

Standard Recovery Diodes

FEATURES

- High surge capability
- Qualified for industrial level
- International standard case TO-200AD
- Ceramic insulator

TYPICAL APPLICATIONS

- Power supplies
- Machine tools control
- High power drives
- Welders
- Traction power supplies

MAJOR RATINGS AND CHARACTERISTICS			
PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		2300	A
	T_{Case}	125	°C
$I_{F(RMS)}$		4420	A
	T_{Case}	125	°C
I_{FSM}	50 Hz	34100	A
	60 Hz	35700	A
I^2t	50 Hz	4907	kA ² s
	60 Hz	5300	kA ² s
V_{DRM}/V_{RRM}		200 to 1600	V
T_J		-40 to 180	°C

ELECTRICAL SPECIFICATIONS

VOLTAGE RATINGS				
SERIES	VOLTAGE CODE	V_{DRM}/V_{RRM} , MAX. RE- PETITIVE PEAK AND OFF-STATE VOLTAGE (V)	V_{RSM} , MAX. NON- REPETITIVE PEAK VOLTAGE (V)	I_{DRM}/I_{RRM} , MAX. at T_J = $T_{J(Max.)}$ (mA)
D2300/...	02	200	300	100
D2300/...	04	400	500	
D2300/...	06	600	700	
D2300/...	08	800	900	
D2300/...	10	1000	1100	
D2300/...	12	1200	1300	
D2300/...	14	1400	1500	
D2300/...	16	1600	1700	

