



A1C:40S.XX.02

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 150°C	T _J = -40 to 0°C	T _J = 25 to 150°C
	A1C:40S.02.02	200	200
A1C:40S.04.02	400	400	500
A1C:40S.06.02	600	600	700
A1C:40S.08.02	800	800	900

This datasheet applies to:

**Metric thread: A1C:40S.XX.02,
A1D:40S.XX.02**

**Inch thread: A2C:40S.XX.02,
A2D:40S.XX.02**

MAXIMUM ALLOWABLE RATINGS

PARAMETER	VALUE	UNITS	NOTES
T _J Junction Temperature	-40 to 150	°C	-
T _{stg} Storage Temperature	-40 to 150	°C	-
I _{F(AV)} Max. Av. current @ Max. T _C	40	A	180° half sine wave
	100	°C	
I _{F(RMS)} Nom. RMS current	65	A	-
I _{FSM} Max. Peak non-rep. surge current	0.73	kA	50 Hz half cycle sine wave Initial T _J = 125°C, rated V _{RRM} applied after surge.
	0.8		60 Hz half cycle sine wave
	0.83		50 Hz half cycle sine wave Initial T _J = 125°C, no voltage applied after surge.
	0.91		60 Hz half cycle sine wave
I ² t Max. I ² t capability	2.78	kA ² s	t = 10ms Initial T _J = 125°C, rated V _{RRM} applied after surge.
	3.03		t = 8.3 ms
	3.17		t = 10ms Initial T _J = 125°C, no voltage applied after surge.
	3.45		t = 8.3 ms
I ² t ^{1/2} Max. I ² t ^{1/2} capability	37.9	A ² s ^{1/2}	Initial T _J = 125°C, no voltage applied after surge. for time t _x = I ² t ^{1/2} * t _x ^{1/2} . (0.1 < t _x < 10ms).
I _{RRM} Maximum peak reverse current at rated V _{RRM}	0.2	mA	T _J = 25°C
I _{RM} Peak reverse recovery current	10	A	
I _{FM} Peak forward current	1	A	
di/dt Max. Non-repetitive rate-of-rise current	25	A/μs	T _J = 25°C, V _D = V _{DRM} , I _{FM} = 1A.
F Mounting Force	4	N.m	-



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CHARACTERISTICS

PARAMETER	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
V _{FM} peak on-state voltage	---	---	1.6	V	Initial T _J = 25°C, 50-60Hz half sine, I _{peak} = 126A.
V _{F(TO)} Threshold voltage	---	---	1.2	V	T _J = 150°C
r _F Slope resistance	---	---	2.4	mΩ	
t _{rr} Maximum reverse recovery time	---	---	200	ns	T _J = 25°C, I _F = 1A to V _R = 30V, -di _F /dt = 25A/μs
	---	---	400		T _J = 25°C, -di _F /dt = 25A/μs, I _{FM} = π x rated I _{F(AV.)} .
R _{thJC} Thermal resistance, junction-to-case	---	---	0.85	°C/W	DC operation
R _{thCS} Thermal resistance, case-to-sink	---	---	0.2	°C/W	Mtg. Surface smooth, flat and greased. Single side cooled.
wt Weight	---	30(1.06)	---	g(oz.)	---
Case Style	---	DO-203AB (DO-5)	JEDEC		---

