

### Standard Recovery Diodes

#### FEATURES

- High surge capability
- Qualified for industrial level
- International standard case DO-205AA
- Both metric and inch threads

#### TYPICAL APPLICATIONS

- Power supplies
- Machine tools control
- High power drives
- Welders
- Medium traction

MAJOR RATINGS AND CHARACTERISTICS			
PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		130	A
	$T_{Case}$	125	°C
$I_{F(RMS)}$		260	A
	$T_{Case}$	125	°C
$I_{FSM}$	50 Hz	2600	A
	60 Hz	2750	A
$I^2t$	50 Hz	33	kA <sup>2</sup> s
	60 Hz	36	kA <sup>2</sup> 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	$V_{RSM}$ , MAX. NON- REPETITIVE PEAK VOLTAGE (V)	$I_{DRM}/I_{RRM}$ , MAX. at $T_J$ = $T_{J(Max.)}$ (mA)
D130/...	02	200	300	20
D130/...	04	400	500	
D130/...	06	600	700	
D130/...	08	800	900	
D130/...	10	1000	1100	
D130/...	12	1200	1300	
D130/...	14	1330	1500	
D130/...	16	1520	1700	

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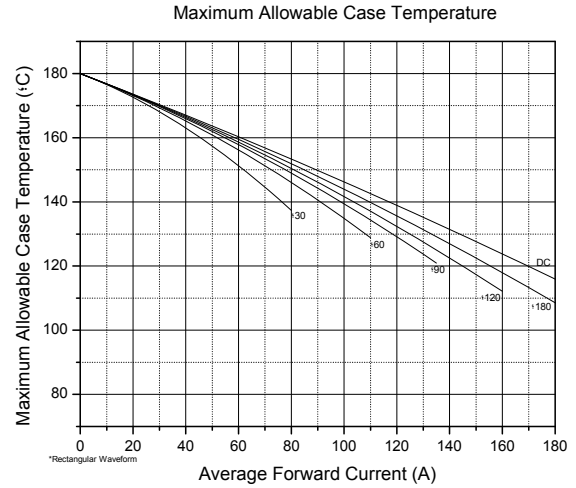
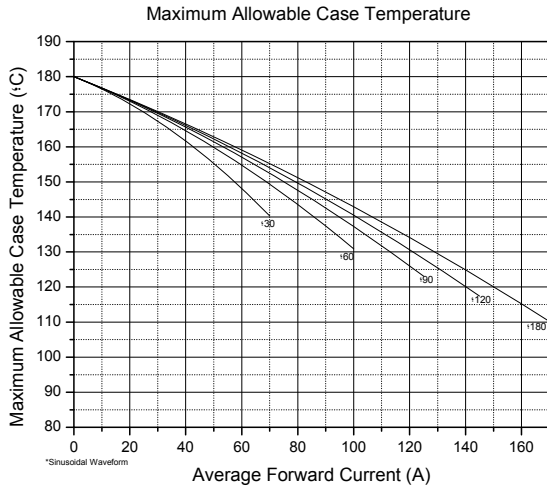
MAXIMUM ALLOWABLE RATINGS						
SYMBOL	DESCRIPTION	TEST CONDITIONS			VALUE	UNITS
$I_{F(AV)}$	Maximum average on-state current at heatsink temperature	180° conduction, half sine wave			130	A
					125	°C
$I_{F(RMS)}$	Maximum RMS on-state current	DC at 25°C heatsink temperature			260	A
$I_{FSM}$	Maximum peak, one-cycle non-repetitive surge current	t = 10 ms	100% $V_{RRM}$ reapplied	Sinusoidal half wave, initial $T_J = T_J$ max.	2.20	kA
		t = 8.3 ms			2.30	
		t = 10 ms	No voltage reapplied		2.60	
		t = 8.3 ms			2.75	
$I^2t$	Maximum $I^2t$	t = 10 ms	100% $V_{RRM}$ reapplied		23	kA <sup>2</sup> s
		t = 8.3 ms			25	
		t = 10 ms	No voltage reapplied		33	
		t = 8.3 ms			36	
$I^2t^{1/2}$	Maximum $I^2t^{1/2}$	t = 0.1 to 10 ms, no voltage reapplied			215	kA <sup>2</sup> s <sup>1/2</sup>
$V_{F(TO)}$	Low level threshold voltage	(16.7% x $\pi$ x $I_{F(AV)} < I < \pi$ x $I_{F(AV)}$ ), $T_J = T_J$ max.			0.90	V
$r_F$	Low level on-state slope resistance				0.65	mΩ
$V_{FM}$	Maximum on-state voltage	$I_{pk} = 408A$ , 50Hz half sine pulse, $T_J = T_J$ max.			1.40	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	0.35	°C/W
		180° sine wave	0.40	
		120° rectangular wave	0.43	
$R_{thC-hs}$	Maximum thermal resistance, case to heat-sink	Mtg. Surface smooth, flat, greased	0.08	
-	Mounting force, ± 10%	-	10	N.m
-	Approximate weight	-	100	g
-	Case style	-	DO-205AA	JEDEC