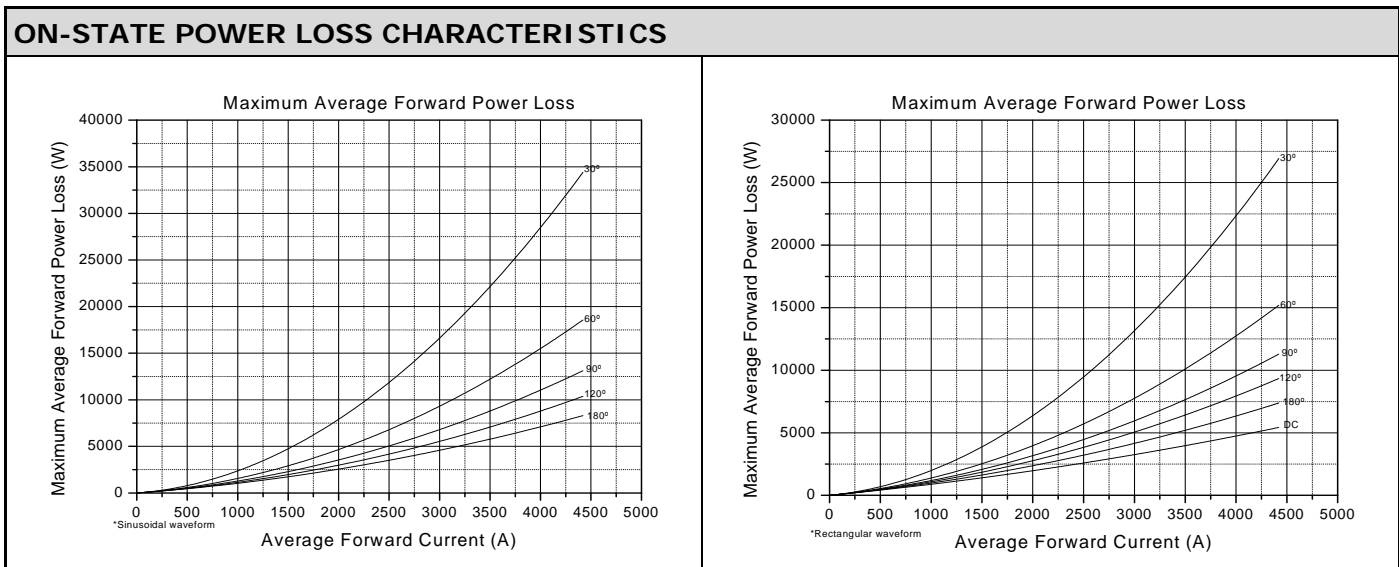
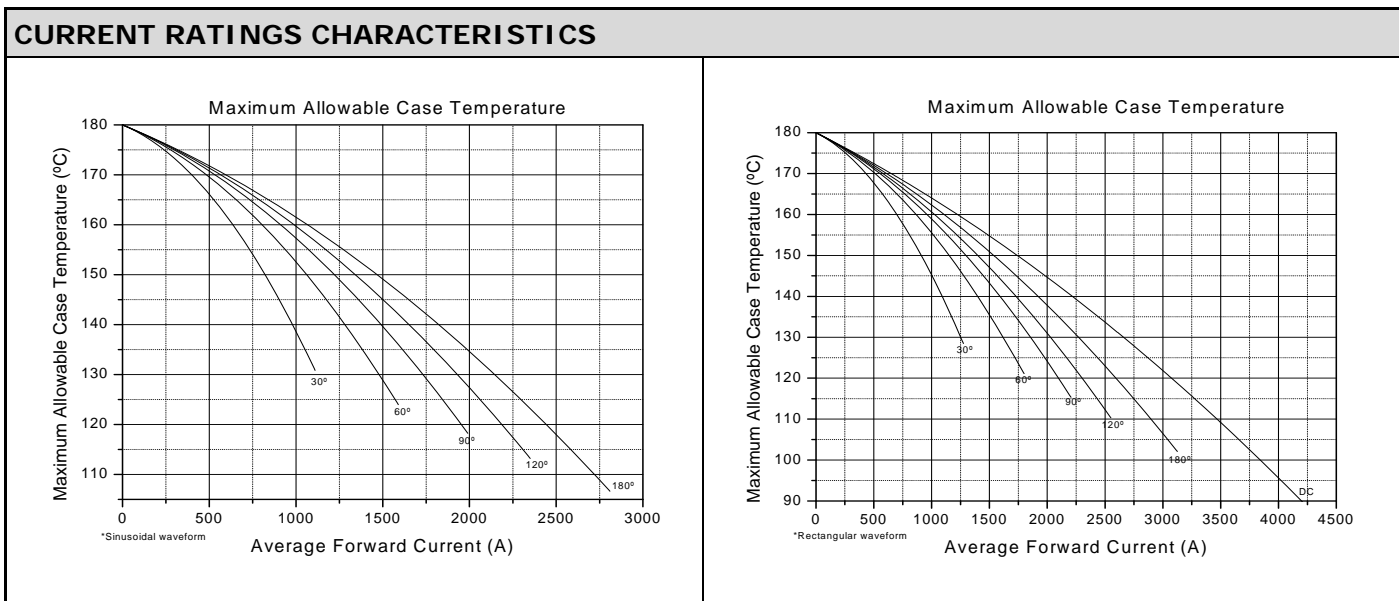
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MAXIMUM ALLOWABLE RATINGS					
SYMBOL	DESCRIPTION	TEST CONDITIONS		VALUE	UNITS
$I_{F(AV)}$	Maximum average on-state current at heatsink temperature	180° conduction, half sine wave, double side cooled		2300	A
				125	°C
$I_{F(RMS)}$	Maximum RMS on-state current	DC at 25°C heatsink temperature, double side cooled		4420	A
I_{FSM}	Maximum peak, one-cycle non-repetitive surge current	t = 10 ms	100% V_{RRM} reapplied	Sinusoidal half wave, initial $T_J = T_J \text{ max.}$	kA
		t = 8.3 ms	reapplied		
		t = 10 ms	No voltage reapplied		
		t = 8.3 ms	reapplied		
I^2t	Maximum I^2t	t = 10 ms	100% V_{RRM} reapplied		kA ² s
		t = 8.3 ms	reapplied		
		t = 10 ms	No voltage reapplied		
		t = 8.3 ms	reapplied		
$I^2t^{1/2}$	Maximum $I^2t^{1/2}$	t = 0.1 to 10 ms, no voltage reapplied		58100	kA ² s ^{1/2}
$V_{F(TO)}$	Low level threshold voltage	(16.7% $\times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)}$), $T_J = T_J \text{ max.}$		0.786	V
r_F	Low level on-state slope resistance			0.100	mΩ
V_{FM}	Maximum on-state voltage	$I_{pk} = 7225A$, 50Hz half sine pulse, $T_J = T_J \text{ max.}$		1.53	V