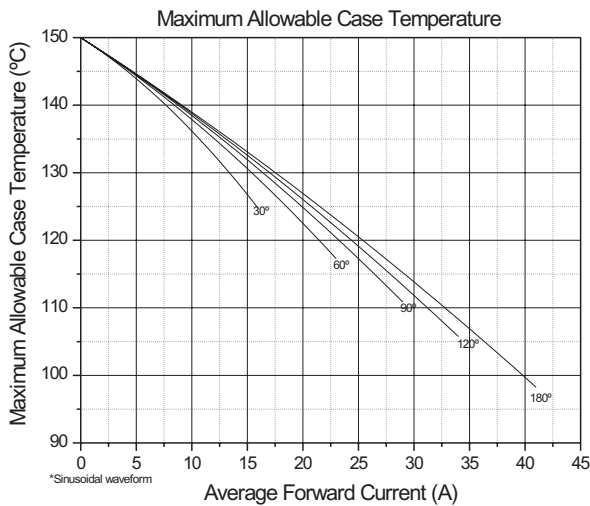


Fig. 1 - Current Ratings Characteristics

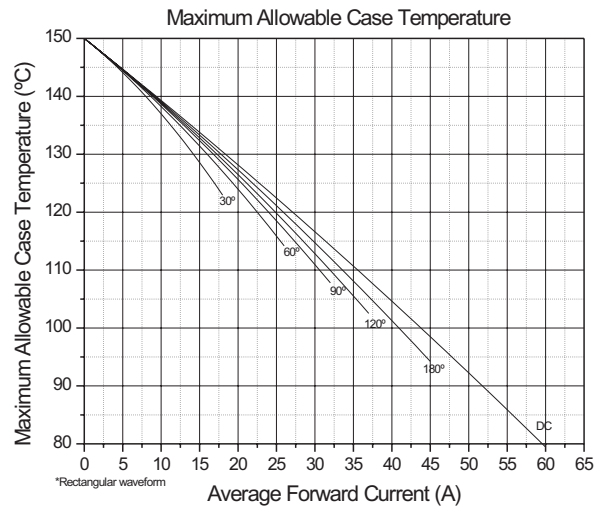


Fig. 2 - Current Ratings Characteristics

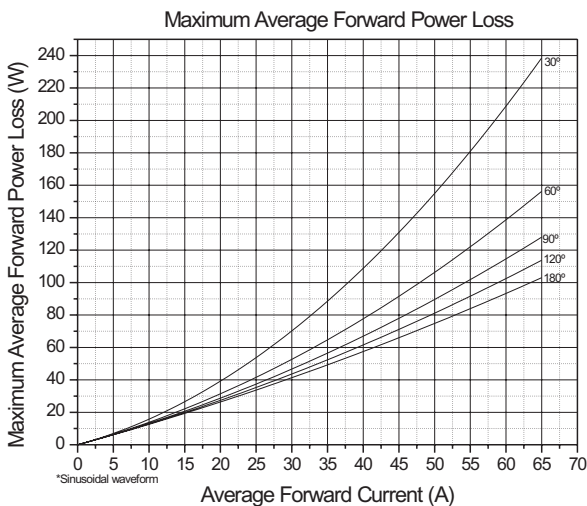


Fig. 3 - Forward Power Loss Characteristics

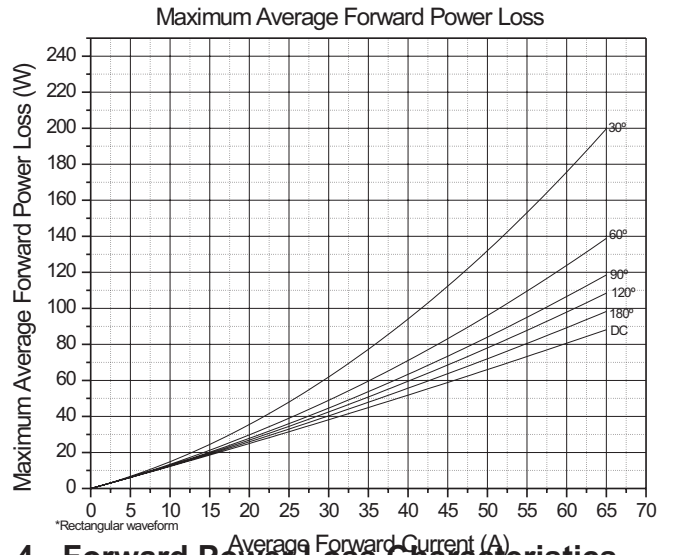


Fig. 4 - Forward Power Loss Characteristics



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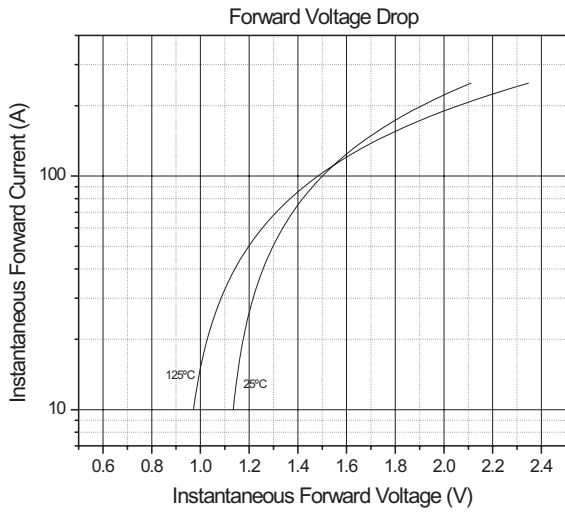


