

Three-Phase Rectifier Bridge

FEATURES

- High surge capability
- Qualified for industrial level
- Leads suitable to PCB soldering
- Isolated baseplate
- Easy mounting on heatsink

TYPICAL APPLICATIONS

- Power supplies
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

MAJOR RATINGS AND CHARACTERISTICS			
PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		35	A
	T_{Case}	65	°C
$I_{F(RMS)}$		55	A
	T_{Case}	65	°C
I_{FSM}	50 Hz	475	A
	60 Hz	500	A
I^2t	50 Hz	1130	A ² s
	60 Hz	1030	A ² s
V_{DRM}/V_{RRM}		200 to 1200	V
T_J		-55 to 150	°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)
TB35/...	02	200	300	0.5
TB35/...	04	400	500	
TB35/...	06	600	700	
TB35/...	08	800	900	
TB35/...	10	1000	1100	
TB35/...	12	1200	1300	

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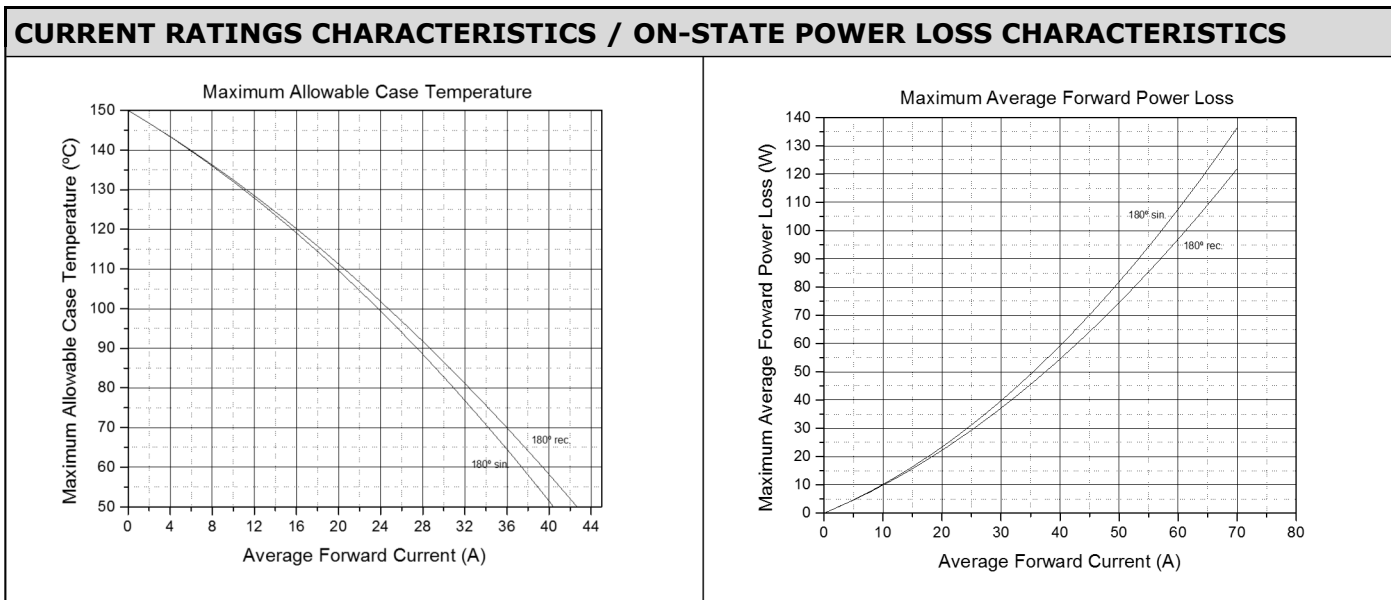
MAXIMUM ALLOWABLE RATINGS					
SYMBOL	DESCRIPTION	TEST CONDITIONS		VALUE	UNITS
$I_{F(AV)}$	Maximum average on-state current at heatsink temperature	180° conduction, half sine wave		35	A
				65	°C
$I_{F(RMS)}$	Maximum RMS on-state current	DC at 25°C heatsink temperature		55	A
I_{FSM}	Maximum peak, one-cycle non-repetitive surge current	t = 10 ms	100% V_{RRM} reapplied	Sinusoidal half wave, initial $T_J = T_J \text{ max.}$	A
		t = 8.3 ms			
		t = 10 ms	No voltage reapplied		
		t = 8.3 ms			
I^2t	Maximum I^2t	t = 10 ms	100% V_{RRM} reapplied	A ² s	
		t = 8.3 ms			
		t = 10 ms	No voltage reapplied		
		t = 8.3 ms			
$I^2t^{1/2}$	Maximum $I^2t^{1/2}$	t = 0.1 to 10 ms, no voltage reapplied		11.30	kA ² s ^{1/2}
$V_{F(T0)}$	Low level threshold voltage	(16.7% $\times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)}$), $T_J = T_J \text{ max.}$		0.86	V
r_F	Low level on-state slope resistance			6.30	mΩ
V_{FM}	Maximum on-state voltage	$I_{pk} = 40A$, 50Hz half sine pulse, $T_J = T_J \text{ max.}$		1.20	V