THERMAL AND MECHANICAL SPECIFICATIONS				
SYMBOL	DESCRIPTION	TEST CONDITIONS	VALUE	UNITS
T_J	Maximum operating junction temperature	-	-40 to 180	°C
T_{Stg}	Maximum storage temperature	-	-40 to 180	
R_{thJ-hs}	Maximum thermal resistance, junction to heatsink	DC, double side cooled	0.023	°C/W
		180° sine wave, double side cooled	0.024	
		120° rectangular wave, double side cooled	0.025	
R_{thC-hs}	Maximum thermal resistance, case to heat-sink	Mtg. Surface smooth, flat, greased, double side cooled	0.01	
-	Mounting force, ± 10%	-	2500	kgf
-	Approximate weight	-	425	g
-	Case style	-	TO-200AD	JEDEC

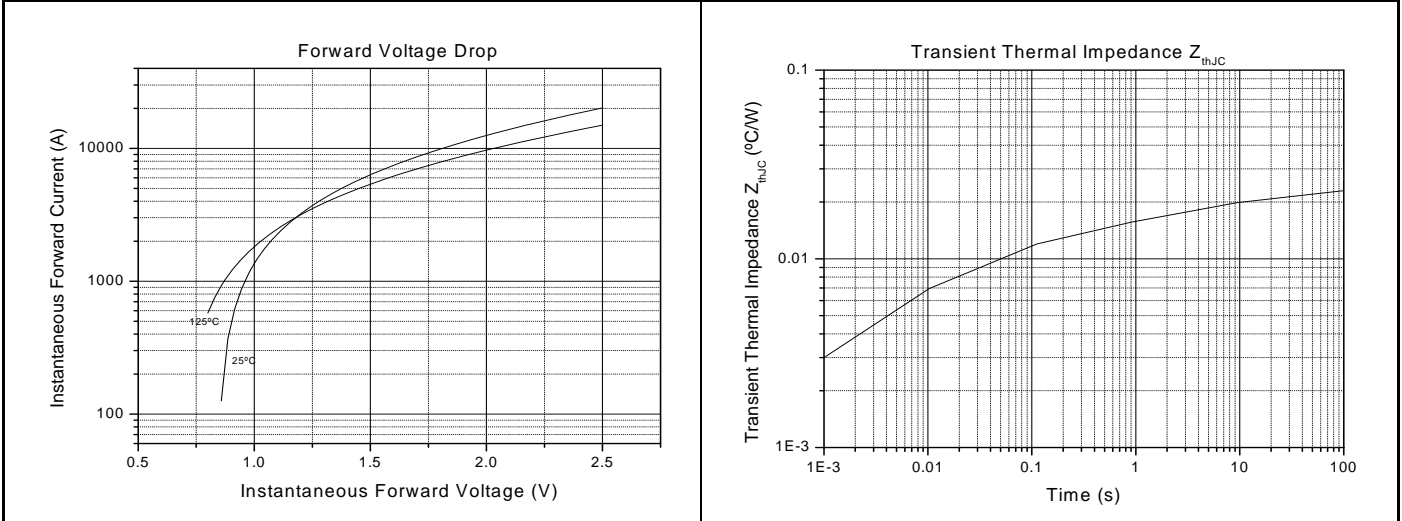
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CURRENT FORM FACTOR								
FORM FACTOR	CONDUCTION ANGLE	15°	30°	45°	60°	90°	120°	180°
Sine wave		31.956	15.832	10.452	7.721	4.933	3.527	2.468
Rectangular wave		24.000	12.000	8.000	6.000	4.000	3.000	2.000