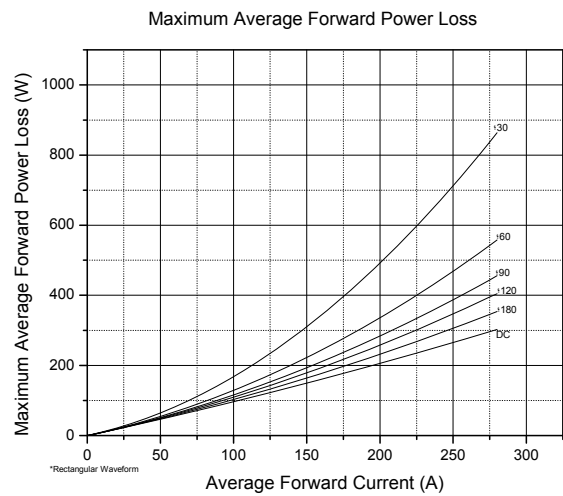
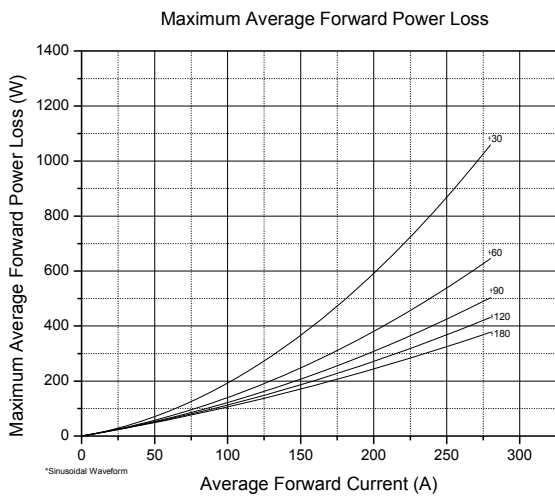
CURRENT FORM FACTOR								
FORM FACTOR	CONDUCTION ANGLE	CONDUCTION ANGLE						
		15°	30°	45°	60°	90°	120°	180°
Sine wave		31.956	15.832	10.452	7.721	4.933	3.527	2.468
Rectangular wave		24.000	12.000	8.000	6.000	4.000	3.000	2.000

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#### CURRENT RATINGS CHARACTERISTICS

