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SEMICONDUTORES LTDA.

A5A:1300.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°C	T_J = -40 to 0°C	T_J = 25 to 180°C
A5A:1300.02	200	200	300
A5A:1300.04	400	400	500
A5A:1300.06	600	600	700
A5A:1300.08	800	800	900
A5A:1300.10	1000	1000	1100
A5A:1300.12	1200	1200	1300

MAXIMUM ALLOWABLE RATINGS

PARAMETER	VALUE	UNITS	NOTES
T_J Junction Temperature	-40 to 180	°C	-
T_{stg} Storage Temperature	-40 to 180	°C	-
$I_{F(AV)}$ Max. Av. current	1040	A	180° half sine wave
$I_{F(AV)}$ @ Max. T_C	125	°C	180° half sine wave
$I_{F(RMS)}$ Nom. RMS current	2030	A	-
I_{FSM} Max. Peak non-rep. surge current	13.6	kA	50 Hz half cycle sine wave; Initial T_J = 180° C, rated V_{RRM} applied after surge.
	14.2		60 Hz half cycle sine wave; Initial T_J = 180° C, rated V_{RRM} applied after surge.
	16.1		50 Hz half cycle sine wave; Initial T_J = 180° C, no voltage applied after surge.
	16.9		60 Hz half cycle sine wave; Initial T_J = 180° C, no voltage applied after surge.
I^2t Max. I^2t capability	960	kA^2s	t = 10ms; Initial T_J = 180° C, rated V_{RRM} applied after surge.
	1040		t = 8.3 ms; Initial T_J = 180° C, rated V_{RRM} applied after surge.
	1090		t = 10ms; Initial T_J = 180° C, no voltage applied after surge.
	1190		t = 8.3 ms; Initial T_J = 180° C, no voltage applied after surge.
$I^2t^{1/2}$ Max. $I^2t^{1/2}$ capability	13000	$kA^2s^{1/2}$	Initial T_J = 180° C, no voltage applied after surge. I^2t for time $t_x = I^2t^{1/2} * t_x^{1/2}$. (0.1 < tx < 10ms).
F Mounting Force	900	N.m	-

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CHARACTERISTICS

PARAMETER	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
V_{FM} Peak forward voltage	---	1.60	1.78	V	Initial T_J = 25°C, 50-60Hz half sine, I_{peak} = 3267A.
$V_{F(TO)1}$ Low-level threshold	---	---	0.803	V	T_J = 180°C
$V_{F(TO)2}$ High-level threshold	---	---	0.871		Av. power = $V_{F(TO)} * I_{F(AV)} + r_F * [I_{F(RMS)}]^2$
r_{F1} Low-level resistance	---	---	0.316	m	Use low values for $I_{FM} < I_{F(AV)}$
r_{F2} High-level resistance	---	---	0.279		
I_{RM} Peak reverse current	---	15	40	mA	TJ = 180°C. Max. rated V_{RRM}
R_{thJC} Thermal resistance, junction-to-case	---	---	0.038	°C/W	DC operation, double side
	---	---	0.045	°C/W	180° sine wave, double side
	---	---	0.046	°C/W	120° rectangular wave, duble side
R_{thCS} Thermal resistance, case-to-sink	---	---	0.020	°C/W	Mtg. Surface smooth, flat and greased. Single side. For double side, divide value by 2.
wt Weight	---	85(3.0)	---	g(oz.)	---
Case Style	TO-200AB				---