Fig. 5 - Forward Voltage Drop Characteristics

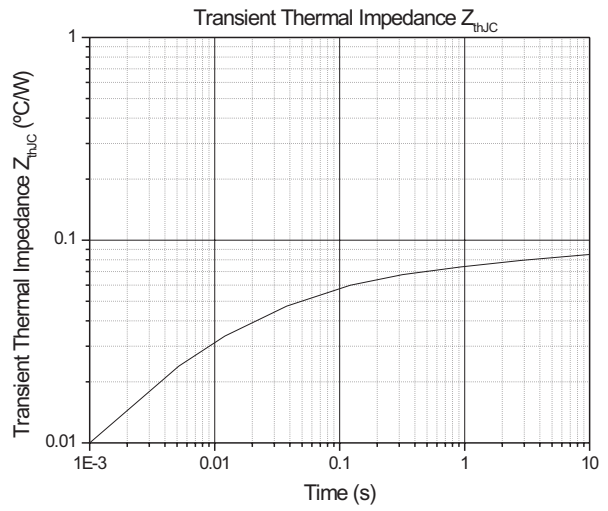


Fig. 6 - Transient Thermal Impedance Characteristics

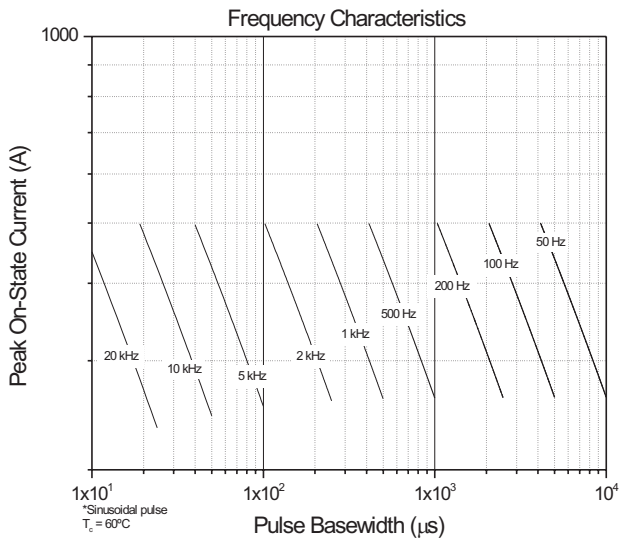


Fig. 7 - Frequency Characteristics

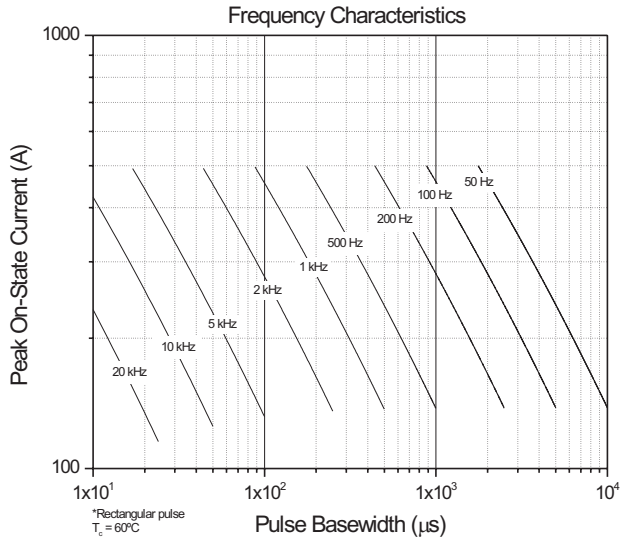


