

Three Phase Rectifier Bridge

$I_{dAV} = 39 A$ $V_{RRM} = 800/1200 V$

Preliminary data

V _{RSM}	V _{RRM}	Туре			- 0
V_{DSM}	V_{drm}			本本	Z
V	V			N O	-
900	800	VTO 39-08ho7	VVZ 39-08ho7		
1300	1200	VTO 39-12ho7	VVZ 39-12ho7		-
				4 4	4





Symbol	Conditions	Maximum Ratings		
I _{dav} (1) I _{tavm}	$T_c = 85^{\circ}C$; module $T_c = 85^{\circ}C$ (180° sine; per thyristor)	39 16	A	
I _{TSM}	$\begin{array}{ll} T_{VJ} = 45^{\circ}C & t = 10 \text{ ms} & (50 \text{ Hz}) \\ V_{R} = 0 & t = 8.3 \text{ ms} & (60 \text{ Hz}) \end{array}$	200 210	A A	
	$\begin{array}{ll} T_{_{VJ}} = T_{_{VJM}} & t = 10 \mbox{ ms} & (50 \mbox{ Hz}) \\ V_{_{R}} = 0 & t = 8.3 \mbox{ ms} & (60 \mbox{ Hz}) \end{array}$	180 190	A A	
l²t	$\begin{array}{ll} T_{VJ} = 45^{\circ}C & t = 10 \text{ ms} & (50 \text{ Hz}) \\ V_{R} = 0 & t = 8.3 \text{ ms} & (60 \text{ Hz}) \end{array}$	200 150	A²s A²s	
	$\begin{array}{ll} T_{VJ} = T_{VJM} & t = 10 \mbox{ ms} & (50 \mbox{ Hz}) \\ V_{R} = 0 & t = 8.3 \mbox{ ms} & (60 \mbox{ Hz}) \end{array}$	160 150	A²s A²s	
(di/dt) _{cr}	$T_{VJ} = T_{VJM}$ repetitive; $I_T = 20 \text{ A}$ f = 50 Hz; $t_p = 200 \mu\text{s}$	100	A/µs	
	$\begin{split} V_{\text{D}} &= \frac{2}{3} V_{\text{DRM}} & \text{non repetitive;} \\ I_{\text{G}} &= 0.15 \text{ A} & I_{\text{T}} = I_{\text{TAVM}} \\ di_{\text{G}} / dt &= 0.15 \text{ A} / \mu \text{s} \end{split}$	500	A/µs	
(dv/dt) _{cr}	$T_{VJ} = T_{VJM}; V_D = \frac{2}{3} V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)	500	V/µs	
V _{RGM}		10	V	
P _{GM} P _{GAVM}	$ \begin{array}{ll} T_{VJ} = T_{VJM} & t_p = \ 30 \ \mu s \\ I_T = I_{TAVM} & t_p = \ 300 \ \mu s \end{array} $	≤ 5 ≤ 2.5 0.5	W W W	
T _{VJ} T _{VJM} T _{stg}		-40+125 125 -40+125	0° 0° 0°	
V _{ISOL}	$\begin{array}{ll} 50/60 \text{ Hz, RMS} & t=1 \text{ min} \\ I_{\text{ISOL}} \leq 1 \text{ mA} & t=1 \text{ s} \end{array}$	2500 3000	V~ V~	
M _d	Mounting torque (M4)	1.5 - 2 14 - 18	Nm lb.in	
Weight	Тур.	18	g	



Features

- Package with DCB ceramic base plate
- Isolation voltage 3000 V~
- Planar passivated chips
- Low forward voltage drop
- · Leads suitable for PC board soldering

Applications

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

Advantages

- Easy to mount with two screw
- · Space and weight savings
- Improved temperature &
- power cycling capabilitySmall and light weight

Data according to IEC 60747 and refer to a single diode unless otherwise stated

① for resistive load at bridge output.

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Symbol	Characteristic Values				
I _D ; I _R	$V_{\rm R} = V_{\rm RRM}; V_{\rm D} = V_{\rm DRM}$	$T_{VJ} = T_{VJM}$	<u><</u>	5	mA
V _T	I _T = 20 A	$T_{vJ} = 25^{\circ}C$	\leq	1.6	V
ν _{τ0} r _τ	For power-loss calculations only	$T_{vJ} = 125^{\circ}C$		0.85 27	V mΩ
V _{gt}	$V_{D} = 6 V$	$\begin{array}{l} T_{vJ}=~25^{\circ}C\\ T_{vJ}=-40^{\circ}C \end{array}$	≤ ≤	1.5 2.5	V V
I _{GT}	$V_{D} = 6 V$	$T_{vJ} = 25^{\circ}C$ $T_{vJ} = -40^{\circ}C$	≤ ≤	25 50	mA mA
V _{gd} I _{gd}	$V_D = {}^2/_3 V_{DRM}$	$T_{\rm VJ}=T_{\rm VJM}$	≤ ≤	0.2 3	V mA
I _L	$t_p = 10 \ \mu s$ $I_G = 0.1 \ A; \ di_G / dt = 0.1 \ A / \mu s$	$T_{vJ} = 25^{\circ}C$	≤	75	mA
I _H	V_{D} = 6 V; R_{GK} = ∞	$T_{vJ} = 25^{\circ}C$	<u> <</u>	50	mA
t _{gd}	$V_{\rm D} = \frac{1}{2}V_{\rm DRM}$ $I_{\rm G} = 0.1$ A; di _G /dt = 0.1 A/µs	$T_{vJ} = 25^{\circ}C$	≤	2	μs
R _{thJC}	per thyristor / diode; DC per module			1.3 0.22	K/W K/W
$\mathbf{R}_{\mathrm{thJH}}$	per thyristor / diode; DC per module			1.8 0.3	K/W K/W
ds	Creeping distance on surface	Э		11.2	mm
d _A a	Creepage distance in air Max. allowable acceleration			5 50	mm m/s²

Dimensions in mm (1 mm = 0.0394")





VTO 39

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