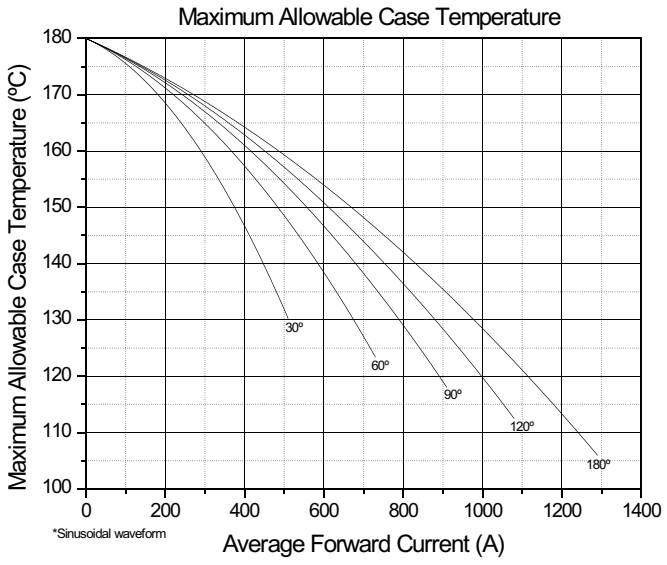

Fig. 1 - Current Ratings Characteristics

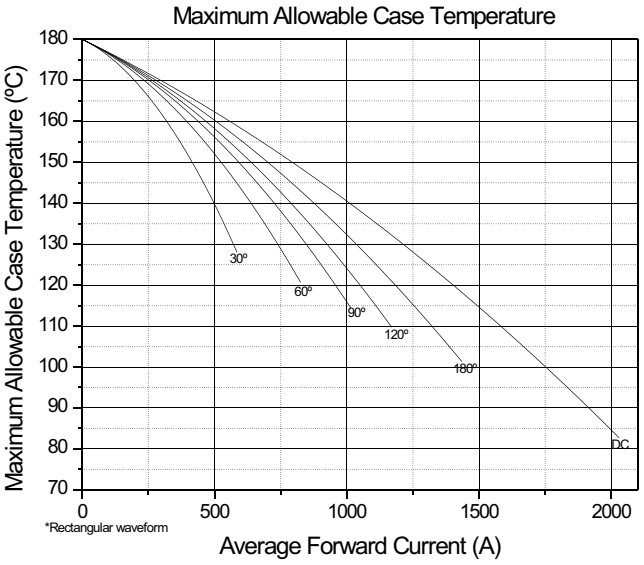

Fig. 2 - Current Ratings Characteristics

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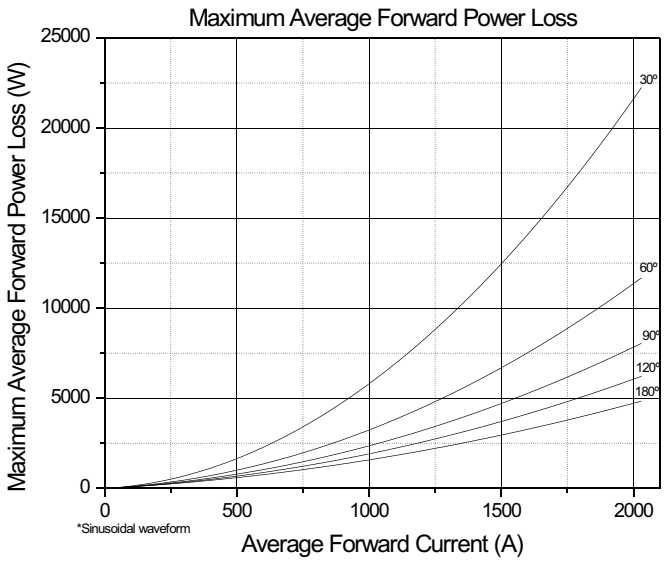