Fig. 8 - Frequency Characteristics

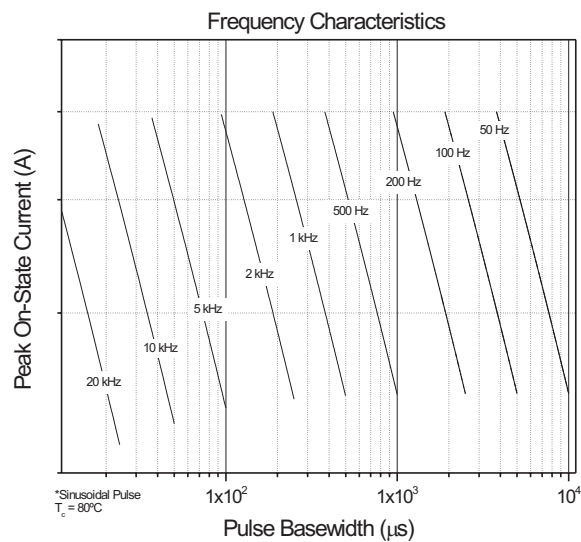


Fig. 9 - Frequency Characteristics

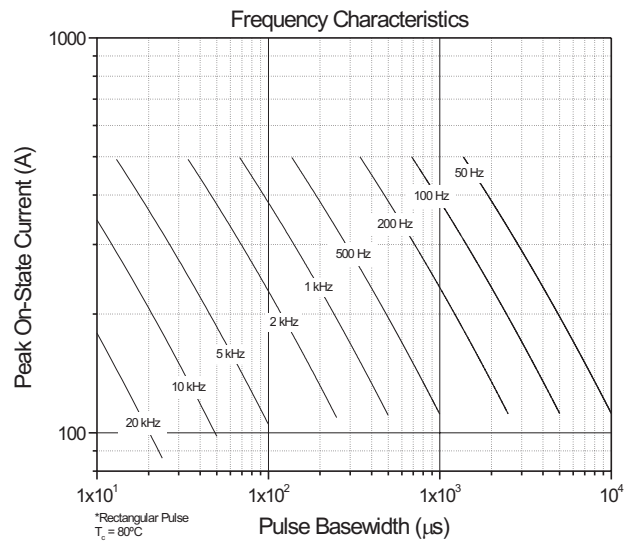


Fig. 10 - Frequency Characteristics



AEGIS

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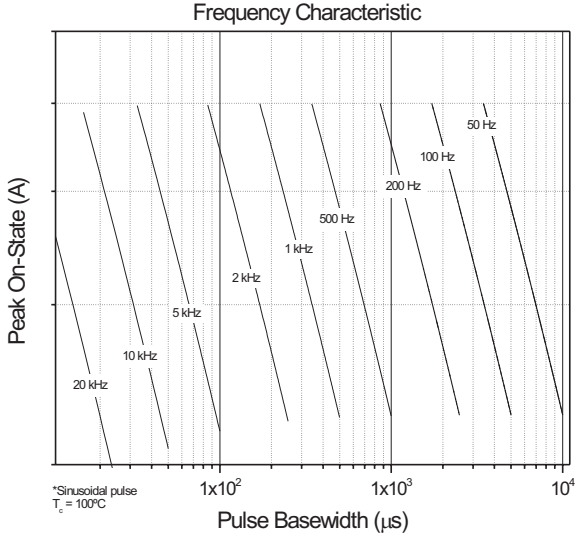