BLOCKING					
SYMBOL	DESCRIPTION	TEST CONDITIONS		VALUE	UNITS
V_{INS}	RMS insulation voltage	50 Hz, circuit to base, all terminals shorted		3000(1s)	V
I_{RRM}	Maximum peak reverse and off-	$T_J = T_J \text{ max.}$, rated V_{DRM}/V_{RRM} applied		0.5	mA

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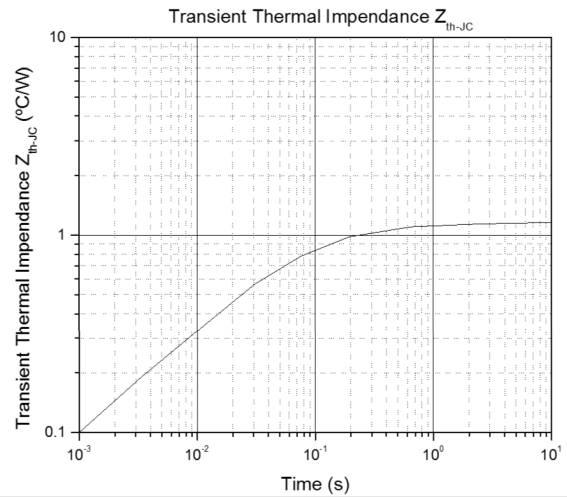
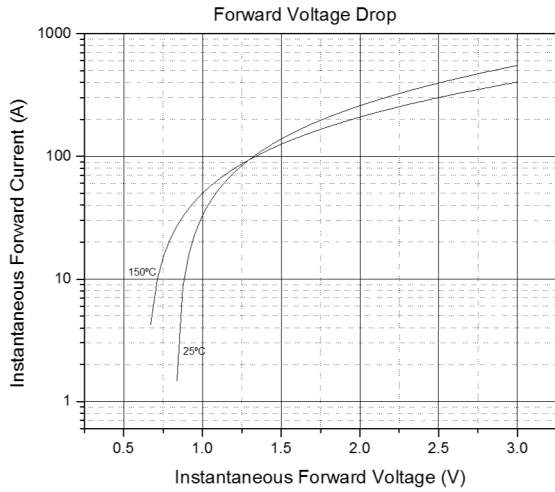
THERMAL AND MECHANICAL SPECIFICATIONS				
SYMBOL	DESCRIPTION	TEST CONDITIONS	VALUE	UNITS
T_j	Maximum operating junction temperature	-	-55 to 150	°C
T_{Stg}	Maximum storage temperature	-	-55 to 150	
R_{thJ-hs}	Maximum thermal resistance, junction to heatsink	DC	1.16	°C/W
R_{thC-hs}	Maximum thermal resistance, case to heat-sink	Mtg. Surface smooth, flat, greased	0.100	
-	Mounting force, $\pm 10\%$	To heatsink	2.0	N.m
-	Approximate weight	-	20	g

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

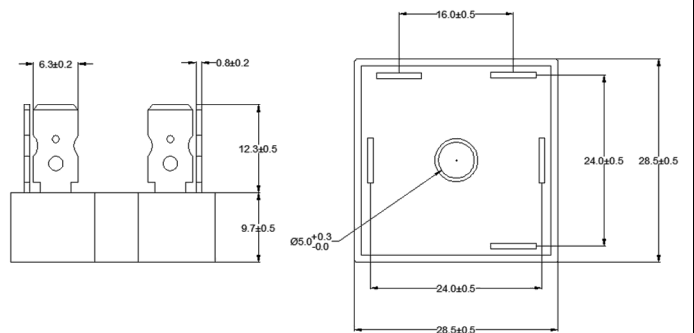
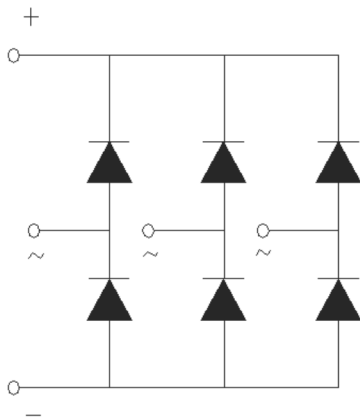


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FORWARD VOLTAGE DROP / THERMAL IMPEDANCE CHARACTERISTICS



CIRCUIT CONFIGURATION / OUTLINE CHARACTERISTICS



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ORDERING INFORMATION

Device code

TB	35	/	12	-	-	-
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) - SB = Single-Phase Rectifier Bridge - TB = Three-Phase Rectifier Bridge - P = Press-fit diode |
| 2 | - Average Current Code |
| 3 | - Essential Part Number |
| 4 | - 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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