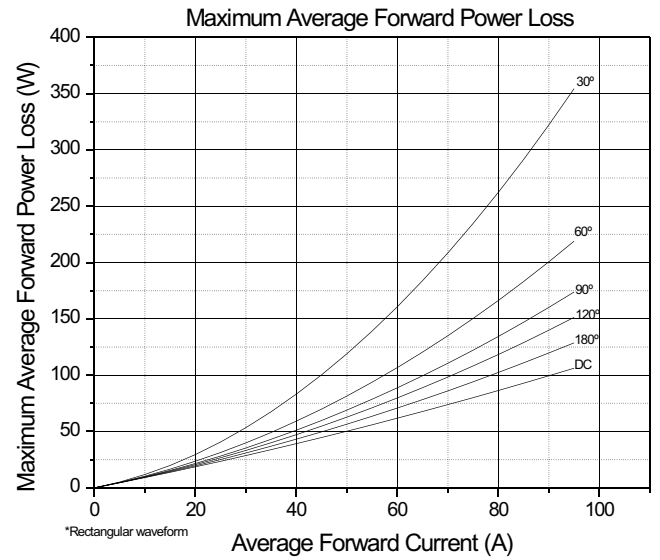


Fig. 4 - On-State Power Loss Characteristics

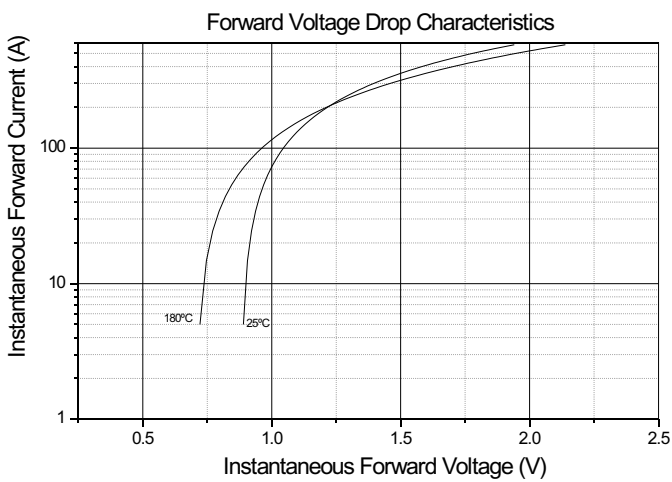


Fig. 5 - Forward Voltage Drop Characteristics

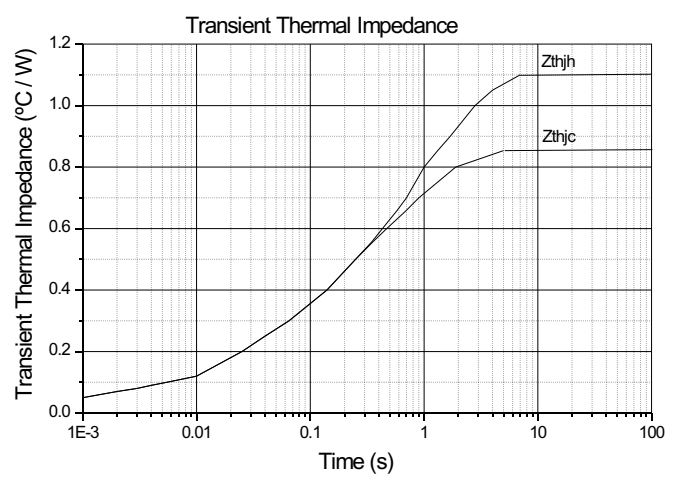


Fig. 6 - Transient Thermal Impedance