Fig. 11 - Frequency Characteristics

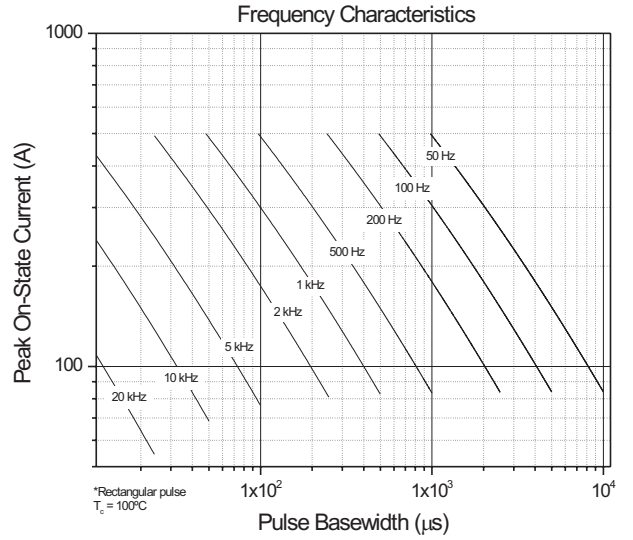


Fig. 12 - Frequency Characteristics

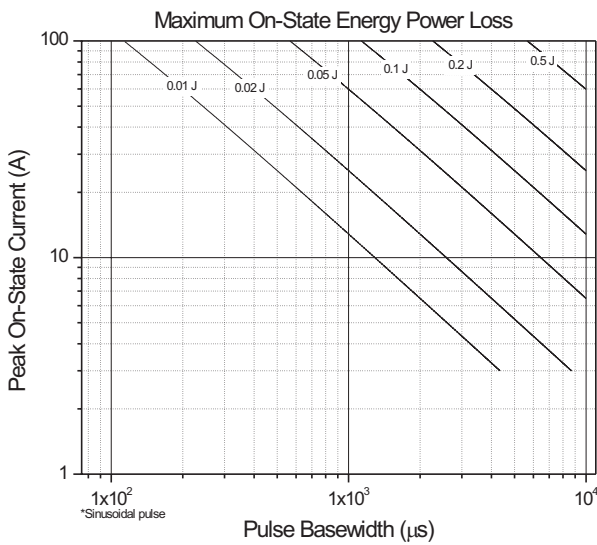


Fig. 13 - Maximum On-State Power Loss Characteristics

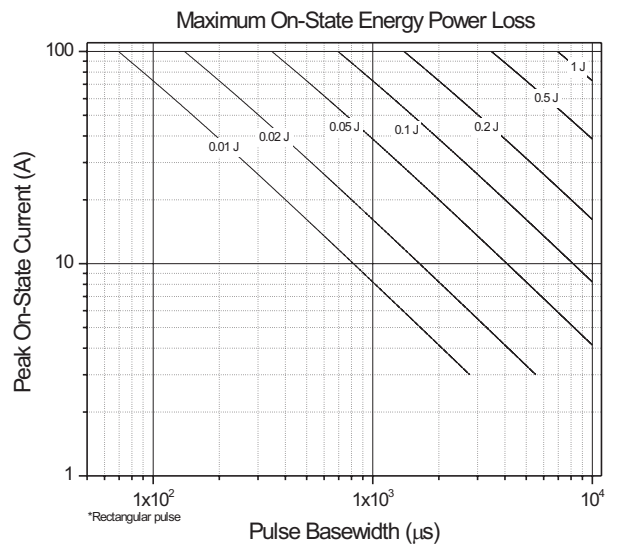


Fig. 14 - Maximum On-State Power Loss Characteristics

DO-203AB (DO-5)

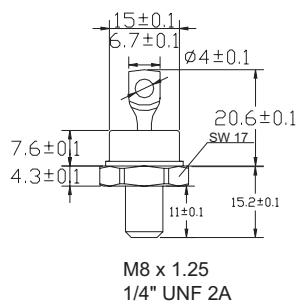


Fig. 15 - Outline Characteristics