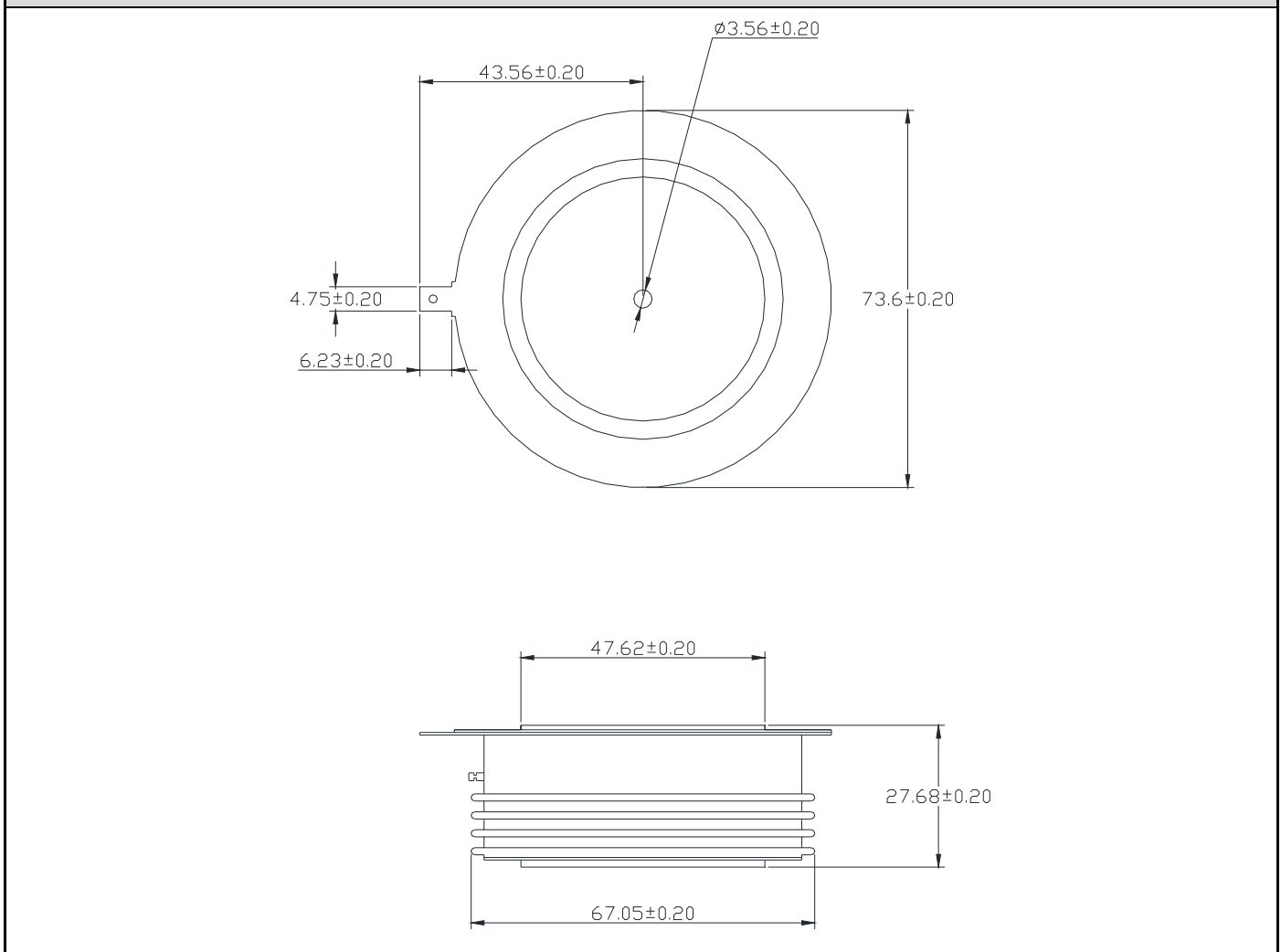


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FORWARD VOLTAGE DROP / THERMAL IMPEDANCE CHARACTERISTICS



OUTLINE CHARACTERISTICS



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ORDERING INFORMATION

Device code

D	2300	/	16	-	-	-
①	②	③	④	⑤	⑥	⑦

- | | |
|---|--|
| 1 | <ul style="list-style-type: none"> - N = Phase Control Thyristors - F = Fast Thyristors (inverter grade) - D = Normal Recovery Diodes - DF = Fast Recovery Diodes - DD = Module (diode-diode) - DT = Module (diode-thyristor) - TD = Module (thyristor-diode) - TT = Module (thyristor-thyristor) - P = Press-fit diode |
| 2 | <ul style="list-style-type: none"> - Average Current Code |
| 3 | <ul style="list-style-type: none"> - Essential Part Number |
| 4 | <ul style="list-style-type: none"> - Voltage Code x 100 = V_{RRM} |
| 5 | <ul style="list-style-type: none"> - Turn-off time (fast thyristors only) - Reverse Recovery Time (fast diodes only) |
| 6 | <ul style="list-style-type: none"> - M = Metric Thread - I = Inch Thread |
| 7 | <ul style="list-style-type: none"> - None = Anode to stud (stud diodes only) - R = Cathode to stud (stud diodes only) |

Disclaimer

All product specifications and data are subject to change without notice.

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