Fig. 3 - On-State Power Loss Characteristics

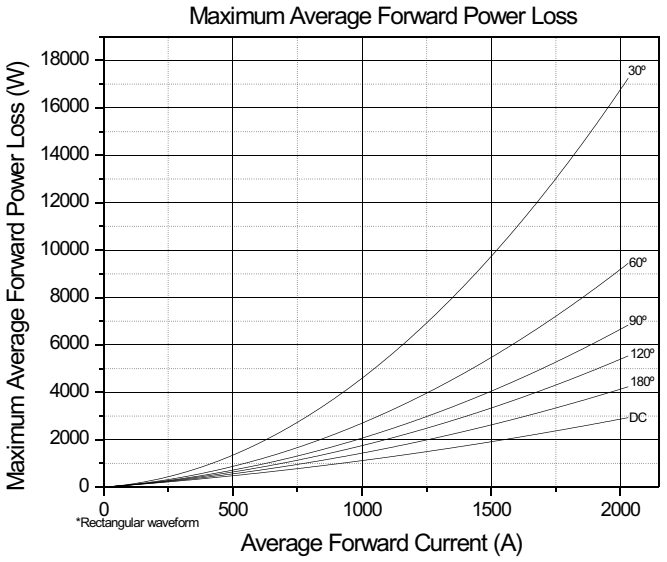

Fig. 4 - On-State Power Loss Characteristics

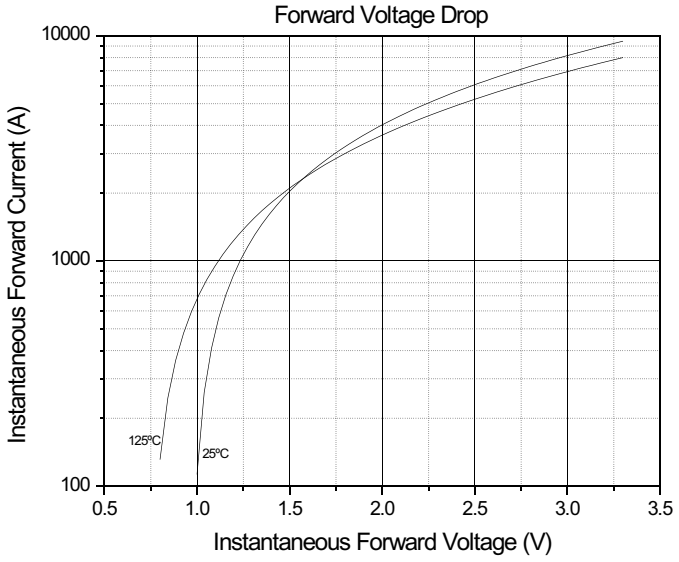

Fig. 5 - Forward Voltage Drop Characteristics

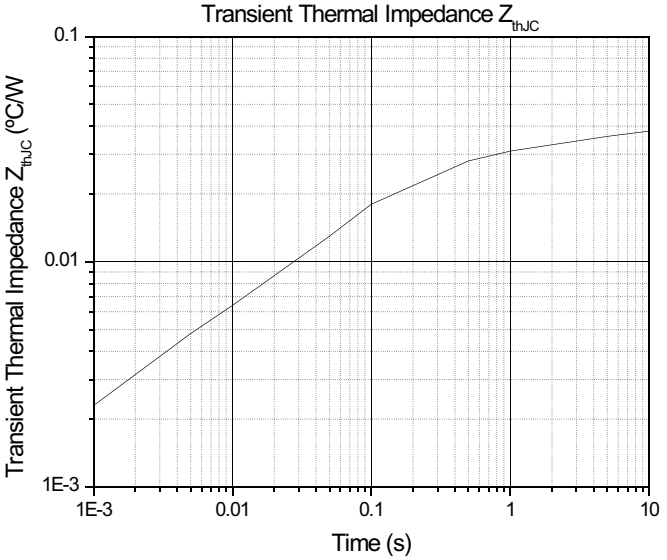

Fig. 6 - Transient Thermal Impedance Characteristics

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TO-200AB

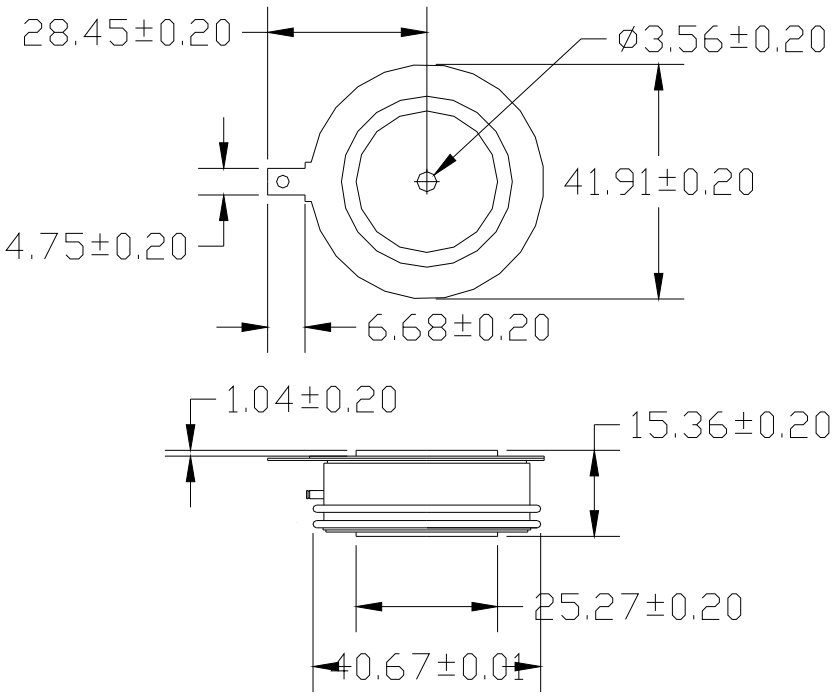

Fig. 7 - Outline Characteristics