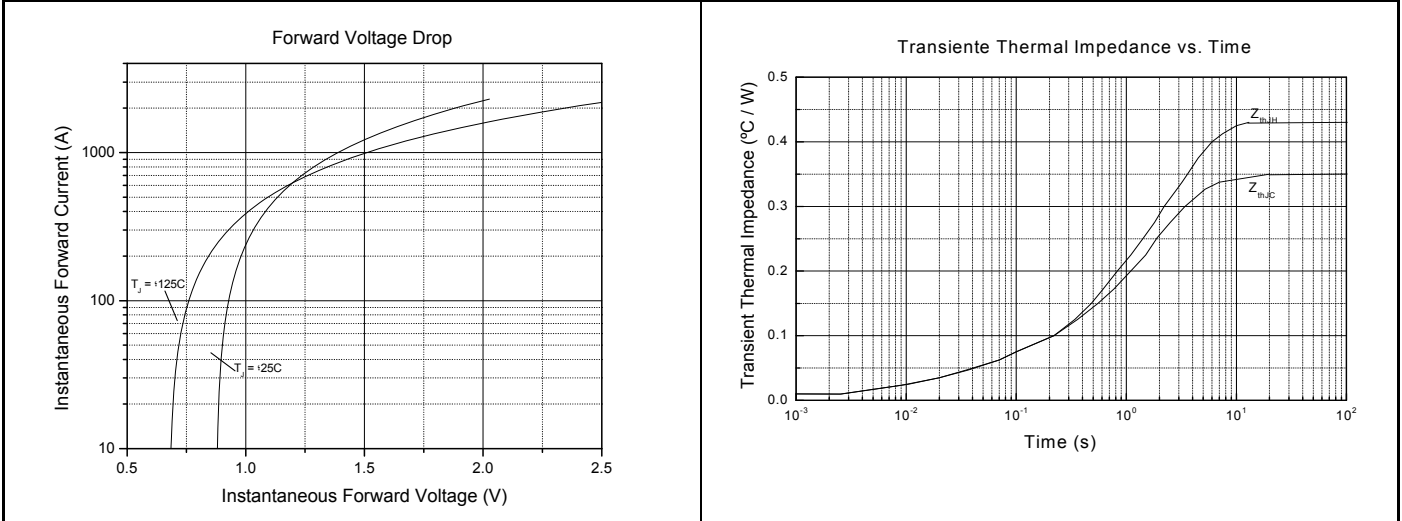


#### ON-STATE POWER LOSS CHARACTERISTICS

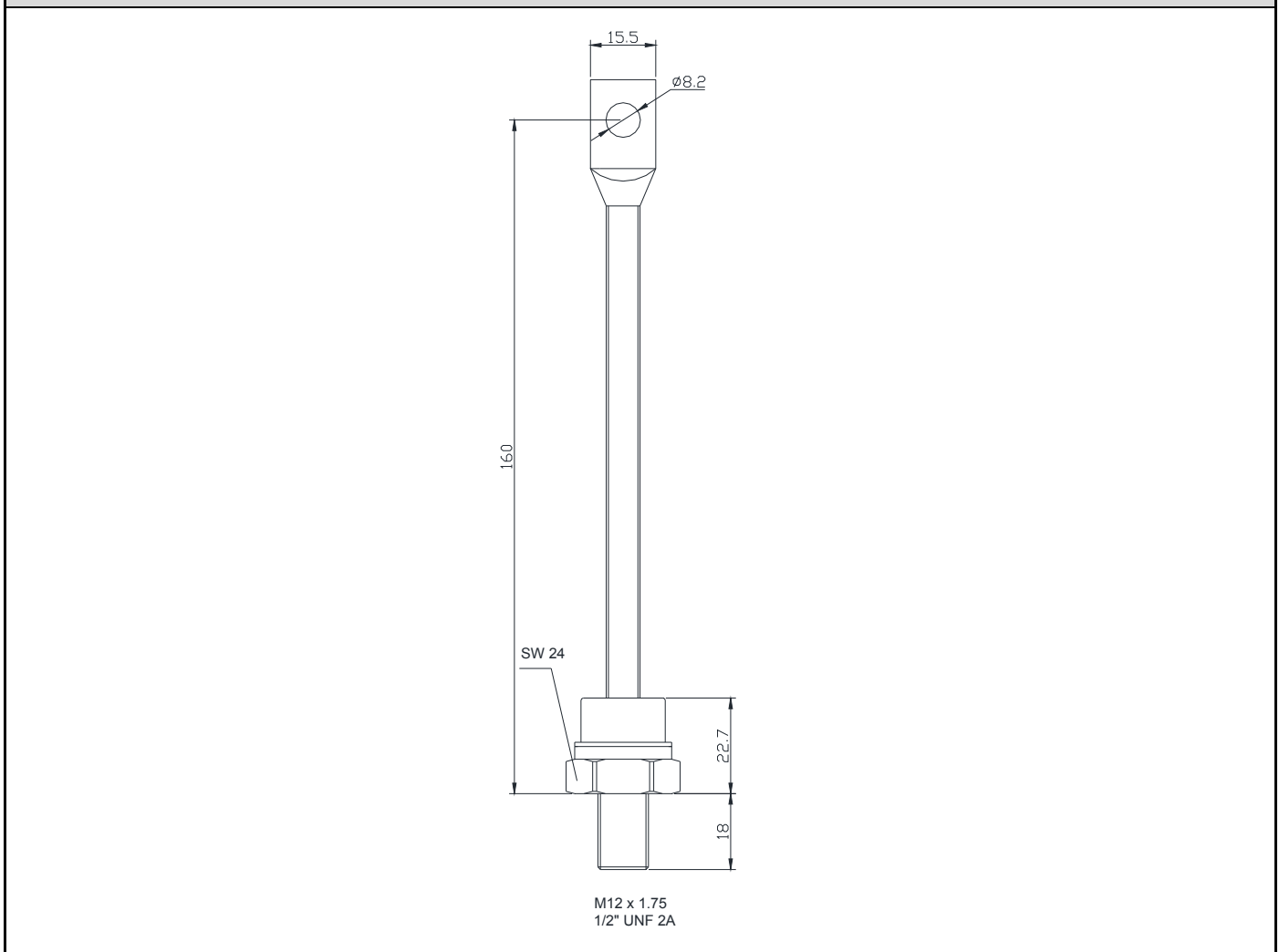


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#### FORWARD VOLTAGE DROP / THERMAL IMPEDANCE CHARACTERISTICS



#### OUTLINE CHARACTERISTICS



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#### ORDERING INFORMATION

Device code

D	130	/	16	-	M	-
①	②	③	④	⑤	⑥	⑦

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

#### Disclaimer

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